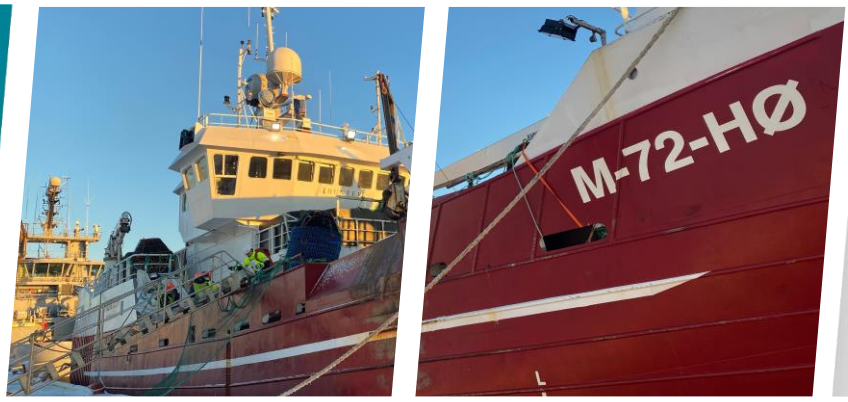
Norwegian Safety Investigation Authority



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REPORT MARINE 2024/01

Fall overboard from the fishing vessel 'Hunter' (LKUA) in the Barents Sea on 30 January 2023

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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.

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Photo: NSIA

Legal authority for the Norwegian Safety Investigation Authority's activities is found in Section 473 of the Act of 24 June 1994 No 39 (the Norwegian Maritime Code); cf. the Regulations of 11 January 2008 No 30 on public investigations of accidents and incidents under Section 473 of the Maritime Code.
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.

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Notification

On the morning of 31 January 2023, the Norwegian Safety Investigation Authority (NSIA) was notified of an accident by the Norwegian Maritime Authority (NMA). A fisherman had fallen overboard from a boat in the Barents Sea the day before and a search had been carried out through the night.

The NSIA initiated a safety investigation and travelled to Tromsø on 2 February 2023 to interview the crew, obtain information and inspect the vessel.

Figure 1: Overview of the mainland and Svalbard with Hunter's course line and accident site. Source: Norwegian Coastal Administration AIS

Summary

On Monday 30 January 2023, a fisherman fell overboard from a working deck aft on the fishing vessel ‘Hunter’ in the Barents Sea. The weather conditions were bad, with snow showers, east-northeasterly winds of 30–35 knots and waves of 3–4 metres from the east. The accident occurred in connection with the deployment of crab pots. The fisherman who fell overboard was tasked with attaching the pots with a snap hook to the set line running freely out through the setting hatch.

The fisherman ended up in the sea, wearing work clothes and a buoyancy aid with a buoyancy of 50N, and thus had little chance of surviving. There were no other vessels or rescue crews nearby, and the fisherman’s only chance of survival was to be quickly found and rescued by the fishing vessel.

The investigation has identified several safety issues. During the rescue operation, language misunderstandings delayed the rescue work, and the search was initiated in another direction of where the fisherman had fallen overboard. No lifebuoy was thrown, and due to heavy weather it was not justifiable to use the MOB boat. Nor was it possible to locate the fisherman who had fallen overboard. Regular drills could have revealed both language problems and technical weaknesses, as well as strengthened cooperation. The minimum requirements for rescue equipment were not balanced against the risks involved in the work performed.

The fishing arrangement had a fundamentally flawed design. The aft working deck had no physical barriers against falling overboard and the design was for both the set line and the pots to pass freely out of the set opening without encountering obstacles. In combination with an intense work situation, this entailed a risk of getting stuck. The lack of physical barriers was not identified by the Norwegian Maritime Authority.

Audits were carried out at times when the vessel was not manned for operations. Thus, the supervisory authority did not have an adequate basis for identifying language problems or the crew’s lack of knowledge about the vessel’s rescue equipment.

The working situation on the aft deck was not safe. The procedure descriptions had major shortcomings and risk assessments had either not been carried out or had not been sufficiently objectively carried out. The shipping company's safety management system had several weaknesses and they did not comply with the obligations it had undertaken.

Since the accident, the shipping company has implemented several measures they believe will improve safety. The NSIA consider that the shipping company’s measures do not sufficiently ensure the safety of the fishermen on board.

The investigation has shown that terms for snow crab fishing as regulated today can have a negative impact on safety. Competitive fishing under the current framework conditions may have contributed to heightened risk in the work. The snow crab fleet competed to take the biggest possible share of the total quota as quickly as possible. This may have contributed to industry operators taking risks that could compromise safety.

NSIA put forward four safety recommendations after this investigation.

About the investigation

Purpose and method

The NSIA has classified the incident as very serious based on the definition in the Maritime Code. The purpose of this investigation has been to clarify the circumstances that led to a fisherman falling overboard in the Barents Sea. 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]).

Sources of information

The factual information is based on interviews with the crew and with representatives of the shipping company. In addition, the NSIA has been given access to documentation from the shipping company's management system, the police investigation documents, the Joint Rescue Coordination Centre's log and documentation from the NMA, as well as several similar investigations.

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, as well as the NSIA's investigation and findings.

The second part, the 'Analysis' part, 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 any detail.

The final part of the report contains the NSIA's conclusions and safety recommendations.

[1] *See https://www.nsia.no/About-us/Methodology*

1. Factual information

1. Factual information

1.1 Sequence of events

1.1.1 EVENTS LEADING UP TO THE ACCIDENT

At 11:15 on 28 January 2023, the fishing vessel ‘Hunter’ left Båtsfjord after delivering their catch and taking a new chief officer on board, and headed for the fishing grounds east of Hopen in the Barents Sea.

Before departure, a one-hour safety meeting was held at which the entire crew were present. This was standard procedure before the start of a new voyage. The review covered both procedures and practical use of rescue equipment. The safety meetings consisted of theory and the skipper explained safety procedures. The only practical demonstration was when the skipper demonstrated the use of an immersion suit. The crew did not test the rescue equipment themselves and no full-scale exercise covering fire, man over board (MOB) situations, evacuation etc. was held.

At 07:00 on 30 January 2023, they had returned to the fishing grounds east-southeast of Hopen and started taking in a chain of pots they had deployed on the previous voyage.

The new chief officer had previous experience of crab fishing and received vessel-specific training from the skipper in Båtsfjord before departure. He attended the safety meeting that was held in English with the rest of the crew before departure. When they arrived at the fishing grounds, the chief offiser watched the skipper and the crew deploy a chain of pots.

There was a watch change at 14:00, which was the chief officer’s first independent watch. The watch was carried out alone, as it was not common to use extra lookouts in the wheelhouse when they were engaged in fishing operations. Before hauling pots, the crew had to prepare bait. The process started with the crew having to transport the bait in buckets from the afterdeck over the conveyor belt and to the forward working deck. This entailed the crew having to move forward on the belt with little or no physical protection against falling overboard. Alternatively, the crew could carry the bait forward along the ship's starboard side, but this was perceived as cumbersome as the buckets had to be carried down a steep ladder.

At around 14:30, work began on hauling a chain of pots. The work continued until the crew had sorted the catch for production in the factory. Then they removed old bait from the pots they had hauled and added new bait before stacking them on the foredeck. There was little room on deck for all the pots because the crew did not want to stack them too high due to the movements in the boat. When they were finished, the chief officer wanted to wait and see how the weather and sea conditions developed, and the fishermen took a break in the wheelhouse. At that point in time, a moderate to strong gale was blowing from the east-northeast and visibility was somewhat reduced due to snow showers.

