Norwegian Safety Investigation Authority

Issued May 2026

REPORT MARINE 2026/04

Marine accident involving a rental vessel in Bergsfjorden in Loppa municipality, 19 May 2025

This report has been translated into English and published by the NSIA to facilitate access by international readers. As accurate as the translation might be, the original Norwegian text takes precedence as the report for reference

The Norwegian Safety Investigation Authority (NSIA) has produced this report exclusively for the purpose of improving safety at sea.

A safety investigation is conducted in order to determine the sequence of events and causal factors, study factors of importance for preventing marine accidents and improving safety at sea, and publish a report and any safety recommendations. It is not the NSIA's task to apportion blame or liability under criminal or civil law.

This report should not be used for purposes other than preventive maritime safety work.

Photo: Manufacturer

Legal authority for the NSIA's activities is found in Section 473 of the Act of 24 June 1994 No 39 (the Norwegian Maritime Code), cf. regulation 11 January 2008 no. 30 concerning the designation of investigation authority pursuant to section 473 of the Maritime Code.

Table of contents

Notification of the accident

On Monday 19 May 2025, the Norwegian Safety Investigation Authority (NSIA) was notified that a boat carrying two tourist anglers had capsized at Silda in Loppa municipality. A rescue operation was initiated and it later became clear that one of the tourist angler had died in the accident.

The NSIA initiated a safety investigation and travelled to Alta on 20 May 2025 to conduct interviews with the surviving tourist angler and other affected parties. The recreational vessel sank the day after the accident and had not been located at the time of publication of this report.

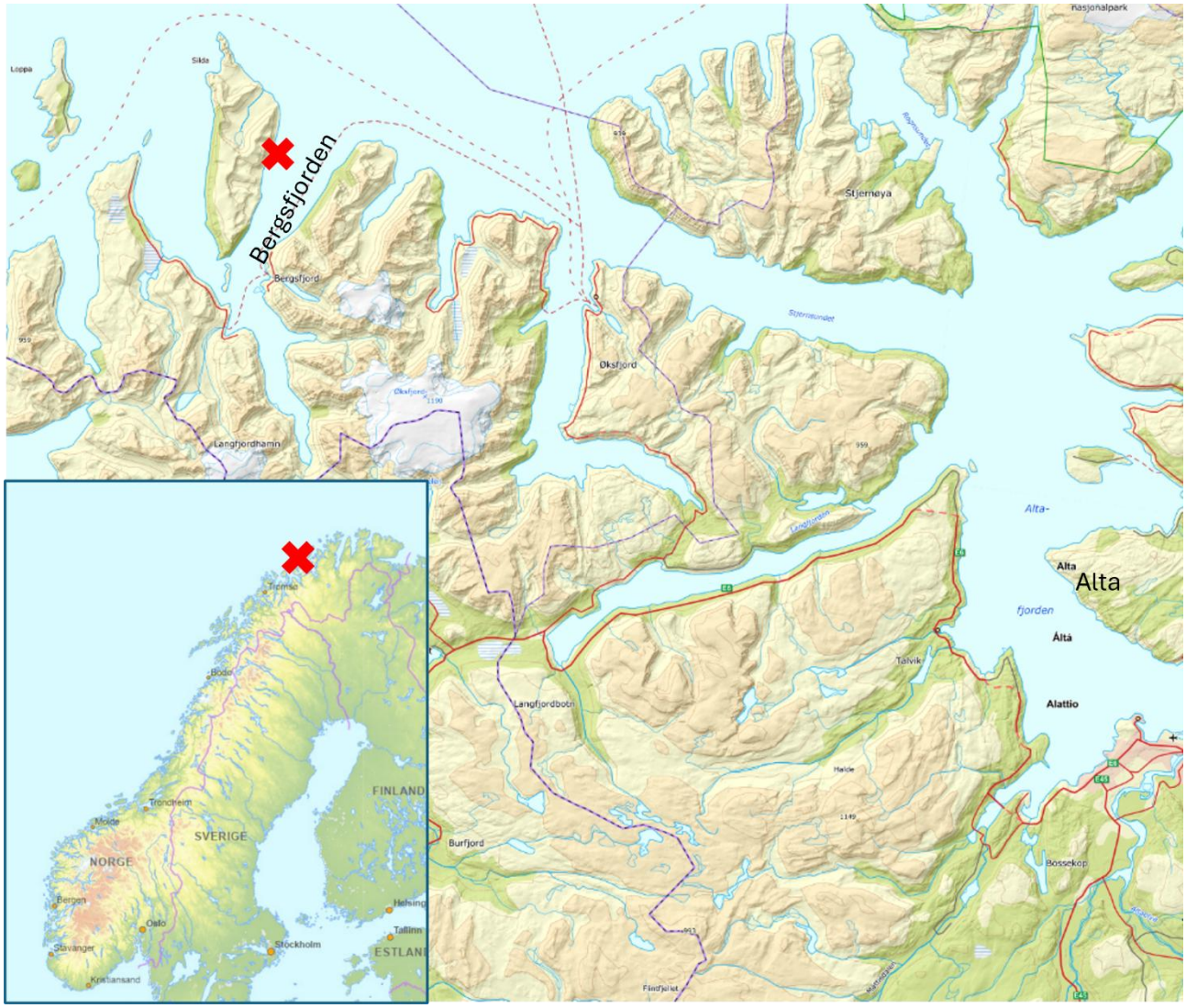

Figure 1: The red cross indicates where the accident occurred. Map: Kystinfo, Norwegian Coastal Administration / NSIA

Summary

On Monday 19 May, four members of a group of five tourists from Lithuania went fishing in Bergsfjorden, divided between two identical boats. As a fresh westerly breeze had been forecast in the area, the rental company had informed the tourist anglers that they should remain in the lee of the island of Silda. While heading out, they observed something ahead on the horizon that they described as small 'tornadoes' and decided to turn around and return to the fishing camp. At one point, while proceeding south along the eastern side of Silda, one of the boats were suddenly overtaken by one of the 'tornadoes'. The vessel was exposed to strong winds from the port side, causing the boat to heel to starboard and capsize within a few seconds. One of the tourist angler managed to alert others by mobile phone after reaching shore. The other tourist angler died as a result of the capsize.

Satellite imagery from the Norwegian Meteorological Institute (MET) later showed that powerful wind gusts had been observed around the time of the accident, reaching up to 24–26 m/s at weather stations in the area. In addition, satellite imagery clearly showed mountain waves with indications of downslope winds on the lee side of Silda. The 'tornadoes' that were observed may also have formed as a result of mountain waves and downslope winds on the lee side, where local topography and changes in horizontal wind with altitude may have played an important role in the formation of such vortices. High-resolution models from MET also indicated chaotic wind conditions in the area on the lee side of the island during the relevant time period. This may have produced local gusts that also blew towards the shore, which could explain why the boat capsized to starboard and later ended up in the foreshore of Silda even though the forecast wind direction suggested offshore winds. The rescue vessel that arrived at the accident site measured wind gusts exceeding 30 m/s.

Local conditions such as mountain waves with downslope winds were not captured by the models used by the Norwegian Meteorological Institute and were therefore not included in the weather forecasts issued. The tourist anglers and the rental company therefore did not have access to this information when the decision was made to proceed to the lee side of Silda.

It can be challenging for a rental company to assess how the weather will actually develop when special weather phenomena such as mountain waves are not included in the forecasts issued by the Meteorological Institute. To gain an indication of how strong winds may become in an area, measurements from nearby weather stations or forecasts for wind-exposed areas may provide an indication of the wind potential in the area.

The NSIA conducted stability calculations of the vessel to assess how much force would be required to capsize it and to evaluate the effect of the windage of the wheelhouse. The vessel's stability was generally good with two persons on board, but the calculations showed that when subjected to gusts exceeding 30 m/s the vessel would capsize. This corresponds with the gusts of over 30 m/s that were observed on the day of the accident. It is therefore vital that rental enterprises consider the wind potential in an area, as powerful gusts may generate significant wind loads – in this case specifically due to the large wheelhouse – thereby adversely affecting the stability of the vessel.

The rental company had fitted AIS tracking to the vessels and installed VHF DSC with a distress button. This was not required by the current regulations but had been implemented by the rental company to enhance safety. In this case, however, there was no time to use the distress button as the capsizing occurred rapidly. The NSIA considers the margin for the tourist angler to have successfully raised the alarm to have been narrow, as the mobile phone might have had no signal or ceased to function after he entered the water. In this accident, for example, a Personal Locator Beacon (PLB) capable of alerting the emergency services directly would rapidly have provided

information about the position of the persons in distress. This would have constituted a more reliable means of alerting than a mobile telephone that had fallen into the sea.

The NSIA considers that there is a lack of regulations specifically directed at rental enterprises and the safety measures required to conduct safe rental operations. This is particularly important given that those who rent boats are not always familiar with the vessel, the waters, the weather conditions or the Norwegian emergency alerting system. The regulations currently applicable to rental enterprises are too generic and contain few safety measures specifically aimed at ensuring the safe rental of vessels.

About the investigation

Purpose and method

The purpose of this investigation has been to determine the cause of the craft capsizing and a tourist angler losing his life. The NSIA has also considered what can be done to improve safety and prevent similar incidents in future.

The accident and the circumstances surrounding it have been investigated and analysed in line with the NSIA's framework and analysis process for systematic safety investigations (the NSIA method[1]).

The investigating authority decides the scope of the investigation and how it is to be conducted. This may entail that matters potentially relevant to legal proceedings or insurance settlements are not examined in detail or addressed in the report. The report is therefore not suitable for purposes other than preventing maritime accidents and improving maritime safety, and should therefore not be used for other purposes.

Sources of information

The factual information is based on:

- Interviews with survivors and other members of the group of tourist anglers
- Interview with the rental company
- Interviews and other information obtained by the police
- Logs from rescue units and photo/video material from the rescue operation
- Information from the manufacturer and boat builder

The investigation report

The first part of the report, 'Factual information', describes the sequence of events, related data and information gathered in connection with the accident, what the NSIA has investigated and related findings.

The second part, 'Analysis', contains the NSIA's assessment of the sequence of events and contributory factors based on factual information and completed investigations/examinations. Circumstances and factors found to be of little relevance to explaining and understanding the accident will not be discussed in detail.

The NSIA's conclusions are described at the end of the report.

[1] *NSIA – Norwegian Safety Investigation Authority. See https://www.nsia.no/About-us/Methodology*

1. Factual information

1. Factual information

1.1 Sequence of events

On 13 May 2025, a group of five tourist anglers from Lithuania arrived at Sandland Brygge in Loppa Municipality. The tourist anglers had rented two Wildeboat 650 boats named Loppa and Brynilen.

On Monday 19 May, the group planned to go fishing. Two persons were on board each of the two boats, while the fifth member of the group had become ill and remained ashore. As strong westerly winds had been forecast for that day, the owner of the fishing camp had asked them to remain east of the island of Silda, in the lee of the wind.

The two boats departed from the fishing camp at around 12:30 with a course for Bergsfjorden. At one point, Loppa passed the other boat and continued further out into Bergsfjorden (see Figure 2).

Figure 2: The accident boat Loppa heading out into Bergsfjorden on 19 May 2025. Photo: Private

While heading out, those on board Loppa observed something ahead on the horizon which they described as ‘tornadoes’. They saw the wind lifting the sea, felt anxious, and decided to turn around and head back. At one point, while proceeding south along the eastern side of Silda, they were suddenly overtaken by one of the ‘tornadoes’. The vessel was exposed to strong winds from the port side, causing the boat to heel to starboard and capsize within a few seconds. Both persons on board were inside the wheelhouse when the boat capzised, but eventually got out and reached the surface. Figure 3 shows the approximate position where the vessel capsized.

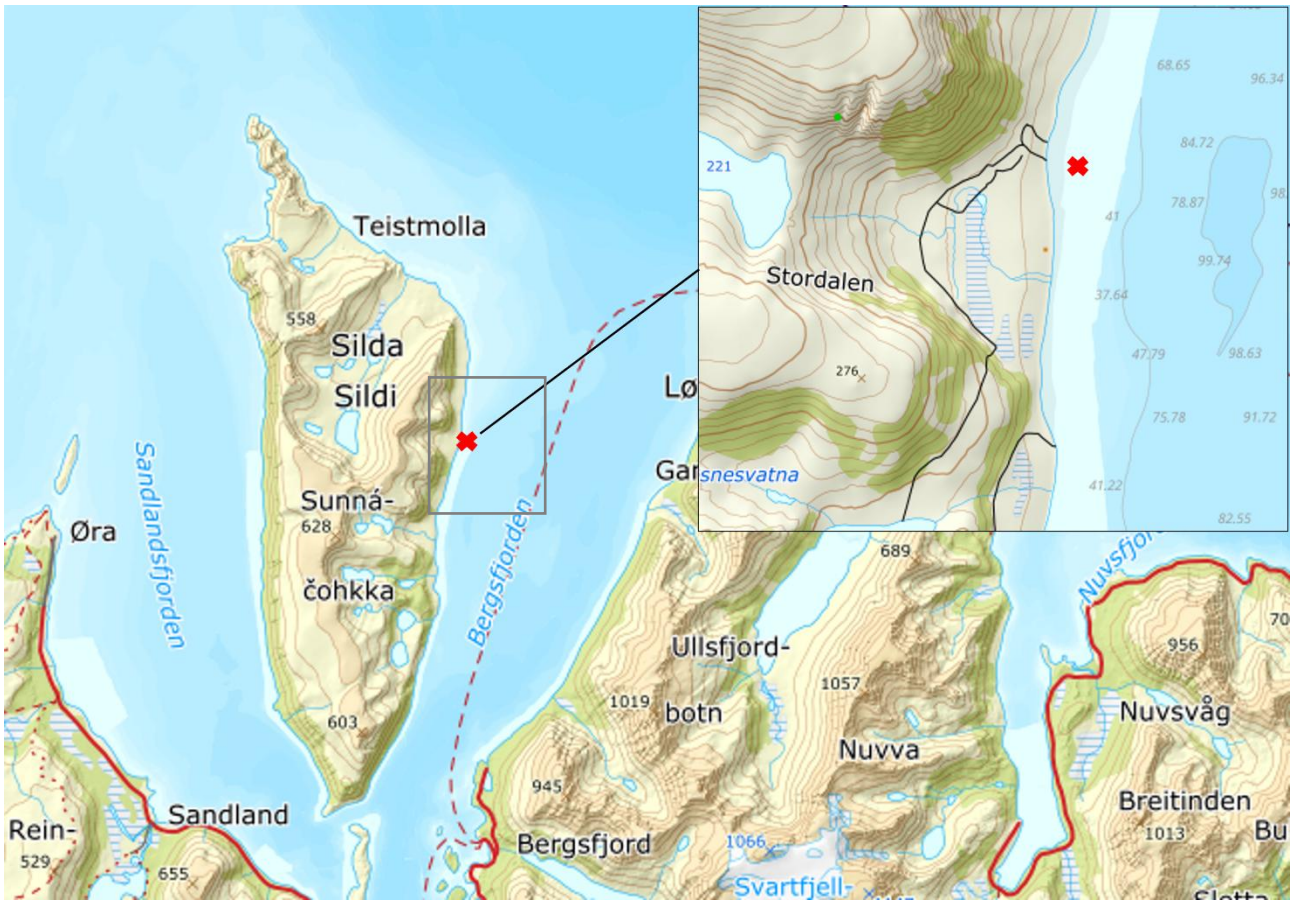

Figure 3: The red cross indicates the approximate location where the boat capsized. Map: Kystinfo, Norwegian Coastal Administration / NSIA

One of the two anglers was unconscious when he reached the surface. The other saw that the distance to shore was not far and grabbed hold of the unconscious angler and managed to pull him along. When they reached land, he performed CPR but observed no signs of life. At that point, the fisherman who had administered first aid was extremely exhausted and cold. He still had his mobile phone with him and it was functioning. He was able to call one of the members of the group on the other boat, Brynilen, who passed on the information to the member of the group who had remained on shore. He immediately contacted the rental company, who in turn contacted Coastal Radio North at 13:47, according to the log of the Joint Rescue Coordination Centre (JRCC).

1.2 Search and rescue

Following the call from the rental company, Coastal Radio North contacted the Joint Rescue Coordination Centre for Northern Norway (JRCC-N) regarding a capsized recreational vessel. JRCC-N subsequently initiated a search and rescue operation, and the rescue vessel Gjert Wilhelmsen, the ambulance boat Thea Jensen, and a rescue helicopter from Banak in Lakselv were dispatched. The rescue helicopter arrived at the casualty site at approximately 14:40, followed by the ambulance boat at approximately 14:45 and the rescue vessel at approximately 15:13.

The owner of the rental company decided to head out in his own boat that was similar to the boat in the accident, accompanied by two other persons, in an attempt to locate the casualties. From the AIS display in the office he had seen that the other boat, Brynilen, was on its way back and he encountered this boat while heading out.

They proceeded at approximately 25 knots. It was reported that there were few waves but strong wind gusts. They suddenly spotted a vessel with its keel up and the bow pointing towards land.

The owner of the rental company, who was the first to locate it, notified Coastal Radio North that the boat had been located. They observed one person behind a large rock while continuing to search for the other person. There were strong gusts of wind, and they therefore had to keep the bow pointed into the gusts at all times. Eventually they observed a person lying on the foreshore. The owner of the rental company then telephoned his colleague on shore, who was in contact with the member of the group who had spoken with the survivor. The survivor had reported that the person lying on the shore was deceased. The owner of the rental company considered entering the water to reach the survivor on land but concluded that, due to the weather conditions, it would not be safe to leave the two people accompanying him alone on the boat. They therefore remained at that position until the ambulance boat and rescue helicopter arrived.

The rescue helicopter was unable to land due to the strong winds in the area, but a doctor and a rescue swimmer were winched down onto the rescue vessel. They were then transferred to the rescue vessel's MOB boat[2], which headed towards shore to assist the two persons in distress. The crew on board the rescue vessel measured strong gusts of up to 32 m/s, and the waves were estimated to be around one metre. As the MOB boat approached the shore, they were met by one of the casualties, who was quickly provided care. At the same time, personnel from the rescue helicopter began attending to the other casualty. It was subsequently confirmed that the person was deceased.

The survivor and the deceased person were then transferred to the rescue vessel, together with the doctor, and transported to Øksfjord, where an ambulance was waiting.

The wrecked vessel remained on the foreshore with the bow raised and fairly close to land. It had been planned to secure the vessel the following day, but the recreational boat sank the day after the accident and had not been found at the time of publication of this report.

1.3 Weather and sea conditions

1.3.1 WEATHER FORECAST

The weather forecast issued by the Norwegian Meteorological Institute (MET) at midnight on 18 May 2025 for Bergsfjorden, east of Silda, for 13:00 on 19 May was as follows:

- Mean wind speed approximately 11 m/s
- Wind gusts approximately 16 m/s
- Wind from the west (approx. 260 degrees)

The rental company had checked the weather forecast via BarentsWatch and stated that winds of 7–8 m/s from the west had been forecast, with gusts of up to 11–12 m/s, and a wave height of 0.5 metres in Bergsfjorden.

According to MET, a gale warning was also issued on Monday morning, 19 May, at 09:46 for the stretch Torsvåg–Loppa:

> *From Monday morning, south-westerly to westerly near gale force 15 m/s in exposed areas, occasionally gale force 20 m/s. The wind will subside on Monday afternoon.*

[2] *Rescue vessel used in man overboard (MOB) situations.*

1.3.2 WEATHER OBSERVATIONS

The NSIA obtained information from the Norwegian Meteorological Institute regarding wind speeds observed in the area at the time of the accident. Hasvik Airport and Øksfjord – Deallja (560 m a.s.l.) are the nearest weather stations to the accident site (see Figure 4).

Figure 4: Weather stations in the area around Bergsfjorden. Map: MET / Kystinfo / NSIA

Observed wind conditions around the time of the accident are shown in Table 1.

Table 1: Observed wind at the Hasvik Airport and Øksfjord – Deallja weather stations on 19 May around the time of the accident. Source: MET

Name of station	Time (local time) [3]	Peak gusts (m/s)	Highest mean wind speed (m/s)	Wind direction
Hasvik Airport	11–12	16.9	11.2	268
	12–13	15.8	11.5	182
	13–14	14.9	11.6	272
Øksfjord – Deallja (560 m a.s.l.)	11–12	9.0	6.7	182
	12–13	12.2	7.2	202
	13–14	10.5	8.0	193

Wind speeds measured at the Fakken and Hasvik – Sluskfjellet weather stations on Monday 19 May between 12:00 and 13:00 and between 13:00 and 14:00 are shown in Table 2.

[3] *Indicates the highest value between the specified times.*

Table 2: Observed wind at the Hasvik Airport and Fakken and Hasvik-Sluskfjellet weather stations on 19 May around the time of the accident. Source: MET

Name of station	Time (local time)	Peak gusts (m/s)	Highest mean wind speed (m/s)
Fakken	12–13	23.5	17.3 (gale)
	13–14	21.8	15.5 (near gale)
Hasvik-Sluskfjellet (438 m.a.s.l.)	12–13	26.4	21.3 (strong gale)
	13–14	22.3	19.3 (gale)

Between 12:00 and 13:00, strong gusts were observed in the area, reaching 24–26 m/s at the Fakken and Hasvik – Sluskfjellet weather stations. Wind observations from these stations do not necessarily reflect the wind conditions on the lee side of Silda, but they may indicate the wind potential in the area under the prevailing weather conditions that day. A satellite image taken by the Norwegian Meteorological Institute at 12:55 showed clear mountain waves with indications of downslope winds on the lee side of Silda.