At about 17:00, the crew started the preparations process of deploying the pots and at 17:28 they began to set out pots. As usual, there were two fishermen on the foredeck and two on the afterdeck; see Figure 2. One fisherman on the foredeck and one on the afterdeck could communicate directly with the wheelhouse using the intercom in their helmets. Video surveillance from the wheelhouse was supposed to give the crew member on watch an overview of the work operations, but the system had stopped working on the way out to the fishing grounds. The CCTV camera had recently been replaced as the previous system had broken down on the previous voyage.

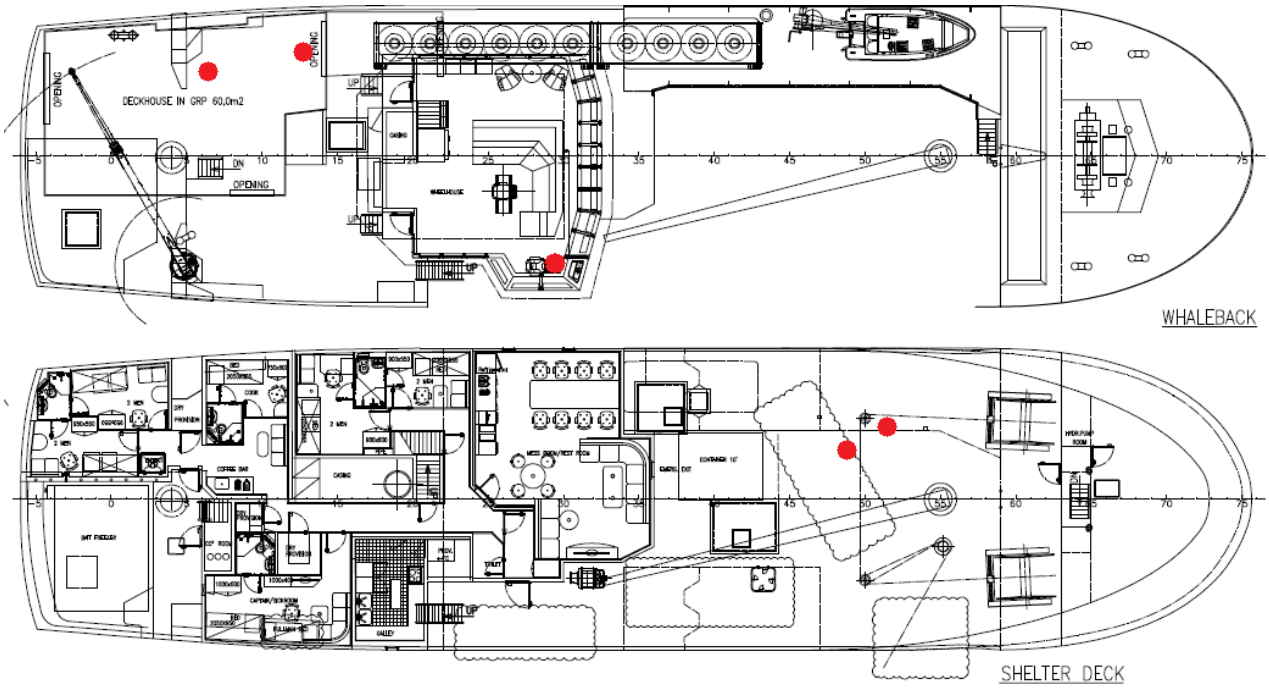

Figure 2: Red markings indicate the locations of crew on the deck and in the wheelhouse just before the accident. Source: Shipping company. Illustration: NSIA

The fishermen on the foredeck placed pots on the conveyor belt, and the pots were transported up and over to the crew standing on the afterdeck. The work on the afterdeck was organised so that one fisherman lifted the pots off the conveyor belt and prepared the sling hook attached to the crowfoot to the pot, before passing the hook to the next fisherman. The set line was reinforced with a thinner rope that was two metres long, which was spliced onto the set line approximately every 20 metres.

The vessel's speed during deployment of the gear was stated to ordinarily be within the range of 3.5–4 knots, depending on the weather conditions. The speed graph shows that the speed was somewhat higher on the day of the accident; see Figure 3.

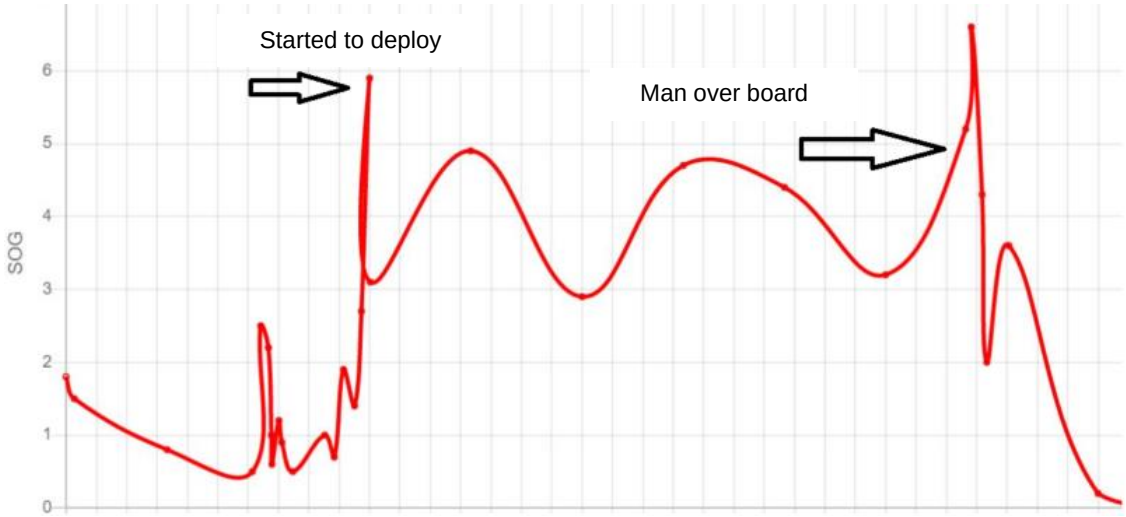

Figure 3: Speed graph from deploying the pots and at 17:28 and man overboard at approximately 17:58 on 30 January 2023. Left arrow shows the time when they started to deploy pots and the right arrow is the time when the fisherman fell overboard. Source: Norwegian Coastal Administration AIS. Illustration: NSIA

At a speed of four knots, there was about a 10-second gap between each pot to be hooked to the set line every 20 metres. Since the point of attachment on the line was only two metres long, it gave the fisherman about one second to attach the hook. The fishermen have stated that the work

situation was demanding that day and that they had to make an effort to both hold on and perform the work operation, as there was a lot of movement in the vessel. The pots also arrived on the conveyor belt at somewhat uneven intervals. At the beginning of the process, the two fishermen aft therefore used some extra ready-baited pots they had lying on the starboard side of the working deck.

1.1.2 THE ACCIDENT

At about 17:58, after half an hour of work where around 180 out of 300 pots had been deployed, the fisherman who was lifting the pots off the conveyor belt had just given the other fisherman a pot and turned to prepare the next one; see Figure 4. He was leaning on the pots and other fixtures on the afterdeck so as not to lose balance due to the rough sea.

The fisherman at the conveyor belt heard a faint scream, and when he turned around, he saw that the other fisherman was gone. He immediately realised that he had been pulled overboard.

Figure 4: Reconstruction of the fishermen's position on the afterdeck at the time of the accident. Photo: NSIA

The fisherman, who was not equipped with intercom, ran from the afterdeck up to the wheelhouse and asked the chief officer to stop the boat. The chief officer stopped propulsion and accompanied the fisherman to the aft working deck to understand what had happened. The chief officer was then told that a fisherman had fallen overboard. The chief officer and the fisherman went far aft on the starboard side to see whether they could see or hear the man who had fallen overboard. Then the chief officer went forward on the foredeck and told the two fishermen who were standing there to cut the set line from the drum. When the chief officer returned to the wheelhouse, he saved the position in the electronic chart system. The time was then approximately 18:01. The chief officer then switched the propulsion back on, initiated a starboard turn and left the wheelhouse to call on

the skipper in his cabin one deck below. The skipper was awakened by the chief officer who told him that it was a 'big alarm' and the skipper immediately realised that something serious had happened.