The rescue vessel that attended the accident site measured gusts of up to 32 m/s on the day of the accident.

1.3.3 MOUNTAIN WAVES

According to the Great Norwegian Encyclopedia, mountain waves[4] are a specific type of atmospheric gravity wave that occurs when an air flow passes over a mountain or mountain range. Mountain waves are often the source of strong and sometimes unexpected downslope winds along the ground or sea surface. They can produce chaotic wind patterns and significant turbulence (see Figure 5).

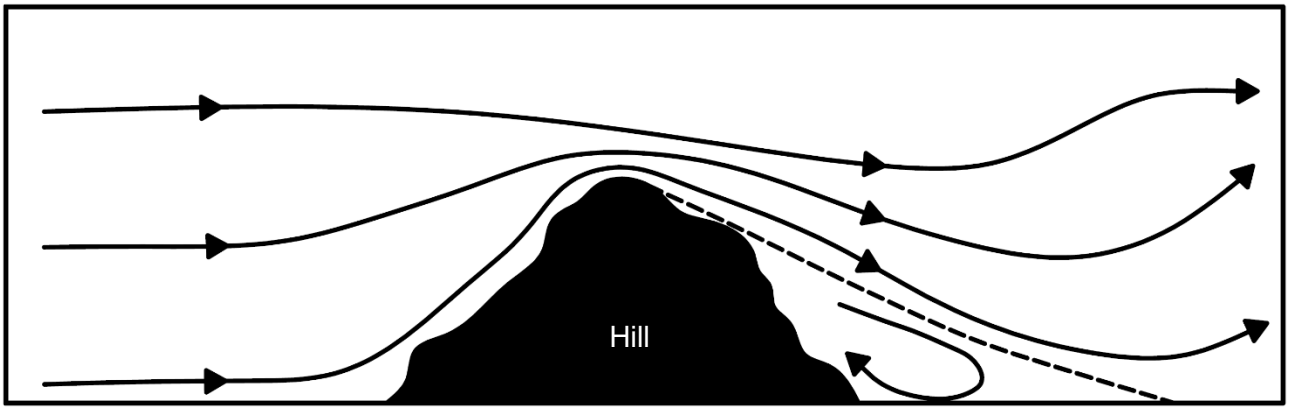

Figure 5: Cavitation and chaotic wind patterns on the lee side. Source: Stull, 1988 – An introduction to boundary layer meteorology. Illustrated by NSIA

High-resolution models from the MET showed that the area on the lee side of the island experienced chaotic wind conditions during the period when the accident occurred. According to MET, this may have resulted in winds from several different directions, as well as gusts descending from higher altitudes. Mini-tornadoes were also observed. The formation mechanism of such mini-tornadoes is not known in detail, but they have been reported in various contexts in connection with mountain waves and downslope winds on the lee side of mountains, both in the United States and in Norway. Local topography and changes in horizontal wind with altitude are likely to play an important role in the formation of such vortices. An unstable temperature stratification in the lower atmosphere may also intensify such vortices.

[4] *https://snl.no/fjellbølger*

Wind conditions at the time of the accident could also be observed in video footage taken from the rescue vessel during the rescue operation, which showed wind, waves and gusts coming from the south and south-east.

According to the Norwegian Meteorological Institute, such local conditions are not captured in weather forecasts, partly because the terrain resolution in the models is not sufficiently detailed.

1.3.4 SEA TEMPERATURE

According to the owner of the rental company, who went out in his own vessel to search for the casualties, the sea temperature measured 3.9°C, based on readings from the vessel's fishfinder.

1.4 Description of the waters

According to the survivor, the accident occurred approximately 20 metres from shore east of Silda. Silda is approximately 14 km long (north–south) and 4 km wide (east–west), with a height of around 600 metres.

The Norwegian Pilot Guide[5] describes the waters of Sandlandsfjorden, Bergsfjorden and Langfjorden as follows:

> *'Silda is high, with sharp, jagged mountains that fall steeply towards the sea on the northern and western sides. On the western side of Sandlandsfjorden, there are flat beaches with rounded hills in the hinterland. There is some settlement along the shorelines. Along Bergsfjorden, the terrain is steep on both sides. Vegetation is sparse, with only scattered birch scrub. Langfjorden has high, steep and rugged coasts. The current is generally strongest in Sandlandsfjorden and can be particularly powerful between Marholmen and the mainland. During north-easterly winds, a heavy sea sets into Bergsfjorden, while conditions in Sandlandsfjorden may remain quite calm.'*

1.5 Vessel

The vessel was a Wildeboat 650XW recreational boat, built in 2016, with a length of 6.6 m and a beam of 2.7 m. The vessel was constructed of aluminium and equipped with a 150 hp engine. The weight was approximately 1.3 tonnes excluding the engine, and it had a payload capacity of 996 kg.

The vessel was CE-marked under design category C, intended for inshore operations. Category C signifies that the vessel is designed to operate in mean wind speeds up to and including 13.8 m/s and significant wave heights up to 2 metres. The boat was certified for a maximum of 10 persons.

The Wildeboat 650XW is produced by De Wilde Slipp og Mek. AS in Bergsfjorden, Loppa Municipality, and has been specially developed for tourist fishing and/or operations in the aquaculture industry. The manufacturer markets the vessel as a robust craft capable of withstanding rough handling.

The vessel was self-draining, and a wheelhouse was installed at the centre of the boat measuring 1.9 m high, 1.9 m long and 1.5 m wide (see Figure 6)

[5] *The Norwegian Pilot Guide, Volume 6.*

Figure 6: Wildeboat 650XW. Photo: Manufacturer

1.6 Medical and health information

1.6.1 POST-MORTEM EXAMINATION

The deceased was found without a lifejacket and was pronounced dead by rescue personnel shortly after being located.

A post-mortem examination was conducted on the deceased person. The final report concluded that the cause of death was drowning.

1.6.2 SURVIVABILITY

Water conducts heat more rapidly than air, so cooling occurs more quickly in water than on land. Survival time in water depends on several factors, including water temperature, buoyancy aids, immersion suits, body composition, clothing, age, movement and other variables.[6]. Regardless of these factors and their time dependency, the progression of cooling in water can generally be divided into four phases.

1. Cold water shock

The body reacts to cold and sudden temperature change in this short initial phase. Among other things, the reaction may include constriction of major blood vessels. The body also releases significant amounts of stress hormones (adrenaline and cortisol) as part of a fight-or-flight response. These important response mechanisms can place strain on the heart, which must work harder to maintain blood circulation. Older individuals and those at increased risk of cardiovascular

[6] *Tipton et al. Survival time and search time in water: Past present and future (Journal of Thermal Biology, 2022).*

disease are particularly vulnerable to cardiac arrest or myocardial infarction during this phase. In addition, the gasp reflex may lead to drowning due to seawater or anything else entering the airways. This phase lasts only minutes.

The other three phases, which involve cold water paralysis (2), hypothermia (3) and rescue collapse (4), are not considered relevant to this accident as the deceased encountered difficulties after only a very short time in the sea. Figure 7 shows an overview of the phases of cooling.

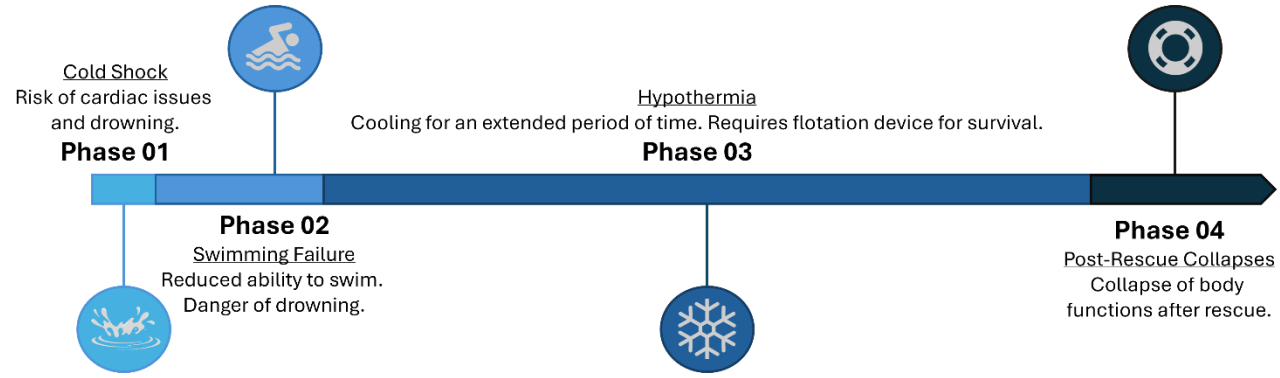

Figure 7: Four phases of cooling during immersion. Illustration: NSIA

1.7 The rental company

1.7.1 GENERAL INFORMATION

Sandland Brygge is located at Sandland in Loppa Municipality and offers boat rental and accommodation. The rental company had several boats available for hire, including the Wildeboat 650XW and 750XW models. Their customers primarily consisted of foreign tourist anglers.

1.7.2 EQUIPMENT AND PROCEDURES RELATED TO VESSEL RENTAL

The rental company stated that before the rental vessels could be used, the person designated as skipper on board was required to sign a contract. This included, among other things, requirements relating to the renter's responsibilities and use of the vessel. There were no specific competence requirements for the skipper beyond holding a boating licence for those born 1 January 1980 or later.

Prior to use, the owner of the rental company conducted a briefing with the skipper on board. This included a review of equipment and procedures such as the use of bilge pumps, anchoring in the event of engine failure, and various safety equipment such as throw lines and fire-fighting equipment. Start and stop procedures, use of VHF, and emergency procedures were also covered.

The owner of the rental company stated that it was routine to review the weather forecast daily. It was also specified in the contract that the renter should always check the weather forecast, and both the renter and the rental company did so on the day of the accident. The owner of the rental company stated that he on the day of the accident had instructed that the vessels had to remain inside Bergsfjorden, on the eastern side of Silda, due to the westerly winds.

1.7.3 ALERTING SYSTEMS AND SAFETY EQUIPMENT

AIS was installed on board the vessels. The purpose was to allow the rental company to monitor the vessels' positions. For the vessel Loppa, there had been issues with coverage, and it had not been possible to track the vessel via NAIS[7]. This was also the case on the day of the accident.

The rental company had informed the tourists that a VHF DSC[8] system with a distress button was installed on board and could be used in an emergency. It was also stated that information was available on board regarding whom to contact in an emergency, including contact details for the rental company. The contract also included information on emergency numbers.

The rental company stated that renters were instructed that lifejackets must be worn, and this was specified as a requirement in the contract. The tourist anglers had been informed that inflatable lifejackets were available on board, contained in a storage box. The owner of the rental company further stated that most tourist anglers used their own flotation suits. A few used oilskins. Most brought this equipment themselves, although some hired it.