The fisherman on the foredeck first tried to pull the set line back with the winch to see whether the fisherman in the water had managed to cut it, but the line was still tight, so he cut the line as the chief officer had told him to do. The fisherman then ran far aft on the starboard side to look for the fisherman who had fallen overboard, but it was difficult to see anything in the dark through heavy sleet. One fisherman later informed that he heard three distinct cries from abaft the midship on the port side and tried to identify exactly where they came from. The fisherman then went to the other side to see whether he could see or hear anything, but visibility was too poor and he heard no more cries. See Figure 5 for an overview of key events at the time of the accident.

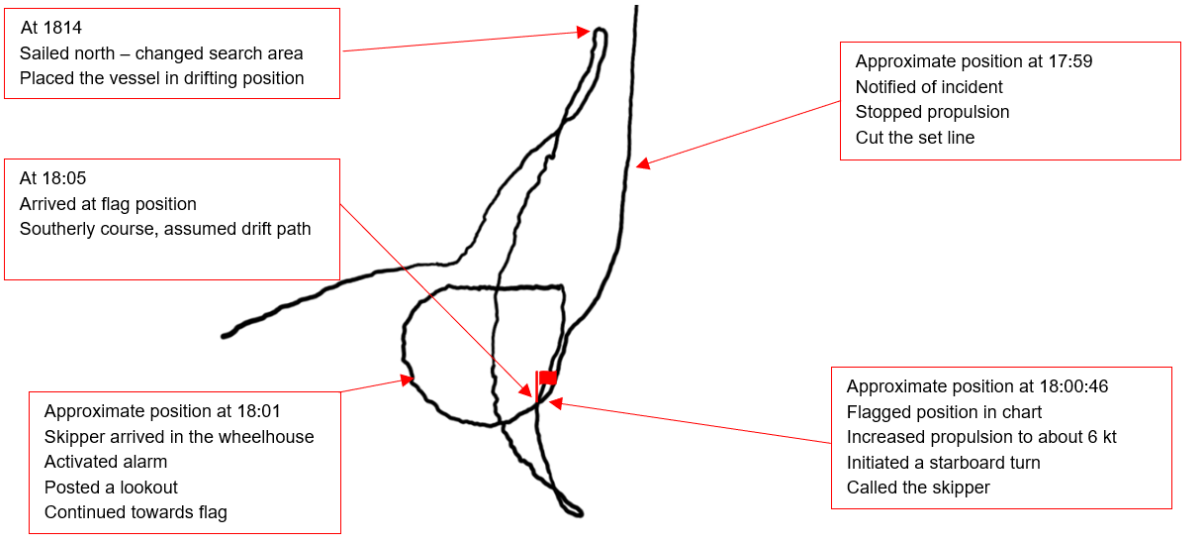

Figure 5: Overview of activities on board and the vessel's movements around the time of the accident. Source: Vessel chart system. Illustration: NSIA

1.1.3 THE RESCUE OPERATION

When the skipper came up to the wheelhouse, he gained a quick overview of the situation and was told that the fisherman who was attaching the pots to the set line had fallen overboard. The chief officer had begun a starboard turn, and the fishing vessel was west of the flag when the skipper came up in the wheelhouse. The searchlight was already switched on and was being used to search northward in the starboard turn. The skipper activated the alarm on the fire panel shortly after he had gained an overview of the situation. He observed that the set line had been cut and was told that a lifebuoy had been thrown into the sea.

The skipper asked the chief officer whether the flag in the electronic chart system marked the position where the fisherman had fallen overboard, and the chief officer confirmed this. The skipper therefore continued the starboard turn and then sailed directly towards the flag, while actively using the searchlights.

After the vessel reached the marked position, the skipper continued south, as that would have been a natural drift path for a person lying in the sea.

After a few minutes of searching to the south, it became clear to the bridge team that the communication they had received about the flag's position in the electronic chart system was based on a misunderstanding. The position did *not* indicate where the fisherman had fallen overboard, but rather the vessel's position when the chief officer marked the flag.

The skipper then manoeuvred the vessel further north and placed her west of the tow line to take account of the possibility of the missing fisherman drifting in a southwesterly direction.

At 18:14, the vessel had reached the position where they assumed the fisherman had fallen overboard; see Figure 6. The vessel was then placed in a drifting position against the weather while they proceeded with a visual search. The drifting position was maintained for about 10 minutes, covering a distance of about 515 metres.

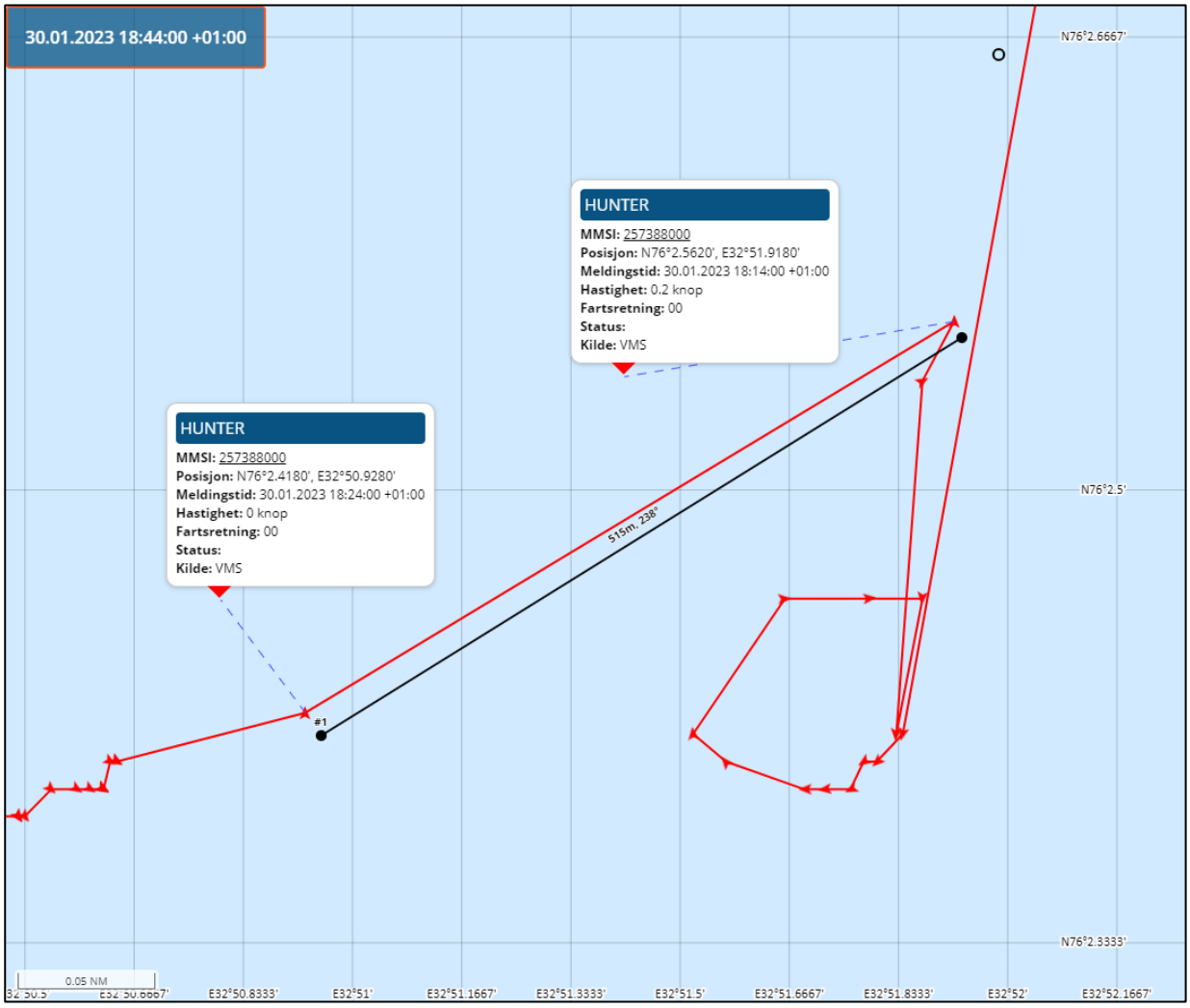

Figure 6: The different positions of the vessel during the search process.
Source: Norwegian Coastal Administration AIS. Illustration: NSIA

Snow flurries meant that the visibility conditions remained extremely difficult throughout the search, which made it challenging. The crew keeping a lookout were told to look for reflectors as the fisherman who fell overboard was wearing a lifejacket and a helmet, both of which had reflective markings on them.