1.8 Regulatory framework

The regulations of relevance to this incident are described in the sections below.

1.8.1 THE ACT RELATING TO THE CONTROL OF PRODUCTS AND CONSUMER SERVICES (PRODUCT CONTROL ACT)

Act of 11 June 1976 No 79 on the control of products and consumer services (the Product Control Act) aims to prevent products and services from causing damage to health. The Act also applies to consumer services such as leisure boat rental. Under section 3, enterprise offering consumer services shall exercise due care and take reasonable steps to prevent the consumer service from causing damage to health, including providing necessary safety information. Under section 6b, there is a duty to notify the authorities upon knowledge of dangerous products, etc.

1.8.2 REGULATIONS RELATING TO SYSTEMATIC HEALTH, ENVIRONMENT AND SAFETY ACTIVITIES IN ENTERPRISES (INTERNAL CONTROL REGULATIONS)

Regulations of 6 December 1996 No 1127 on systematic health, environmental and safety activities in enterprises (the Internal Control Regulations) require enterprises to establish and document internal controls to ensure compliance with HSE regulations. According to section 5, an enterprise must, inter alia, establish goals, organisation and responsibilities, identify hazards and assess risk, implement routines (including for emergency preparedness and deviations), provide the necessary training and information, and document the work.

1.8.3 REGULATIONS ON THE PRODUCTION AND PLACING ON THE MARKET OF RECREATIONAL CRAFT AND PERSONAL WATERCRAFT ETC.

Regulations of 15 January 2016 No 35 on the Production and Placing on the Market of Recreational Craft etc. sets requirements for the design and manufacture of recreational craft and implement Norway's obligation to comply with the Recreational Craft Directive (Directive 2013/53/EU). Section 4 of the regulations describes essential requirements, including that products shall not endanger the health and safety of persons.

---

[7] National Automatic Identification System (NAIS) is an online service developed by the Norwegian Coastal Administration to monitor maritime traffic in Norwegian waters in real time.
[8] Digital Selective Calling (DSC). The system that makes it possible to send automated emergency messages.

The first paragraph (b) states that the essential requirements set out in Annex 1 must be met, and the second paragraph specifies that requirements are presumed to be in compliance if products are in conformity with the national standards implementing harmonised standards. Recreational craft must bear a CE marking (section 7), and the manufacturer must ensure products are designed and manufactured in accordance with the requirements of the regulations (section 9). Section 17 of the regulations refers to design and production where the manufacturer can choose which modules to use according to the various design categories, (see Table 3).

Table 3: Alternative modules depending on the vessel's design category. Source: Regulations on the Production and Placing on the Market of Recreational Craft and Personal Watercraft etc.

<table>
<tr><th rowspan="2">Category of construction</th><th colspan="3">Selection of Module</th></tr>
<tr><th colspan="2">Boat length equal to or above 2.5 m up to 12 m</th><th>Boat length equal to or above 12 m up to 24 m</th></tr>
<tr><td>A</td><td colspan="2" rowspan="2">A1 or
B + C or B + D or
B + E or B + F or
G or H</td><td rowspan="4">B + C or
B + D or
B + E or
B + F or
G or H</td></tr>
<tr><td>B</td></tr>
<tr><td rowspan="2">C</td><td>When the boat meets harmonized standards for stability and buoyancy (appendix 1, part A, no. 3.2 and 3.3)</td><td>A or A1 or
B + C or B + D
or B + E or
B + F or G or H</td></tr>
<tr><td>When the boat meets harmonized standards for stability and buoyancy (appendix 1, part A, no. 3.2 and 3.3)</td><td>A1 or B + C or
B + D or B + E
or B + F or G or
H</td></tr>
<tr><td>D</td><td colspan="3">A or A1 or B + C or B + D or B + E or B + F or G or H</td></tr>
</table>

If, for example, module A is chosen for a design category C vessel with a hull length between 2.5 and 12 metres, there is no requirement for third-party inspection, and production is only subject to the manufacturer's internal control. The accident vessel was designed in accordance with Module A and design category C, and was not subject to third-party inspection.

Under Annex I, Category C recreational craft and personal watercraft are designed for wind force up to and including Beaufort 6 and significant wave heights up to 2 metres (see Table 4).

Table 4: Design categories for recreational craft and personal watercraft. Source: Regulations on the Production and Placing on the Market of Recreational Craft and Personal Watercraft etc.

Category of construction	*Windforce (Beaufort scale)*	*Significant wave height (H 1/3, meter)*
A	above 8	above 4
B	up to 8	up to 4
C	up to 6	up to 2
D	up to 4	up to 0,3

1.8.4 HARMONISED STANDARDS

Pursuant to Section 4, second paragraph, of the Regulations Relating to the Production and Placing on the Market of Recreational Craft and Personal Watercraft, the essential requirements and conformity of the regulations are presumed to be in compliance if they are in conformity with the national standards implementing harmonised standards.

The assessment of wind-induced heeling follows ISO 12217-1, section 6.4. The requirement applies to vessels with a relatively large windage, where the windage area exceeds a specified level in relation to the vessel's length and beam. For vessels in design categories C and D, the assessment must be conducted both for the fully loaded and minimum operating conditions. The assessment takes into account vessel stability, including the effects of free surface liquids in tanks.

The wind effect is calculated using standardised methods set out in ISO 12217-1, Section 6.3.2, using defined wind speeds depending on the design category. The actual windage area is used in the calculation.

Pursuant to ISO 12217-1 section 6.2, an offset-load test shall be carried out either using the ‘simplified method’ or ‘full method’. The simplified method consists of performing stability calculations of the vessel, whereas the full method is a practical physical test.

The 'simplified method' requires the establishment of two loading conditions. In the first, passengers shall be positioned at 75% of the working deck length, and in the second, at 25%. In both cases, all passengers shall be modelled as point loads located 200 mm inboard from the transverse outer edge of the working deck. The full method requires passengers to be positioned so that their centres of gravity are 500 mm apart and 200 mm inboard of the outer edge of the working deck. Furthermore, several loading conditions shall be carried out to identify the positioning that results in the greatest angle of heel or the minimum heeling freeboard. The standard does not permit a combination of these methods; one of them must be followed in its entirety to comply with regulatory requirements.

ISO 11812:2018 sets design requirements and describes calculation models for the drainage of recesses. Among other things, it specifies requirements for deck height, the design and placement of drainage outlets, the degree of watertightness, the location of filling points, and the minimum drainage time for the recess in question. According to Clause 7.1.3.2, the drainage system must be capable of draining 90% of the volume of the recess at a 10-degree angle of heel. Additionally, drainage must occur within a specified time period given in a table, depending on the volume of the recess. The dimensioning of drainage openings is therefore calculated based on the volume of the recess.

1.9 Tests and research

1.9.1 CE MARKING

The vessel was CE-marked and was therefore required to comply with the relevant ISO standards, including the requirements of the stability standard ISO 12217-1:2017. The NSIA requested

information from the manufacturer to document that the vessel was in compliance with the standard. The manufacturer had engaged a consultant to perform the stability calculations and prepare the technical documentation.

The NSIA engaged its own consultant to review the documentation in order to verify that the vessel complied with the requirements of the ISO standards. The review identified that several requirements and tests under the ISO standards were not sufficiently documented in accordance with provisions of the standards.

The following was among the issues identified during the review of the technical documentation:

- The stability calculations were conducted using an offset-load test in accordance with the ISO standard. The test was performed by combining two methods ('simplified method' and 'full method'); this is not permitted by the standard and resulted in a more favourable result. Consequently, neither method was applied in its entirety as required by the standard.
- The table used for sizing the drainage system was read incorrectly, and the drainage system is therefore undersized. This means the drainage system is unable to drain the water from the recess within the minimum required time when full, although it may still be effective for smaller volumes of water.

1.9.2 STABILITY

1.9.2.1 General information about stability

Stability is traditionally expressed using GZ curves, and stability requirements are normally linked to characteristics of a craft's GZ curves. GZ is the horizontal distance between a craft's centre of gravity (G) and its centre of buoyancy (B) at a given angle of heel and makes up a righting arm, see Figure 8. The righting arm multiplied by the weight of the craft is the righting moment.

A GZ curve shows a craft's ability to withstand heeling at different angles of heel. The area under the GZ curve expresses the energy required to heel the craft to a certain angle of heel. This area represents a measure of the vessel's ability to withstand dynamic loads, such as wind and waves.

Figure 8 shows that the illustrated craft's capacity to resist heeling is greatest at approx. 30° (highest GZ value), and at approx. 50° the craft is no longer capable of resisting heeling (GZ = 0) – in other words, it will capsize at this angle of heel.

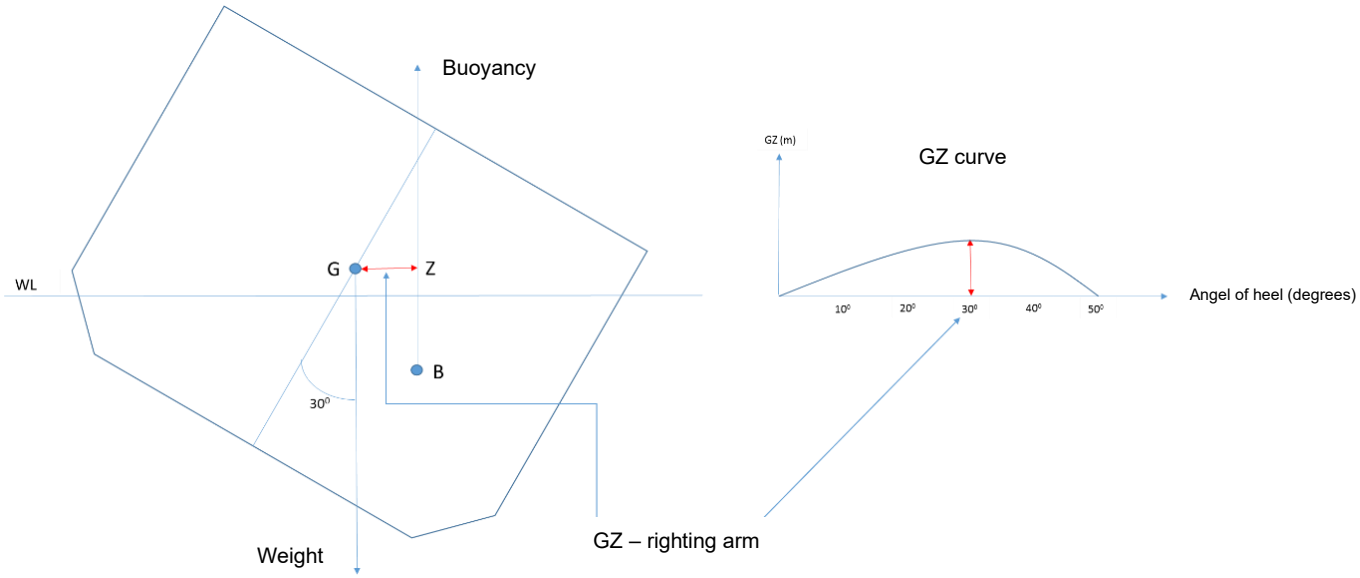

Figure 8: Explanation of the GZ curve. Illustration: NSIA

1.9.2.2 Vessel stability at the time of the accident

Manufacturers of recreational craft of between 2.5 and 12 metres in design category C are not required to prepare complete stability calculations with GZ curves. The NSIA has nevertheless chosen to calculate the vessel's stability to gain an understanding of the conditions required for the vessel to capsize. Whether filling points and the hatches fulfil the requirements for weathertightness has not been assessed. The wheelhouse has not been included in buoyancy calculations, as it could not be considered weathertight.

The centre of gravity and lightship weight were sourced from the vessel's documentation. No inclining test was carried out to verify the centre of gravity.

Calculations were performed with two persons, including luggage and fishing gear, positioned in the wheelhouse, estimated at a total weight of 300 kg. There was no catch on board, as they had not yet commenced fishing. This loading condition corresponds to the conditions on the day of the accident. The stability in calm water, without wind and waves, was found to be sufficient to prevent capsizing up to an angle of heel of 53° (see Figure 9).

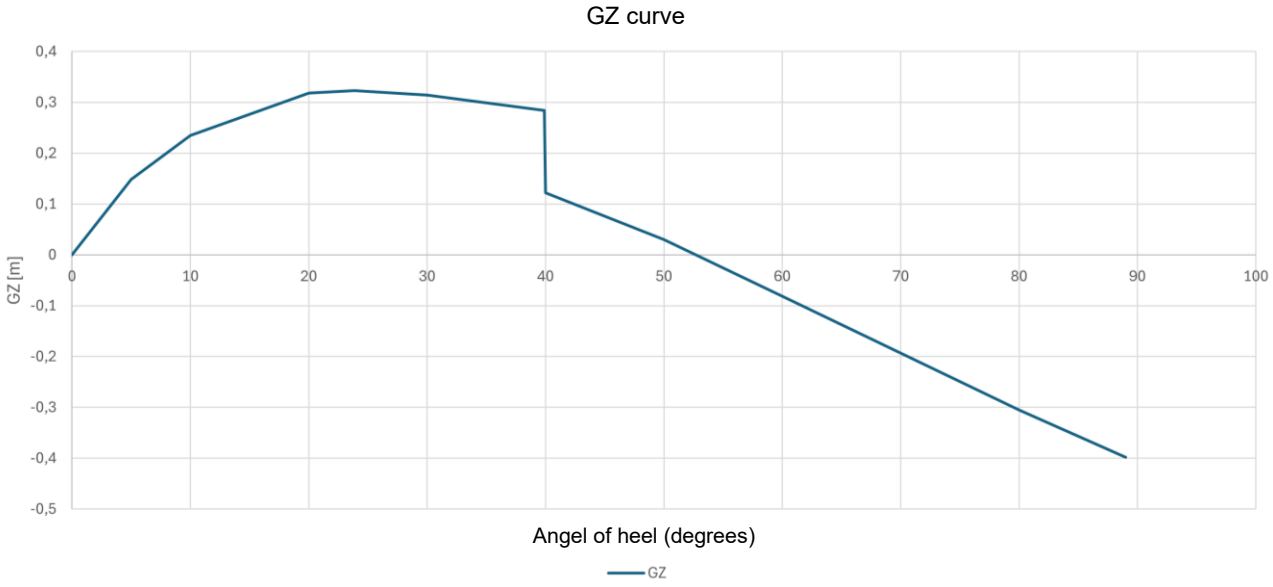

Figure 9: Calculated GZ curve for the vessel at the time of the accident. Source: NSIA

The GZ curve in Figure 9 shows that the vessel has good stability until water comes over the transom and onto the deck. The vessel then loses the buoyancy from the volume defined by the deck, the sides of the boat, and the transom. This is shown as a reduction in the GZ curve at approximately 40°.

The NSIA has been informed that there were strong gusts in the area exceeding 30 m/s on the day of the accident. The NSIA has investigated the wind gust speeds required to capsize the vessel. The lateral area of the vessel exposed to the wind was incorporated into the calculation model as the projected silhouette above the waterline. In Figure 10, the GZ curve is the same as in Figure 9, but the heeling moment from the wind – occurring at a wind speed of 30 m/s – has been added and is shown as an orange curve.

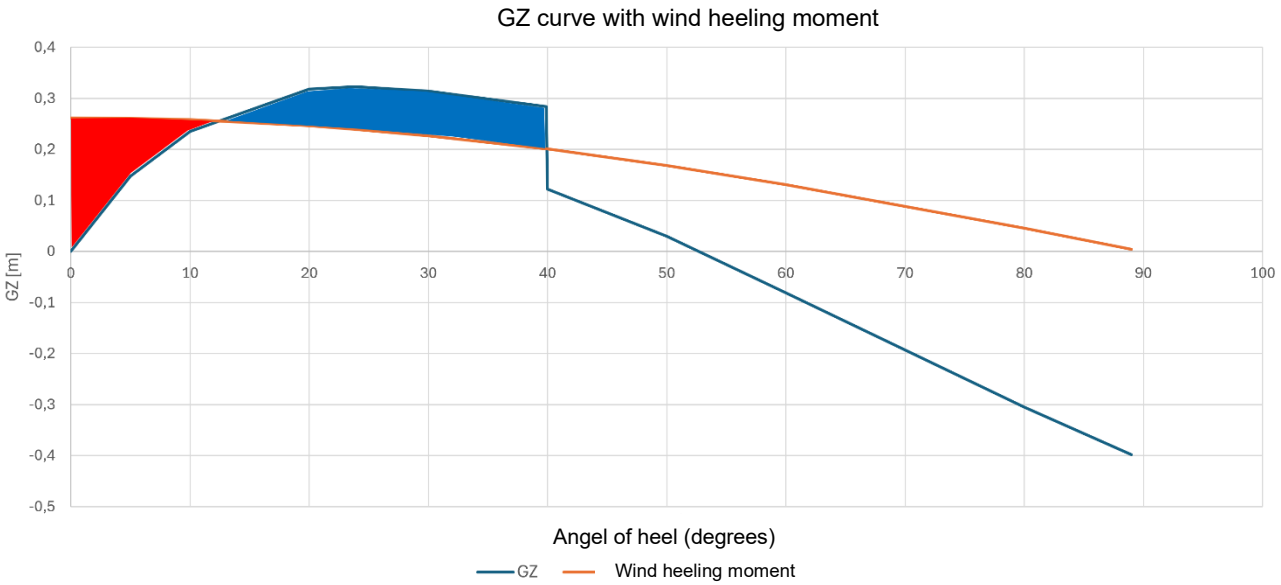

Figure 10: The calculated GZ curve for the vessel is shown as a blue line, and the heeling moment curve from 30 m/s wind gusts shown as an orange line. Source: NSIA

The area in red represents the heeling energy caused by the gust. This will cause the vessel to begin to heel. The heeling energy must be absorbed by a corresponding amount of righting energy before the heeling ceases. Heeling will therefore continue until dynamic equilibrium is reached. This is indicated by the red area being equal in size to the blue area, where the blue area represents the righting energy. Thereafter, the vessel would have righted itself to its original equilibrium if the wind ceased, or to approximately 13° list if the wind remained constant at 30 m/s. If the red area becomes larger than the blue area, the vessel will not achieve dynamic equilibrium, and the vessel will capsize. As Figure 10 shows, the red and blue areas are approximately equal, and theoretically, the vessel would just manage to right itself at approximately 40°. If the vessel was subjected to wind gusts exceeding 30 m/s, it would have capsized, as the blue area would then be smaller than the red area.

1.9.2.3 The windage effect of the wheelhouse

A large portion of the vessel's windage was attributed to the wheelhouse. The NSIA has examined the effect the wheelhouse had on stability with respect to wind. If the wheelhouse is excluded from the calculations as part of the windage, the windage area would be reduced from approximately 8.9 m^2 to 6.2 m^2. Figure 11 shows the same GZ curve as before, but the wind heeling moment shown by the orange curve has been reduced as a result of the decreased windage.

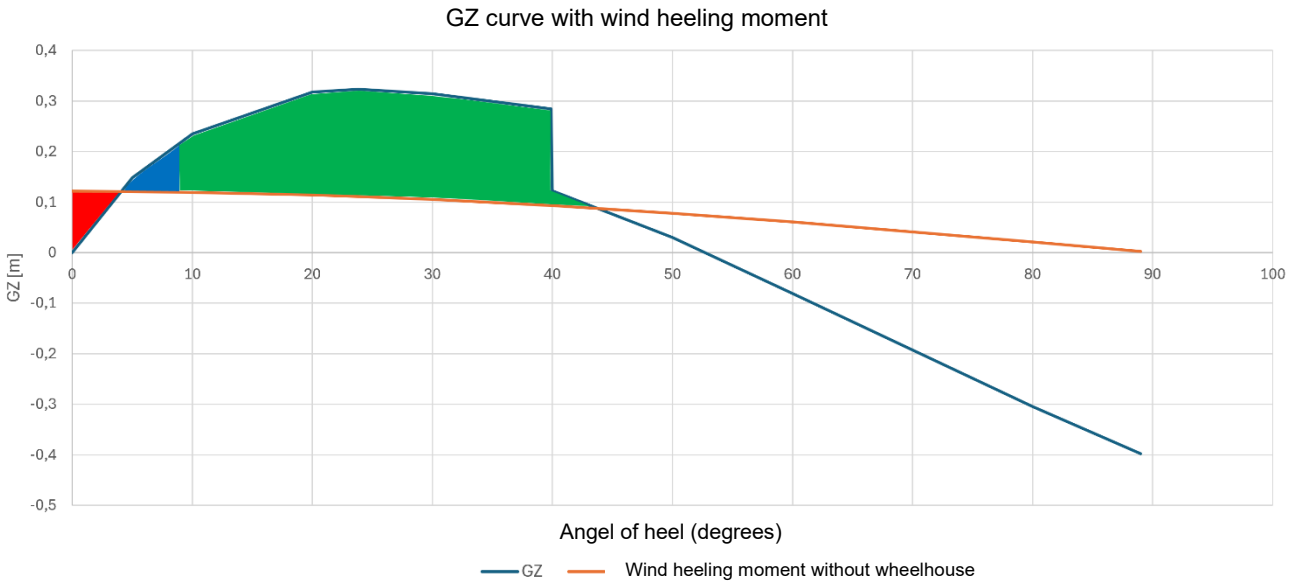

Figure 11: The calculated GZ curve for the vessel is shown as a blue line, and the heeling moment curve from 30 m/s wind gusts, excluding the wheelhouse as windage, shown as an orange line. Source: NSIA

As Figure 11 shows, a wind gust of 30 m/s would have heeled the vessel to approximately 9°. The red and blue areas are then of equal size. Thereafter, the vessel would have righted itself to its original equilibrium if the wind ceased, or to approximately 4° list if the wind remained constant at 30 m/s. The green area indicates the vessel's residual stability when subjected to the wind gust. This demonstrates that the windage of the wheelhouse contributed significantly to the heeling moment, thereby resulting in a reduced capacity to counteract dynamic loads, such as wind and waves, compared to the results obtained without the wheelhouse.