The skipper considered it neither appropriate nor safe to deploy the MOB boat to expand the search field, as the sea was too rough and visibility too poor.

After about an hour of different search patterns, calculated according to the fisherman's most likely drift path, it became clear to the crew that they would not find the fisherman alive. The skipper was later told that no lifebuoy had been thrown, as he had first been told.

1.1.4 SEARCH FOR MISSING, PRESUMED DEAD

The skipper informed the shipping company of the accident at 18:56. The shipping company contacted the Joint Rescue Coordination Centre (JRCC), and there was direct contact between the skipper and the JRCC at 19:40. The vessel issued a MAYDAY call at 20:00.

Two other fishing vessels joined the search and were delegated their own search areas in collaboration with 'Hunter' and the JRCC.

The Norwegian Coast Guard represented by the coast guard vessel 'Harstad' was also called for assistance and assisted 'Hunter' in retrieving gear that had been deployed when the accident occurred. The chain of pots gave no further clues about what had happened on the day of the accident.

1.2 Rescue equipment aboard

There were four lifebuoys on board; one lifebuoy with a line on the aft working deck (see Figure 7), one lifebuoy with a line on the forward working deck and one lifebuoy with light and smoke on each side of the wheelhouse.

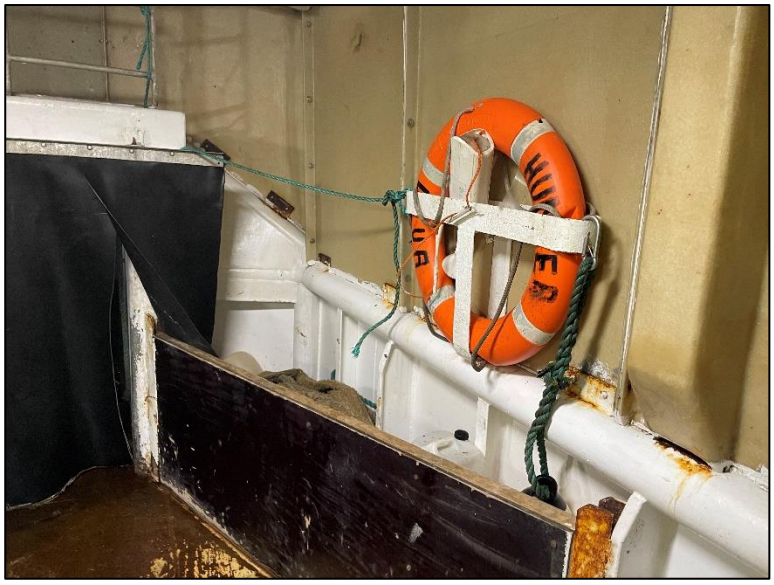

Figure 7: Lifebuoy located on the port side of the afterdeck. Photo: NSIA

The MOB boat was located forward on the port side. There were survival suits for everyone on board and two life rafts certified for 25 people. During fishing operations, the deck crew wore lifejackets with a buoyancy of 50N. The lifejackets were only a few weeks old, but were in a modified with crotch straps that were either cut off or wound around the rear of the vest.

In the NSIA's interviews with the crew about the use of personal safety equipment, most expressed that the current skipper was safety-conscious. The skipper routinely gathered the crew before a new trip to demonstrate immersion suits and fire procedures and talk about the dangers of the vessel's ammonia-operated freezing facilities, as well as general work-related risks, including man overboard situations. The skipper had also purchased work helmets and lifejackets with reflective markings. Everyone working on the open deck was required to wear both at all times.

Some of the crew thought that the lifejacket entailed a certain risk of getting stuck and that it was as much a hassle as it provided additional safety. The work vest was marked with 50 N buoyancy, had sewn-on reflective markings, but no light or whistle.

1.3 Weather and sea conditions

1.3.1 THE NORWEGIAN METEOROLOGICAL INSTITUTE

The NSIA has obtained information from the Norwegian Meteorological Institute about the weather conditions from and including departure from Båtsfjord on the morning of 28 January, and up to and including 30 January when the accident occurred.

The waters from the Finnmark coast and north towards the fishing grounds at Hopen, in the fisheries protection zone around Svalbard, were dominated by a low pressure system east of Iceland, extending further up the Barents Sea. The low pressure caused a moderate to fresh gale from the east-northeast, wave height of 3–4 metres and some snow showers. There was a risk of ice formation. The weather type and wave height also persisted on 30 January when 'Hunter' had arrived at the fishing grounds southeast of Hopen to pull the first chain of pots.

1.3.2 WEATHER AND SEA OBSERVATIONS FROM THE VESSEL

The fishing vessel returned to the fishing grounds at a somewhat reduced speed due to the weather conditions. When they arrived, they waited to see how the conditions developed before starting to haul the first chain of pots that had been left out while they delivered their catch in Båtsfjord.

Those on watch did not record accurate weather observations on 30 January or at the time of the accident, but the crew considered the weather and sea conditions to be within the margins they considered acceptable for their fishery operations. In conversation with the chief officer about the weather and sea conditions in the afternoon during the deployment of the second chain of pots, the following was stated in hindsight: assumed wind speed of 30–35 knots from an easterly-northeasterly direction, about 3 m waves from an easterly direction and some snow showers, no noticeable current.

1.4 Description of waters

The fishing vessel 'Hunter' engaged in crab fishing with pots about 100 nm east of Hopen in the protection zone off Svalbard. The chains were set at a depth of about 300 metres in the area called Hopendjupet, east of Hopenbanken.

The Norwegian Pilot Guide (*Den Norske Los*) describes Hopen as a manned Arctic island in the Barents Sea about 115 nm due east of the southern tip of Spitsbergen. The weather conditions on and near Hopen are very unfavourable for most of the year, with especially heavy precipitation and fog.

The NSIA assumes that relatively similar weather conditions can be expected also in the southeastern part of the protection zone near Hopen.

1.5 Vessel

'Hunter' with the call sign LKUA is a fishing vessel that was built as a Danish seiner at SIMEK A/S in Flekkefjord in 1989. In 2016, the vessel was purchased by the shipping company Havøy Kystfiske AS and rebuilt to be used for catching snow crab. The retrofit was completed in February/March 2017 and active fishing was initiated. The vessel was registered in the Norwegian Ordinary Ship Register (NOR) and the hull/machinery was classified in Rina S.P.A.

1.6 Operating conditions

After the conversion to snow crab fishing, 'Hunter' was engaged in fishing in the Barents Sea, where this year's season was estimated to last from January until the end of May 2023. Out of season, the vessel was laid up.