1.9.2.4 Summary

Based on calculations performed by the NSIA, as well as witness observations and measurements of wind gusts in the area, it is likely that the gusts on the day of the accident were powerful enough to cause the vessel to capsize. Although the calculations only accounted for the loads from wind gusts, the influence of waves may also have contributed to the capsize. The calculations also demonstrated that the windage of the wheelhouse had a significant impact on the vessel's heeling moment during the wind gusts on the day of the accident.

1.10 Supervision of recreational craft and rental enterprises

1.10.1 THE NORWEGIAN MARITIME AUTHORITY (NMA)

The NMA is responsible for regulations governing the design, production and the bringing to market of recreational craft, including CE marking and technical documentation pursuant to the Recreational Craft Act and the Regulations on the Production and Placing on the Market of Recreational Craft and Personal Watercraft. Its role is limited to the vessel as a product and does not extend to enterprises that rent out recreational craft.

Supervision covers manufacturers, importers and distributors, but not users or rental enterprises. The NMA may conduct inspections to ensure that recreational craft that are placed on the market or made available on the market fulfil the requirements regarding the Declaration of Conformity, design, stability and safety equipment. Once a vessel has been placed on the market, it is normally the Directorate for Civil Protection and Emergency Preparedness (DSB) that holds further supervisory authority if the vessel is used or leased for consumer purposes.

The NMA lacks the legal mandate to conduct on-site inspections of rental companies or private rental enterprises. The NMA is also unable to mandate operational measures; however, it may provide expert opinions on technical matters or offer professional assistance if requested by the DSB or the police. In practice, this means that the NMA only supervises the product's legality and conformity and not how or by whom the vessel is made available.

1.10.2 DIRECTORATE FOR CIVIL PROTECTION AND EMERGENCY PLANNING (DSB)

1.10.2.1 Introduction

The DSB is the technical and supervisory authority for products and consumer services. The consumer service of boat rentals and its associated products are regulated by the Act relating to the control of products and consumer services (the Product Control Act) and the Regulations relating to systematic health, environmental and safety activities in enterprises (the Internal Control Regulations). Life jackets used in service are regulated by the regulation relating to personal protective equipment. Vessels used in such services are regulated by the Norwegian Maritime Authority's regulatory framework.

Supervision of products and consumer services are conducted pursuant to sections 5 and 8 of the Product Control Act. The purpose of the Product Control Act is to prevent a consumer service or product from causing damage to health, cf. section 1.

The term 'consumer services' means services offered to natural persons for purposes mainly outside the sphere of commercial and professional activities, cf. section 2 a fifth paragraph of the Product Control Act. Any person that owns or manages an enterprise offering consumer services, or that carries out work in such an enterprise, shall exercise due care and take reasonable steps to prevent the consumer service from causing damage to health, cf. section 3 of the Product Control Act.

Anyone who owns or manages an enterprise that offers consumer services and knows or should know that a product they have made available to users presents an unacceptable risk shall immediately notify the supervisory authorities of this, cf. section 6 b of the Product Control Act.

Supervision is one of the Directorate's most important preventive measures and is intended to ensure that legislation and key guidelines are complied with, and that the entities subject to supervision work systematically with safety, vulnerability and risk. Supervision of consumer services will, among other things, assess whether the enterprise works systematically with HSE and whether internal control contributes to ensuring the safety of the users of the company's services.

The DSB has the legal authority under the Product Control Act to implement sanctions and measures if products or consumer services pose a risk of damage to health. This may include, among other things, banning the product from being placed on the market, coercive fines, prohibiting the offering of a consumer service, as well as criminal liability in the event of wilful or negligent violations of the Product Control Act.

1.10.2.2 Supervision of rental enterprises

In 2011 and 2025 DSB conducted inspections of enterprises engaged in boat rental.

In 2011, DSB conducted inspections of nine enterprises. According to the report on 'The consumer service of boat rentals[9]', the findings from the inspections included, among others:

[9] *DSB: Consumer service boat rental, 2012*

A total of 23 non-conformities were identified across the 9 boat rental providers. Most of the non-conformities were linked to little or no knowledge of current regulations, as well as the requirement to report dangerous products and consumer services. The enterprises were unable to present written procedures or other documentation for key elements of their systematic safety work (internal control) related to the service.

Four inspections of rental enterprises were conducted in autumn 2025. The results of these inspections revealed non-conformities within various areas of all enterprises. The non-conformities included deficiencies in procedures for identifying dangers and assessing overall risk. In addition, several enterprises had deficient systematic monitoring and review of their internal controls to ensure they function effectively with regards to the safety of the consumer service.

1.11 Previous accidents

1.11.1 REPORT ON MARINE ACCIDENT INVOLVING A RENTAL BOAT NORTH OF VÅGSØY IN KINN MUNICIPALITY

In report 2026/03 concerning a capsizing accident involving a rental boat, the Norwegian Safety Investigation Authority issued the following safety recommendations, which are also relevant to this accident:

Safety recommendation MARINE No 2026/03T

On Sunday 4 May 2025, three tourist anglers were fishing in a rented Dolmøy 230 Fisker 2015 model in Sildegapet, north of Måløy, when the vessel capsized and all three perished.

In 2021, the NMA and the DSB conducted a joint review of regulatory requirements and the exercise of authority in relation to the rental of recreational craft. The review concluded that the current internal control regime is insufficient to ensure safe operations in an industry where users often lack experience with boats and the sea. The review further recommended the establishment of a clear supervisory and inspection structure, with the NMA designated as the competent authority for rental vessels.

The NSIA considers that responsibility for supervision and enforcement should be assigned to the NMA, which already possesses the necessary maritime and technical expertise. Such an allocation of responsibility would ensure better coordination between regulatory frameworks for recreational craft used in commercial enterprises, whether operated with or without a hired skipper on board.

The Norwegian Safety Investigation Authority recommends that the Ministry of Trade, Industry and Fisheries establishes a regulatory framework for rental enterprises operating recreational craft and grants the Norwegian Maritime Authority authority to conduct supervision pursuant to this framework.

Safety recommendation MARINE No 2026/04T

On Sunday 4 May 2025, three tourist anglers were fishing in a rented Dolmøy 230 Fisker 2015 model in Sildegapet, north of Måløy, when the vessel capsized and all three perished.

The anglers were unable to send a distress signal, and approximately eight hours elapsed from the time the vessel likely capsized until the first angler was found. With no means of alerting on board other than mobile phones, they were unable to notify others that they were in distress.

In this accident, for example, an emergency position-indicating radio beacon capable of alerting the emergency services directly would rapidly have provided information about the position of the persons in distress. This would have constituted a more reliable means of alerting than a mobile telephone that had fallen into the sea. If the vessel had been tracked, there would also have been a greater likelihood that the rental company could have detected that the vessel was in trouble, and would also have had information about its location. The current regulations governing rental enterprises is generic and not specifically adapted to the rental of vessels. The NSIA considers that there is a lack of regulations specifically directed at rental enterprises and the safety measures required to conduct safe rental operations. This is particularly important given that those who rent boats are not always familiar with the vessel, the waters, the weather conditions or the Norwegian emergency alerting system. The regulations should include requirements for both tracking and alerting systems. Two rental-related accidents investigated by NSIA in 2025 have demonstrated that these are critical safety measures for saving lives.

The NSIA recommends that the Ministry of Trade, Industry and Fisheries assigns the Norwegian Maritime Authority the task of developing a regulatory framework that includes requirements for tracking and alerting systems for rental enterprises and rental vessels.

1.11.2 PREVIOUS ACCIDENTS INVOLVING RENTAL VESSELS

The NSIA has requested information from the NMA regarding the number of fatal accidents involving vessels leased from a rental enterprises. The NSIA has received an overview for the years 2017–2025. Accidents involving rowing boats, kayaks and canoes are not included in the statistics below.

The information showed that there have been eleven accidents involving tourist anglers who had leased a vessel from a rental enterprises. These accidents resulted in a total of fifteen fatalities. On average, this corresponds to slightly more than one accident and just under two fatalities per year. The number of accidents involving tourist anglers and the number of fatalities among tourist anglers per year are shown in Figure 12.

Figure 12: Accidents involving tourist anglers per year. Source: Norwegian Maritime Authority. Graph: NSIA

The information showed that capsizing accidents dominate the statistics (see Figure 13). The three accidents that were categorised as occupational accidents were man-overboard incidents.

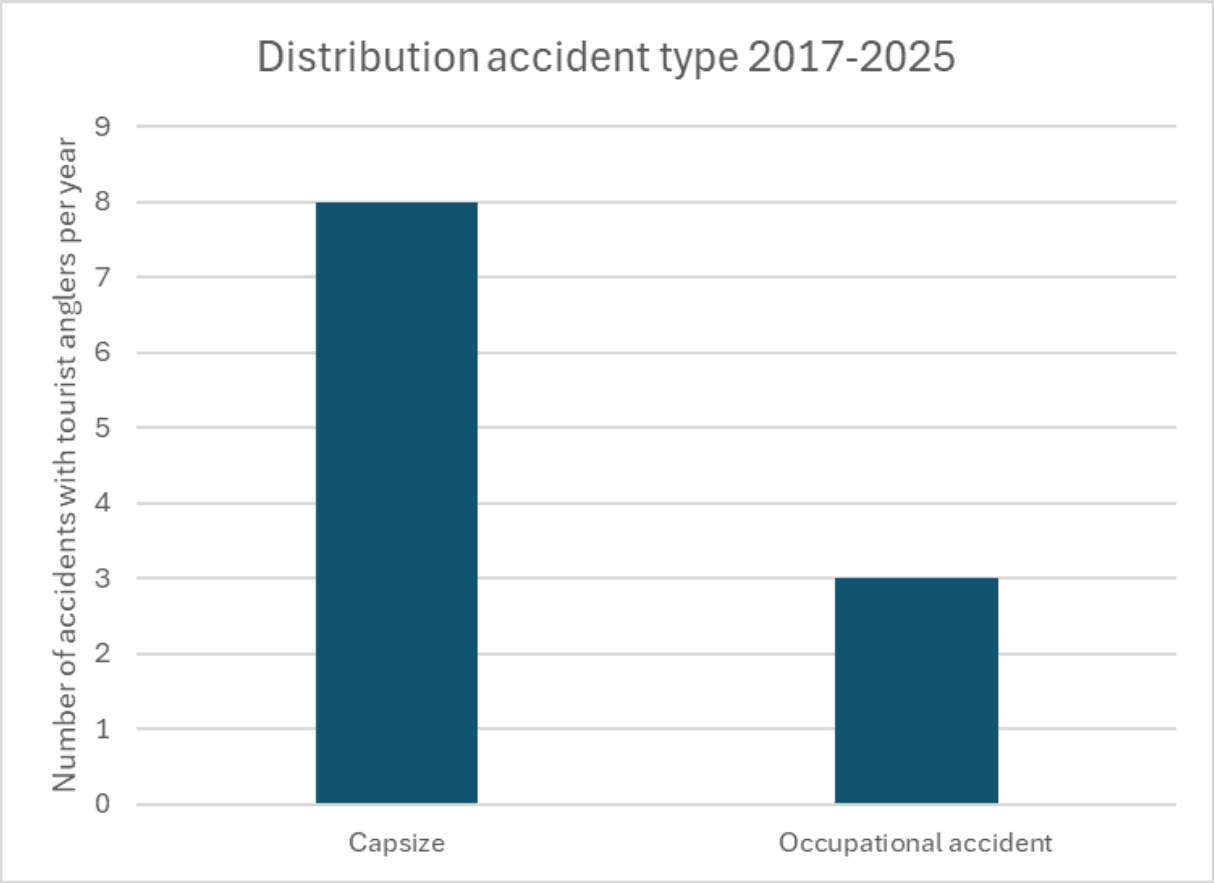

Figure 13: Overview of accidents by type. Source: Norwegian Maritime Authority. Graph: NSIA

The information also showed that all the tourist anglers who perished during this period were foreign nationals (see Figure 14).

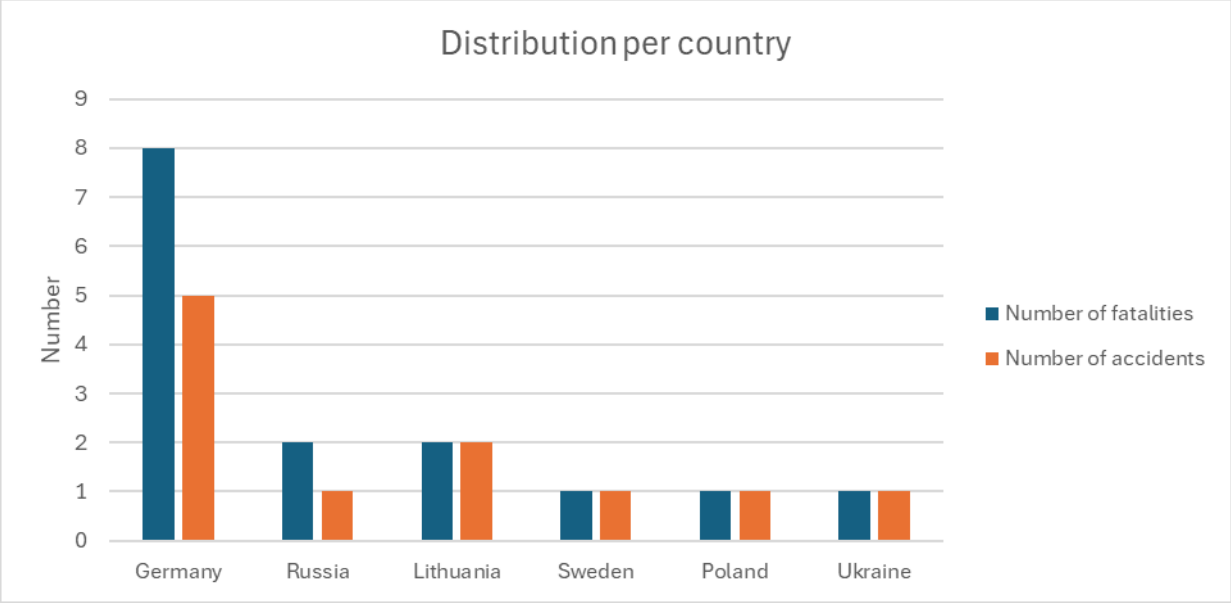

Figure 14: Number of tourist angler fatalities by citizenship in the period 2017–2025. Source: Norwegian Maritime Authority. Graph: NSIA

1.12 Additional information

1.12.1 SAFETY IN THE LEASING OF RECREATIONAL CRAFT IN NORWAY

In a letter of assignment dated 7 October 2019, the Ministry of Trade, Industry and Fisheries (NFD) tasked the NMA with assessing whether the rental of recreational craft is regulated in a manner that ensures the safety of renters is adequately safeguarded. The NMA was to assess whether there is a need to impose additional requirements on rental enterprises, skippers, vessels and equipment. Based on this, the NMA prepared the 'Report on Safety in the Leasing of Recreational Craft in Norway (2021)'.

The report states, among other things, that DSB's supervision in 2011 and a survey from 2020 show that the level of safety work among rental enterprises and knowledge of applicable regulations varies. In 2020, it was concluded in a working group meeting, that several rental enterprises experience that tenants lack knowledge and experience regarding weather and sea conditions.

Companies that lease recreational craft are considered commercial enterprises, but the actual use of the vessels falls under the recreational craft regulations as long as the vessels are rented out without a crew.

In the report, the working group described ten different areas where measures are proposed:

- Requirements for the technical standards and maintenance of rental vessels
- Establishment of formal supervision of rental enterprises
- Registration of rental enterprises and vessels, and marking of vessels
- Requirements for communication and tracking equipment
- Competency requirements for those renting
- Requirements for a safety management system for rental vessels
- Requirements for minimum equipment on board
- Competency requirements for rental company personel
- Requirements for liability insurance
- Measures for promoting safety awareness targeted to renters

Of particular relevance for this investigation are the measures concerning communication and tracking equipment, where the report states, among other things:

> *The working group proposes that all rental vessels, which are covered by any new requirements, must at a minimum be equipped with an alerting device that enables distress signalling with position data.*
>
> *There are currently several tracking systems that can provide the rental company with information on the vessels' locations. The working group recommends that it should be a requirement for rental enterprises to use suitable equipment for tracking. It should be up to rental enterprises to decide which technology they wish to use.*
>
> *The JRCC primarily recommends equipment approved within the GMDSS system. This includes VHF with DSC (distress button), EPIRB, and PLB (personal locator beacon). It is important that this equipment is registered and programmed.*

The report concludes that the current regulations do not adequately safeguard the safety of those renting recreational craft. The recommendation calls for a clearer division of authority between the DSB and the NMA, as well as an assessment of a new and more comprehensive regulatory framework specifically governing the commercial rental of recreational craft.

1.12.2 VISION ZERO

The National Action Plan for Maritime Safety (Vision Zero) identifies two measures aimed at rental enterprises, one of which refers to the report 'Safety in the leasing of recreational craft in Norway – 2021'. The two measures are as follows:

> *10. DSB and the Norwegian Maritime Authority (NMA) will conduct joint, industry-targeted inspections of providers of the consumer service 'boat rental'.*
>
> *11. The Norwegian Maritime Authority will further evaluate the working group's recommendations in the Report on Safety in the Leasing of Recreational Craft in Norway (2021) and work to introduce selected measures.*

1.13 Measures implemented

The investigation has identified that certain requirements in the ISO standards for the vessel could not be considered sufficiently implemented or documented in accordance with the provisions of the standard. Based on these findings, the Norwegian Maritime Authority has informed that they plan to carry out an inspection of the manufacturer.

2. Analysis

2. Analysis

2.1 Introduction

This accident is one of many incidents that have occurred in recent years involving rental vessels and tourist anglers. Statistics from the Norwegian Maritime Authority show that a total of fifteen tourist anglers have died over a nine-year period and that all were foreign nationals. The statistics also show that the majority of accidents were capsizing incidents.

In this investigation, the NSIA has placed particular emphasis on examining the need for safety improvements within the rental sector. The analysis has also focused on the specific weather conditions on the day of the accident and how these affected the vessel's stability.

2.2 Sequence of events

As a fresh westerly breeze had been forecast in the area, the rental company had informed the tourist anglers that they should remain in the lee of the island of Silda. The two vessels that the group had rented, Loppa and Brynilen, therefore proceeded along the eastern side of the island on that day. At one point, Loppa passed Brynilen and continued northwards until they observed 'tornado' like winds further out in the fjord, at which point they turned back.

At a certain point on the return journey, the vessel was exposed to strong wind from the port side, causing the boat to heel to starboard and capsize within a short period of time. Both persons on board ended up in the sea. Satellite imagery indicates that, at around 13:00, strong gusts were observed in the area, reaching up to 24–26 m/s at nearby weather stations. In addition, satellite imagery clearly showed mountain waves with indications of downslope winds on the lee side of Silda. Mountain waves can produce chaotic wind patterns and significant turbulence, which corresponded well with the observations in the area. The mini-tornadoes observed may also have formed as a result of mountain waves and downslope winds on the lee side, where local topography and changes in horizontal wind with altitude may have played an important role in the formation of such vortices. High-resolution models from the MET showed that the area on the lee side of the island experienced chaotic wind conditions during the relevant time period. This may have produced local gusts that also blew towards the shore, which could explain why the boat capsized to starboard and later ended up in the foreshore of Silda even though the forecast wind direction suggested offshore winds. The rescue vessel that arrived at the accident site measured wind gusts exceeding 30 m/s.

The NSIA carried out stability calculations for the vessel in order to assess the wind force required to cause capsizing. The vessel's stability was generally good with two persons on board, but the calculations showed that when subjected to gusts exceeding 30 m/s the vessel would capsize. This was mainly due to the significant windage caused by the wheelhouse. The NSIA considers that the strong gusts of wind in the area were the primary cause of the capsizing.

Local conditions such as mountain waves with downslope winds were not captured by the models used by the Norwegian Meteorological Institute and were therefore not included in the weather forecasts issued. The tourists and the rental company therefore did not have access to this information when the decision was made to proceed to the lee side of Silda. In principle, the decision to operate on the lee side appears reasonable. However, local conditions, including both wind direction and wind strength, combined with the area's topography, resulted in the formation of mountain waves with downslope winds. The gusts on the lee side were therefore very strong and significantly more severe than could be expected from the weather forecast.

This type of weather phenomenon may be challenging for a rental company to take into account, as it is not included in standard forecasts from the Meteorological Institute. It is therefore important that rental enterprises are aware of such local conditions and understand that they may occur on the lee side of mountainous terrain. Weather conditions and the assessment of weather are further analysed in Chapter 2.5.

2.3 Survival aspects

When the two tourist anglers ended up in the sea, the air temperature was around 4°C and there were strong wind gusts. After both individuals got out of the wheelhouse and reach the surface, one of them was unconscious.