The fishing season was divided into trips of 3–4 weeks' duration, and this was the second trip of the year. The season of active fishing started at 11:50 on 2 January. At 07:00 on 26 January, after 21 days of fishing, 'Hunter' delivered about 63 tonnes of catch in Båtsfjord. For Norwegian participants, snow crab fishing took place in accordance with what in fisheries has been called 'Olympic' fishing,[2] which meant that all approved vessels had the same right to fish as much of the total quota as they could, until the limit had been reached.

1.6.1 THE DEPLOYMENT AND HAULING PROCESS

The crab pots were put together in chains, and there were a total of 14 of them on board on this trip.

Each chain consisted of about 6,000 metres of rope, where the pots were attached to the set line with a sling hook every 20 metres. The arrangement included set lines on a drum from the foredeck that went in a pulley system aft to the upper afterdeck where the pots were hooked onto the line. The sling hooks were attached to spliced-in parallel ropes over a length of two metres with a slightly smaller dimension (16 mm) than the set line (24 mm).

The deployment process involved a minimum of five crew members on watch at the same time: one deck officer on the bridge, two fishermen on the foredeck and two fishermen on the aft working deck. The two fishermen on the foredeck placed pots on the conveyor belt on the vessel's port side. The conveyor belt was divided into three parts, the first one taking the pots up one deck and the other two transporting the pots aft. The pots were ready baited and closed on the foredeck before they were sent aft. The fishermen on the foredeck placed the pots on the conveyor belt. The two on the afterdeck divided the tasks between them, so that one was responsible for removing the pots from the conveyor belt and readying them for the other fisherman, who in turn attached the pots to the set line. Each individual pot had a line about 2 metres in length with a thickness of 12 mm, which was attached to the pot by a crowfoot and a sling hook at the other end. The fisherman who removed the pot from the conveyor belt was supposed to place it in a favourable position for the fisherman who was stood a little further aft, and give him the end of the line with the sling hook for the pot. The fisherman further aft was to attach the sling hook to a spliced loop on the set line, after which the pots went aft and out the setting hatch.

The covered working deck had an opening at the forward end where the conveyor belt went, and easy access from the starboard side of the deck. The setting hatch was 1.52 metres high and 2.88 metres wide; see Figure 8.

[2] Quota shared with several vessels, all of which are instructed to cease fishing when the quota is exhausted.

Figure 8: Setting hatch on aft working deck. Photo: NSIA

The hatch was covered by three polyurethane skirtings and fixed to the top. The hatch was flush with the deck so that the pots went freely into the sea, and the arrangement had no physical barriers to prevent someone falling through the hatch and into the sea. The NMA may, upon application, reduce the height of railings and bulwarks on working decks from 1,000 mm to 600 mm, but no exemption from this requirement had been applied for.[3] Several of the crew considered the work operation on the afterdeck challenging in rough seas, as the possibility of holding on while working was limited. The deck was mostly bare steel, and anti-slip paint that had previously been applied was worn away in the work zone.

A fixed safety line was installed on the working deck.

Figure 9: Drum and handle with sling hook for safety line. Photo: NSIA

[3] Section 6-4 of the Regulations of 13 June 2000 No 660 on the construction, equipment and operation of fishing vessels of 15 m in length and over.

The wire for the safety line (see Figure 9) was stuck inside the drum and was not connected to the sling hook with the handle that should have been attached to the end of the wire. The safety line was not in use at the time of the accident.

The deployment required continuous teamwork between those on the foredeck, those on the afterdeck and the navigator on watch in the wheelhouse. If the vessel was going at too low a speed, there was a risk of pots piling up on the afterdeck, and if the speed was too high, the aft crew risked not having pots available for attachment to the set line every 20 metres.

Two men were primarily needed during hauling of the gear on the starboard side forward by the sorting table, before the catch was sent down into the factory for processing and freezing. Some of the crew alternated to a certain extent between deck work and factory work as needed.

There was a dedicated manager on each shift in the factory, as was the case on deck.

1.7 Crew recruitment and language skills

When the vessel left Båtsfjord on 28 January, she was carrying a crew of 21: four Norwegian nationals and 17 with a background from Eastern Europe, Russia and Spain.

Fishermen were usually recruited on Facebook, and those interested contacted the shipping company directly. No individual language tests were conducted, but the shipping company stated that the dialogue during the hiring process would have revealed insufficient language skills.

When fishing started, the work on deck and in the factory was organised according to a 6/6-hour shift arrangement. Two men attended to the engine room and the vessel's technical installations. In addition, there was a permanent cook on board whose working hours corresponded to mealtimes.

The Norwegian skipper and a Russian chief officer also shared their watches in the wheelhouse according to a 6/6-hour shift arrangement.

The NSIA's interviews with the crew revealed a certain common language challenge. The majority of the crew on this trip were from Eastern Europe, where most of the younger crew members spoke English, but not Norwegian. The crew stated that the official working language on board was English, although they often switched to their own mother tongue among themselves. The safety management system stated that the working language was Norwegian, but most of the manual was in both Norwegian and English. One Spanish-speaking crew member did not speak English. His spoken Norwegian was also very poor, and he had little reading perception in languages other than Spanish.

1.8 Medical and health information

1.8.1 HEALTH INFORMATION

No medical or health information has emerged about the missing person that is considered relevant to the accident.

1.8.2 SURVIVABILITY

The special report on recreational craft accidents (Marine 2019/02) included an assessment of the chances of survival after falling over board. It showed that, when people fall into the water, there will always be a risk of cold water shock that can lead to rapid drowning. The chances of survival after falling into the sea depend on factors such as clothing, water temperature and wave height. The cold water shock leads to increased heart rate, increased breathing rate and gasping for air.

The ability to hold your breath is significantly impaired, and the increased breathing rate increases the risk of inhaling water. Susceptible persons are also at risk of being taken ill when falling into cold water. For example, people with cardiopulmonary diseases will be at risk of acute cardiac arrest. Generally speaking, a wind force of more than 5 on the Beaufort scale (fresh breeze, 8–10.7 m/s) is considered sufficient to cause waves to break, which will make it more difficult to keep airways clear of water and avoid drowning. The estimated survival time in water according to different temperatures, wind forces and clothing assemblies is indicated in Table 1.

Table 1: Estimated survival time in water with different temperatures, wind forces (as an indication of wave conditions) and clothing assemblies. The model is based on a young, slim and healthy male wearing a lifejacket. Source: Review of probable survival times for immersion in the North Sea (Robertson & Simpson, 1996)

CLOTHING ASSEMBLY (WORN WITH LIFEJACKET)	BEAUFORT WIND FORCE	TIMESCALE WITHIN WHICH THE 'STANDARD MAN' IS LIKELY TO SUCCUMB TO DROWNING	
		WINTER (WATER TEMP 5°C)	SUMMER (WATER TEMP 13°C)
WORKING CLOTHES (NO IMMERSION SUIT)	0-2	within ¾ hour	within 1¼ hours
	3-4	within ½ an hour	within ½ hours
	5 and above	within significantly less than ½ an hour	within significantly less than ½ hours
DRY MEMBRANE SUIT WORN OVER WORKING CLOTHES - NO LEAKAGE INTO SUIT	0-2	within 2 hours	> 3 hours
	3-4	within 1 hour	within 2¾ hours
	5 and above	within significantly less than 1 hour	within significantly less than 2¾ hours
MEMBRANE SUIT WORN OVER WORKING CLOTHES WITH 1 LITRE LEAKAGE INSIDE SUIT	0-2	within 1¼ hours	within 2½ hours
	3-4	within ½ an hour	within 1 hour
	5 and above	within significantly less than ½ an hour	within significantly less than 1 hour
DRY INSULATED SUIT WORN OVER WORKING CLOTHES - NO LEAKAGE INTO SUIT	0-2	> 3 hours*	> 3 hours *
	3-4	> 3 hours	> 3 hours*
	5 and above	⩾ 3 hours	> 3 hours
INSULATED SUIT WORN OVER WORKING CLOTHES 1 LITRE LEAKAGE INSIDE SUIT	0-2	> 3 hours	> 3 hours*
	3-4	within 2¾ hours	> 3 hours*
	5 and above	within significantly less than 2¾ hours May well exceed 1 hour	> 3 hours*

1.9 Vessel owners and safety management

The shipping company Havøy Kystfiske AS became the owner responsible for ISM on 1 August 2016. The company owns two vessels that are subject to ISM obligations; 'Hunter' and 'Sea Hunter'. 'Sea Hunter' did not take part in active fishing during the 2023 season, but was laid up in Ålesund.