It is unclear why one of the tourist anglers lost consciousness so quickly after the accident. According to the factual information (see Chapter 1.6.2), falling into cold water without thermal protection may result in cold water shock. The post-mortem examination concluded that the cause of death was drowning. However, it cannot be ruled out that cold water shock was the cause of the outcome. No other external signs of injury were reported that could have contributed to the death.

The deceased was not wearing a lifejacket, but it is uncertain whether this had any impact on survivability in this particular case. Cold shock involves the body reacting to the cold and sudden temperature change during this short initial phase. Older individuals and those at increased risk of cardiovascular disease are particularly vulnerable to cardiac arrest or myocardial infarction during this phase.

The survivor was wearing an inflatable lifejacket. The NSIA considers that this contributed to the angler being able to reach shore and drag the other person with him.

The survivor managed to call another member of the group, who was in the second vessel, using his mobile phone. He was thus able to alert others that they were in distress. The NSIA considers the margin for the tourist angler to have successfully raised the alarm to have been narrow, as the mobile phone might have had no signal or ceased to function after he entered the water. The available means of alerting are discussed further in Chapter 2.4.2, in relation to requirements for rental enterprises.

2.4 Rental enterprises

2.4.1 INTRODUCTION

Rental enterprises are currently regulated primarily through the Internal Control Regulations and the Product Control Act. These apply to a wide range of enterprises and are not specifically tailored to rental operations. As a result, the requirements are generic. Inspections carried out by DSB have shown that many enterprises were not familiar with the applicable regulations and that there was limited documented internal control.

2.4.2 TRACKING AND ALERTING

The rental company had fitted AIS tracking to the vessels and installed VHF DSC with a distress button. This was not required by the current regulations but had been implemented by the rental company to enhance safety. In this case, however, there was no time to use the distress button as the capsizing occurred so rapidly. As a result, the mobile phone was the only available means of alert. The NSIA considers that it was largely by chance that the surviving fisherman was able to alert others. Having ended up in the water, the fisherman’s phone functioned once he managed to reach shore. Had it not functioned, it would have been less likely that he would have been located

in time. He was soaked after immersion in the sea, and the air temperature was low with strong winds.

The accident demonstrates that margins are narrow and that the ability to call for help is sometimes a matter of chance. Although the rental company had invested in both tracking systems and VHF DSC, these measures were of no practical use in this instance, as AIS tracking did not function due to coverage issues and there was no time to use the distress button. Since the survivor's mobile phone functioned, he was able to alert others, enabling the rental company to determine their location. The NSIA considers that reliance should not be placed on mobile phones, and that it is essential for rental enterprises to equip vessels with functioning tracking systems in order to maintain continuous awareness of the location of rental vessels. In addition, it is essential that reliable alerting equipment is available on board, adapted to capsizing scenarios in which events occur rapidly. If rental enterprises maintain an overview of rental vessels via a tracking system, it will also be easier to determine the location of those renting in the event of an emergency.

NSIA Maritime report 2026/03, in which a rental boat capsized and three tourist anglers lost their lives, demonstrated the importance of having tracking systems and alerting mechanisms. In that investigation, the rental company was unaware that the tourist anglers were operating outside the designated operating area, and they were not able to alert when the accident occurred. As a result, it took a long time before anyone became aware that they were in distress.

The Report on Safety in the Leasing of Recreational Craft in Norway proposes, inter alia, to introduce requirements for both tracking and alerting systems for rental vessels. In this accident, for example, a Personal Locator Beacon capable of alerting the emergency services directly would rapidly have provided information about the position of the persons in distress. This would have constituted a more reliable means of alerting than a mobile telephone that had fallen into the sea.

The NSIA considers that there is a lack of regulations specifically directed at rental enterprises and the safety measures required to conduct safe rental operations. This is particularly important given that those who rent boats are not always familiar with the vessel, the waters, the weather conditions or the Norwegian emergency alerting system. The regulations currently applicable to rental enterprises are too generic and contain few safety measures specifically aimed at ensuring the safe rental of vessels. Regulations aimed at rental enterprises should include requirements for both tracking and alerting systems. Two accidents investigated by the NSIA have demonstrated that these are critical safety measures for saving lives. The Vision Zero policy states, inter alia, that the Norwegian Maritime Authority shall carry out further assessments of the working group's recommendations in the Report on Safety in the Leasing of Recreational Craft in Norway (2021). The NSIA considers that the proposal to introduce mandatory tracking and alerting systems is one of the measures that should be prioritised for rental enterprises.

In the NSIA Maritime report 2026/03, two recommendations were issued concerning the establishment of a regulatory framework more specifically aimed at rental enterprises and the safety measures required to operate rental operations safely. The regulations should also include requirements for tracking and alerting for rental enterprises and rental vessels. It is further requested that the Norwegian Maritime Authority be granted the authority to carry out supervision in accordance with this regulatory framework. This report supports these recommendations.

2.5 Weather conditions

According to the rental company, the forecast indicated westerly winds of 7–8 m/s with gusts up to 11–12 m/s when the anglers set out. The forecast from MET indicated 11 m/s wind from the west with gusts of 16 m/s in Bergsfjorden east of Silda. This discrepancy may be due, among other things, to the timing of when the forecast was checked.

The forecast conditions were within the vessel's design category, which had a wind limit of 13.8 m/s. This limit applies to mean wind speed and does not account for strong gusts caused by local weather phenomena such as mountain waves. The forecast also changed as the departure time approached.

Subsequent analysis showed significant local variations in wind strength in the area. At Hasvik Airport, the mean wind was 11.2 m/s, while at nearby Sluskfjellet it was 21.3 m/s. Gusts of up to 24–26 m/s were also recorded in the area at the Fakken and Hasvik – Sluskfjellet stations.

It can be challenging for a rental company to assess how the weather will actually develop when special weather phenomena such as mountain waves are not included in the forecasts issued by the Meteorological Institute. It is therefore important that rental enterprises monitor changes in weather forecasts and develop knowledge of where localised weather phenomena may occur. Weather conditions must also be continuously assessed both by those at sea and by rental enterprises, as conditions can change rapidly in certain areas. Tracking and communication systems are also valuable tools, enabling rental enterprises to advise or intervene should conditions deteriorate.

To gain an indication of how strong winds may become in an area, measurements from nearby weather stations or forecasts for wind-exposed areas may provide an indication of the wind potential in the area. This may assist both rental enterprises and tourist anglers when assessing the wind conditions that may arise out at sea.

2.6 The vessel's CE marking and design

2.6.1 VESSEL STABILITY

Vessels used in rental operations are used frequently and often operated close to the limits defined by their design category in terms of wind and wave conditions.

The NSIA conducted stability calculations of the vessel to assess how much force would be required to capsize it and to evaluate the effect of the windage of the wheelhouse. The vessel's stability was generally good with two persons on board, but the calculations showed that when subjected to gusts exceeding 30 m/s the vessel would capsize. This corresponds with the gusts of over 30 m/s that were observed on the day of the accident. It is therefore vital that rental enterprises consider the wind potential in an area, as powerful gusts may generate significant wind loads – in this case specifically due to the large wheelhouse – thereby adversely affecting the stability of the vessel.

2.6.2 COMPLIANCE WITH RELEVANT ISO STABILITY STANDARDS

It was identified that certain requirements in the ISO standards could not be considered fulfilled or documented in accordance with the provisions of the standard. The NSIA considers that the ISO standards are complex and not particularly user-friendly, which may partly explain the lack of compliance. However, the NSIA cannot conclude that the technical deficiencies identified had any bearing on this accident.

Nevertheless, the NSIA considers it important to highlight these findings in order to prevent other types of accidents in the future, a failure to meet technical requirements could be significant. Particular note is made of the under-dimensioning of the drainage system in the event that the recess becomes filled with water. No water ingress was identified prior to the vessel suddenly capsizing due to strong gusts in the area. The insufficient drainage capacity is therefore not considered to have been relevant to this specific accident.

Based on these findings, the Norwegian Maritime Authority has informed that they plan to carry out an inspection of the manufacturer.

3. Conclusion

3. Conclusion

The investigation has established the following:

- The vessel was exposed to strong wind (likely gusts well in excess of 30 m/s) from the port side, which caused the boat to heel to starboard, capsize within a short period of time, and both persons on board to end up in the sea.
- Satellite imagery showed clear mountain waves with indications of downslope winds on the lee side of Silda. Mountain waves can produce chaotic wind patterns and significant turbulence, which corresponded well with the observations in the area.
- The mini-tornadoes observed may also have formed as a result of mountain waves and downslope winds on the lee side, where local topography and changes in horizontal wind with altitude may have played an important role in the formation of such vortices. High-resolution models from the MET showed that the area on the lee side of the island experienced chaotic wind conditions during the relevant time period.
- Local conditions such as mountain waves with downslope winds were not captured by the models used by the Norwegian Meteorological Institute and were therefore not included in the weather forecasts issued. The tourist anglers and the rental company therefore did not have access to this information when the decision was made to proceed to the lee side of Silda.

Furthermore, the investigation has shown that:

- There were small margins that allowed the tourist angler to raise the alarm, as the mobile phone could have lacked signal or ceased functioning after immersion in the sea. Although the rental company had invested in both a tracking system and VHF DSC system, these aids were of no use in this case.
- Previous accidents involving rental vessels that have capsized have demonstrated the importance of having a tracking system installed on board and a means of alerting that is also suited to capsizing incidents that occur rapidly.
- The NSIA considers that there is a lack of regulations specifically directed at rental enterprises and the safety measures required to conduct safe rental operations. In this accident, for example, a Personal Locator Beacon capable of alerting the emergency services directly would rapidly have provided information about the position of the persons in distress. This would have constituted a more reliable means of alerting than a mobile telephone that had fallen into the sea.
- It can be challenging for a rental company to assess how the weather will actually develop when special weather phenomena such as mountain waves are not included in the forecasts issued by the Meteorological Institute. To gain an indication of how strong winds may become in an area, measurements from nearby weather stations or forecasts for wind-exposed areas may provide an indication of the wind potential in the area.
- The vessel’s stability was generally good with two persons on board, but the calculations showed that when subjected to gusts exceeding 30 m/s, the vessel would capsize. This was mainly due to the significant windage caused by the wheelhouse. It is therefore vital that rental enterprises consider the wind potential in an area, as powerful gusts can generate significant wind loads on wheelhouses, thereby adversely affecting the stability of the vessel.
- It was identified that certain requirements in the ISO standards could not be considered fulfilled or documented in accordance with the provisions of the standard. However, the NSIA cannot conclude that the technical deficiencies identified had any bearing on this accident.

4. Safety recommendations

4. Safety recommendations

The investigation of this marine accident has not identified new areas in which the NSIA deems it necessary to propose safety recommendations for the purpose of improving safety at sea. The report nevertheless contains relevant lessons that can contribute to improved maritime safety.

Norwegian Safety Investigation Authority
Lillestrøm, 11 May 2026