The shipping company and the vessel had an established quality and safety management system that was designed to meet the requirements set out in Regulations of 5 September 2014 No 1191 on safety management systems for Norwegian ships and mobile offshore units. Among other things, the system was intended to ensure that the shipping company's operations met requirements relating to safety at sea and that mandatory laws and regulations were complied with.

The safety management system was developed by the consultancy firm CCOM in Ålesund. The shipping company had an agreement with the consultancy firm that meant that they would offer non-conformity, maintenance and emergency preparedness systems. As the shipping company had a limited shipping organisation, it was decided that an employee of the consultancy firm would attend to the role of Designated Person.

The safety management system was accessible to everyone on board, and the master was responsible for ensuring that the crew familiarised themselves with the system. A copy of the safety management system was available in both Norwegian and English in the mess, which was the crew's common room when they were not on watch.

1.9.1 OVERALL POLICY OF THE SAFETY MANAGEMENT SYSTEM

The overall policy dictated that the vessel should be operated in a safe and environmentally friendly manner. It emerged from the system that no job was more important than that extra time should be used for planning, so that the work operations could be performed safely and responsibly without causing injury to personnel, harm to the environment or damage to property.

The overall policy also described the need to intervene and suspend all jobs identified as representing a possible risk to people, property or the environment.

In the vessel's operational plans and procedures, it emerged that the shipping company had established specific procedures and checklists for important operations on board, such as ship safety and prevention of pollution. Furthermore, the instructions in the safety management system covered special and critical operations on board and were to be kept simple and unambiguous.

1.9.2 PROCEDURE FOR EMERGENCY RESPONSE DRILLS

The safety management system described how each crew member was required to take part in at least one boat drill and one fire drill each month while the vessel was in operation. During boat drills, the crew were to muster according to the alarm instructions, put on lifejackets and undergo training in the use of immersion suits. In addition, the MOB boat was to be lowered and the motor started.

On the previous trip, the deck crew had raised the issue of the CCTV not working and that safety would be much improved with this system in use. The minutes of the last safety meeting stated that the MOB boat could not be tested during the previous trips due to bad weather, but that it would be launched the next time they arrived at the quay. The vessel was unable to document a practical man overboard drill with the current crew prior to this trip.

1.9.3 MAN OVERBOARD (MOB) PROCEDURE

The procedure described that the general alarm was to be raised and that the vessel should be turned around. A search for the missing person should then be initiated immediately. The MOB boat should be launched and crew members should be tasked with keeping a lookout. After the procedure, the navigator on watch should also issue a MAYDAY call over the radio.

1.9.4 GEAR DEPLOYMENT PROCEDURE

The safety management system contained dedicated procedures for gear deployment and launching of buoys. The procedure states that communication must be checked with the crew member on watch on the bridge and that camera surveillance must always be activated from the bridge. In poor weather conditions, the work operation should always be performed by at least two crew members.

The following elements were listed among the risk factors:

- *There is a risk of being caught in a sink rope or pots and dragged overboard.*
- *Clothing can catch in pots, which can be dangerous if you are unable to free yourself.*
- *There must be no loose straps on lifejackets.*

- *Risk of ending up in into dangerous situations due to stress because you are in a hurry and do not have full control of the situation.*

The safety measures were listed as follows:

- *Follow procedures and exercise caution, especially during operations where there is a risk of falling overboard.*
- *Wear safety boots, lifejackets and gloves.*
- *Avoid using clothing that can easily get caught in machinery or gear on its way out of the boat.*
- *Stop the engines before performing adjustments/repairs.*
- *Adjust the speed of the boat and how fast the work must be carried out to the experience of those performing the work.*
- *Organisation of work (fixed procedures, fixed working positions).*
- *Clearing and hosing the deck.*

1.9.5 RISK ASSESSMENTS

Risk assessments are discussed in several places in the safety management system. It emerged that any work to be performed on deck, in the engine room, galley and the like, that is not covered by procedures where possible risks are assessed, should be analysed with regard to raising awareness of the risks associated with the task. The risk assessment could reveal whether doing the job differently could have reduced or eliminated the risk. The results of the risk assessments were to be documented and stored for future reference for new crew members on board and for inspection by the supervisory authorities.

The safety management system described the procedure for carrying out risk assessments in detail.

In assessing whether the work operation posed any risk, the following elements were to be taken into account:

- *What can go wrong?*
- *What are the consequences if something goes wrong?*
- *Measures to mitigate consequences.*

Thereafter, the following factors should be used in the assessment of how risks and consequences could be mitigated:

- *Do the crew have enough skills to do the job safely?*
- *Is additional training required?*
- *Do the crew have the right personal protective equipment available?*
- *Are the right/adequate tools available?*

A general risk assessment had been performed for movement on deck that included man overboard situations, and the risk reduction measures were as follows:

- *Good lighting on deck.*
- *Secure loose objects. Keep it tidy.*
- *Proper signage in place to identify hazards.*
- *Clear snow, remove ice, wipe up oil spills.*
- *Safety meeting before the start of the trip.*

1.10 Rules and regulations

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

1.10.1 SHIP SAFETY AND SECURITY ACT

The Act of 16 February 2007 No 9 relating to ship safety and security (the Ship Safety and Security Act) describes overarching requirements of a shipping company's safety management.

Pursuant to Section 7, the shipping company shall ensure that a safety management system that can be documented and verified is established, implemented and developed in the company's organisation and on board the individual ships. The purpose is to identify and manage risks and also to ensure compliance with requirements laid down in or pursuant to legislation or in the actual safety management system.

1.10.2 REGULATIONS ON SAFETY MANAGEMENT SYSTEM FOR NORWEGIAN SHIPS AND MOBILE OFFSHORE UNITS

The Regulations of 5 September 2014 No 1191 on a safety management system for Norwegian ships and mobile offshore units were adopted under the legal authority of the Ship Safety and Security Act and implement the International Safety Management Code (ISM) in Norwegian legislation.

According to the ISM Code Part A, 1 General, section 1.2.2, the company's safety management objectives should, inter alia:

1. *provide for safe practices in ship operation and a safe working environment;*
2. *assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards; and*
3. *continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.*

1.10.3 REGULATIONS ON THE WORKING ENVIRONMENT, HEALTH AND SAFETY OF PERSONS WORKING ON BOARD SHIP

The objective of the Regulations of 1 January 2005 No 8 concerning the working environment, health and safety of persons working on board ships is to ensure that work and off-duty time on board is arranged and organised so that the safety and physical and mental health of those working on board is ensured in accordance with the technological and social development of society.

Section 2-2 sets out a requirement for carrying out risk assessments, including that:

(1) Hazards on board shall be identified. When the hazard has been identified, an assessment of the risk represented by the hazard shall be made. Such risk assessment shall be made on a regular basis and:

a. *whenever new working equipment or new technology is introduced, and*

b. *whenever other modifications are made to the organisation or planning of work, which may affect the health and safety of persons working on board.*

Section 6-1. The cooperation of persons working on board

Planning and evaluation of the working environment and the implementation of necessary preventive measures shall take place in cooperation with the persons working on board.

Section 6-3. The right of persons working on board to stop hazardous work

(1) If work, in the opinion of a person working on board, cannot continue without a risk to life or health, that work shall be stopped in accordance with section 5-7 first paragraph. The person working on board shall as soon as possible notify the master, who shall decide whether work is to continue.

(2) A person working on board who stops work as provided in the first paragraph shall not be liable for any damage or loss resulting from such stoppage.

1.10.4 REGULATIONS NO 660 OF 13 JUNE ON THE CONSTRUCTION, EQUIPMENT AND OPERATION OF FISHING VESSELS OF 15 M IN LENGTH AND OVER

Section 6-4. Bulwarks, rails and guards

(1) Efficient bulwarks or guard rails shall be fitted on all exposed parts of the working deck and on superstructure decks if they are working platforms. The height of bulwarks or guard rails above deck shall be at least 1 m. Where this height would interfere with the normal operation of the vessel, a lesser height may be approved by the Norwegian Maritime Authority, though not less than 600 mm.

1.11 Supervision of vessel owners and vessel

The NMA carried out supervision and certification of the vessel and the shipping company. The certificate requirements under the ISM Code dictate that two statutory certificates shall be issued; a Safety Management Certificate for the vessel and a Document of Compliance for the shipping company. Both the Safety Management Certificate and the Document of Compliance is valid for five years, with audits every five years, in addition to an intermediate audit between the second and third year of the certification period.

In the NMA's joint reminder to the fishing fleet, published on 8 March 2019, it emerged that the vessels to be audited *'must be manned, berthed and be in operational condition during the audit. For example, they cannot be in a workshop and be unmanned.'* After consultation with the NMA, it has been confirmed that by 'operational condition' they mean the number of crew the vessel usually carries during fishing operations and not limited to the crew specified in the minimum safe manning document.

1.11.1 SAFETY MANAGEMENT CERTIFICATE

The vessel was first certified according to the ISM Code on 24 January 2017 and issued an intermediate Safety Management Certificate. On 20 October 2017, the NMA carried out an initial audit of the vessel. during which only the master and chief engineer were present. The audit resulted in five findings identified by the supervisory authority.

On 25 September 2020, an interim audit was carried out on board the vessel. During this audit, the crew consisted of the master, chief officer, chief engineer and factory manager. After the audit, 23 findings were identified by the supervisory authority. One non-conformity was considered so serious that the audit was terminated. This non-conformity was related to the master not being fully familiar with the company's safety management system, in addition to the fact that a mandatory drill had not been carried out that had been included as a condition in a permit to operate when the vessel was to undergo a yard stay. The audit was resumed on 28 September after the supervisory authority had received a plan for downgrading the serious non-conformity. From the audit report it emerged that the lead auditor had the impression that the vessel had a great potential for improvement in terms of safety culture, motivation and attitudes.

A supplementary audit was carried out on 6 January 2021 as a consequence of the findings made in the interim audit. The crew were represented by the master and the chief engineer only. Four non-conformities were identified and two observations made during the audit. The non-conformities relevant to this investigation concerned that the safety management system had to be written in a language everyone on board could understand, and that boat and fire drills conducted could not be verified in the electronic system.

A renewal audit of the Safety Management Certificate was carried out on 25 September 2022, during which the master, mate, chief engineer and three fishermen were present. The supervisory authority identified a total of six findings, none of such a serious nature that a supplementary audit was needed. In 2022, the NMA had a special focus on understanding risk and that risk assessments should be used as a management tool on board. It was also observed that an adequate causal analysis is not always included in the non-conformity reports.

A supplementary audit was carried out on 29 March 2023 as a consequence of the accident on 30 January 2023. There were a total of 21 crew members on board, and this audit was thereby the first to be carried out with a full crew. A total of nine findings were identified, but none of these were serious enough for the Safety Management Certificate to be revoked. One finding alone included 13 observations that concerned the technical condition of the vessel. The number of findings, combined with their severity, led the NMA to order another supplementary audit to be carried out within three months.

The NMA's audits are risk-based, where the scope of supervision is considered against previous history and findings made during audits. A mandatory audit is limited in scope, while a supplementary audit may include selected elements or all elements of the ISM Code. 'Hunter' was registered with a high risk in the NMA's register, which resulted in a complete review of the system.

All audits, except the one carried out on 29 March 2023, took place without the vessel being fully manned. The audit was carried out while the vessel was berthed, and none of the recorded procedures were demonstrated by the crew.

1.11.2 DOCUMENT OF COMPLIANCE

The shipping company had a Document of Compliance for safety management, which documented that the company complied with the requirements of the ISM Code.

The shipping company has been audited every fifth year in addition to an intermediate audit between the second and third year of the certification period, and some non-conformities have been identified, most of which related to the operation of the system.

Based on a supplementary audit of the vessel, the shipping company was also required to undergo a supplementary audit. The audit was carried out between 8 and 12 June 2023. In total, 22 findings were made that resulted in 5 non-conformities and 3 observations. As a result of serious non-compliance with the requirements of the ISM Code, the Document of Compliance was revoked.

In practice, this entailed a ban on the use of the company's vessels covered by the ISM Code. The shipping company has communicated to the NSIA that the NMA's decision has been appealed. At the same time as the appealed decision is being processed the shipping company subsequently also corrected the non-conformities,

1.11.3 TRADING AND SAFETY CERTIFICATE FOR FISHING AND WHALING/SEALING VESSELS

The trading certificate for fishing and whaling/sealing vessels is valid for five years, with certification every five years and an interim inspection between the second and third year of the certification period.

The NMA carried out an audit when it issued a new certificate in December 2021, resulting in a total of 17 orders. Some of the issues identified were lack of documentation of occupational health and safety meetings, lack of crew certificates, undocumented risk assessments, training manual not available in English, faults in the fire alarm system, emergency generator/lighting not working, maintenance not performed on MOB davit or expired life-saving appliances, as well as faults in fire extinguishing equipment. Based on the severity of the non-conformities, deadlines were given for taking action prior to operation. Based on this, the NMA classified the vessel in the red risk category, where an expanded checklist was to be used in the future when renewing the trade certificate. The shipping company has subsequently reported that the orders that were issued have been remedied.

In 2021, the vessel also underwent an initial inspection for certification of the working and living conditions on the fishing vessel. The NMA issued an order concerning lack of documentation of regular risk assessments.

1.12 Regulation of future snow crab fishing in the Barents Sea

Regulation 19 December 2014 no. 1836 on prohibition of catching snow crab Section 1 states that "It is prohibited for Norwegian and foreign vessels to catch snow crab in Norwegian maritime territory and internal waters, and on the Norwegian continental shelf. For Norwegian vessels, the ban also applies to other countries' continental shelves". It further follows from Section 3 of the same regulation that "Notwithstanding the prohibition in Section 1, vessels with a snow crab permit according to the licensing regulations may catch and land up to 717 tonnes of snow crab outside territorial waters in 2023".

The current arrangement is currently regulated in the form of a shared quota that can be caught within a given time period.

The NSIA has been informed that some participants in this industry consider the current snow crab fishing arrangement to be challenging. It has been mentioned that crew-intensive and seasonal Olympic fishing under a shared quota results in an unnecessary competitive climate between the vessels.

In January 2023, the Ministry of Trade, Industry and Fisheries commissioned the Directorate of Fisheries to consider future regulation of snow crab fishing on the Norwegian continental shelf in the Barents Sea. The proposed regulation was to be followed up in the form of dialogue meetings between the Ministry, the Directorate of Fisheries, the Norwegian Fishermen’s Association, the industry organisation Fishboat, the Norwegian Seafood Federation and The Norwegian Fishermen`s Sales Organization.

Changes in the way snow crab fishing is regulated was to take place on the basis of a general consultation. The consultation would address proposals that take into account the profitability of the vessels, the environment and gear conflicts, as well as facilitate new modes of operation between land and sea.

The following regulation options were included in the assignment from the Ministry to the Directorate of Fisheries:

1: Traditional closure of snow crab fishing.

2: Partial closure, where the total quota is divided between an open and a closed group, with qualification requirements for the closed group.

3: Registration scheme, with vessel quotas and last departure date before redistribution.

In the consultation paper, the Directorate of Fisheries could, if they considered it appropriate, consider further alternative ways of regulating participation. The consultation paper was to contain a separate assessment of whether investments in vessels and equipment before the cut-off date could form the basis for participation in a possible closed group, as well as a proposal to extend the closure period from 1 July to 31 December. The latter proposal was based on scientific advice from the Institute of Marine Research.

After the consultation, on 26 October 2023 the Norwegian Directorate of Fisheries submitted its final proposal for regulation of participation in catching snow crab to the Ministry of Trade, Industry and Fisheries[4].

1.13 Notifice on safety-critical factors

On 7 February 2023, the NSIA issued the following notification to the parties involved:

In connection with the ongoing investigation of the fatal accident on board the fishing vessel, the Norwegian Safety Investigation Authority (NSIA) has identified safety-critical conditions that must be addressed immediately. Please note that the NSIA is in the early stages of the investigation. The NSIA has conducted examinations on board 'Hunter' and interviewed the crew.

There are three safety-critical findings that the NSIA considers warrant notification.

Safety-critical finding relating to language skills.

The shipping company stated that English was the working language on board 'Hunter'. Several of the crew had such poor English skills that the NSIA believes it has been difficult to perceive both work procedures and safety instructions to enable the work to be carried out in a responsible and safe manner. This is especially true for personnel who are assigned a role in emergency situations.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority ensure that the shipping company Havøy Kystfiske A/S sees to it that the crew of the fishing vessel 'Hunter' have the English skills needed to maintain safe operations.

Safety-critical finding relating to the transport of bait.

Before hauling pots, the crew had to prepare bait. This process started with the crew having to transport the bait in buckets from the afterdeck over the conveyor belt and to the forward working deck. This meant that the crew had to move forward on the belt with little or no physical protection against falling overboard.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority ensure that the shipping company Havøy Kystfiske A/S sees to it that the work process of transporting bait does not expose the crew to the risk of falling overboard.

Safety-critical finding relating to the work process of attaching pots to line.

[4] *https://www.fiskeridir.no/Yrkesfiske/Dokumenter/Hoeringer/forslag-til-endringer-i-reguleringen-av-deltakelsen-i-fangst-av-snokrabbe (Only available in Norwegian)*

The deployment process entailed two fishermen on the afterdeck having to work on an unsecured deck with a high risk of falling overboard. One of the fisherman prepared pots from the conveyor belt, and the other attached the pots to the line that moved backwards and out of the vessel far aft. Physical contact with the line when attaching the pots posed a risk of being dragged along. Falling overboard in the Barents Sea with the prevailing Arctic conditions constitutes a high probability of loss of life.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority ensure that the shipping company Havøy Kystfiske A/S secures the work process of setting the line on the afterdeck to eliminate the risk of falling overboard.

1.14 Previous incidents/accidents

1.14.1 PREVIOUS INCIDENTS ON BOARD 'HUNTER'

On 30 April 2020, a fisherman fell overboard from 'Hunter' in an accident that bears many similarities with this accident. The fisherman got caught on the set line and was unable to free himself. He fell overboard through the aft setting hatch and the crew managed to quickly cut the set line. A lifebuoy was thrown and one of the crew put on an immersion suit and managed to attach a harness to the fisherman lying in the sea. Both were then hoisted aboard. The skipper made an assessment and decided not to use the MOB boat, as it would take 5–10 minutes extra to launch it. The fisherman who fell overboard sustained only minor injuries. The safety line was installed on the working deck but was not in use. It emerged from the shipping company's non-conformity system that a new review was required of the safety procedures on board, with reference to a decision to use the fitted safety line in future.

No risk assessment was conducted of the work operation on the afterdeck based on lessons learned and no corrective measures or other physical barriers were implemented after this accident, except that it was made clear to the crew that the safety line should be used, in addition to general vigilance. The feedback from a majority of the company's crew was that they objected to using the safety line. The reason was that the safety line was more of an obstacle than an advantage from a safety perspective.

1.14.2 SIMILAR INCIDENTS COVERED BY INVESTIGATIONS

1.14.2.1 Arctic Pioneer

In report 2017/01 on the fatal accident on board the fishing vessel 'Artic Pioneer' in which a crew member died in connection with the deployment of crab pots, the investigating authority pointed out the following:

The frequency and content of theoretical and practical emergency response training had not been sufficient either. Nor had the shipping company established a standard for clothing on the working deck and no lifejacket was used. The fisherman would probably had a better chance of surviving if he had worn a lifejacket and/or buoyancy clothing that provided protection against hypothermia.

The shipping company established several risk reduction measures and the NSIA therefore issued no safety recommendations.

1.14.2.2 Øysund

In report no 2018/03 on the accident on board the wellboat 'Øysund' in which a crew member fell overboard, the investigating authority pointed out that no documented guidelines or procedures

had been established for traffic on deck, or for the use of personal protective equipment when spending time or working on deck.

The investigation authority submitted two safety recommendations in connection with the report. The following safety recommendation is relevant to this accident:

> *The accident with Øysund on 16 November 2017 occurred when a person walked on the main deck in rough sea. The person most likely fell overboard as a wave broke inwardly. The investigation has shown that the wellboat company had not established documented guidelines or routines for the use of means of communication or personal safety equipment when staying or working on deck.*

The Accident Investigation Board Norway recommends Sølvtrans to undertake a documented risk assessment of the dangers of traffic on the main deck and implement procedures and guidelines for this on board.

1.14.2.3 Hovden Viking

In report no 2022/02 on an occupational accident on board the fishing vessel 'Hovden Viking' in which a crew member fell overboard as he was climbing onto the railing in an attempt to release a buoy, the NSIA pointed out the following:

> *In this incident, the railing, which is a physical safety barrier, was used as a work tool. For the work to be carried out in the safest possible way, it is important that the shipping company focuses on the crew's understanding of risk in their work routines. They should also take into account unexpected events.*

1.14.2.4 Multi Vision

In report no 2022/05 on the accident on board the service vessel 'Multi Vision' in which a crew member fell into the water and was crushed between the vessel and a sea cage in connection with mooring of the vessel, the NSIA pointed out the following:

> *Arrival and mooring were considered routine jobs, and the risk of falling into the water was thus normalised. As a result, there was insufficient awareness about the risks that the operation entailed, both in the onshore organisation and among the crew on board the vessel. It is important that risk assessments are carried out for all tasks that could entail a risk and that risk reduction measures are implemented into procedures and work operations.*

1.14.2.5 Titran

In report 2022/09 on the accident on board the cargo vessel 'Titran' in which a crew member fell overboard from the deck hatches and into the sea, the NSIA pointed out the following:

> *The risk associated with routine tasks becomes normalised in the individual over time, resulting in the risk gradually being ignored or not perceived. Shipping companies and other stakeholders must therefore consider the need for risk assessments and safe job analyses in all areas of operation that may entail risk, including those defined as routine operations.*

1.15 Additional information

The Government has adopted a vision zero policy[5] for fatal and serious injuries at sea. The NMA was commissioned by the Ministry of Trade, Industry and Fisheries to provide the scientific basis for the vision and will continue to work on measures that can result in a concrete action plan. This will apply to all vessels subject to the NMA's administrative and supervisory responsibility. The action plan must contain specific measures that must be feasible and effective.

Fall incidents were the NMA's defined focus area in 2023. An additional checklist was prepared to be used in every supervision of trading certificates/Cargo Ship Safety Construction Certificate (CCC) (cargo and fishing vessels) and passenger certificates, and also during unscheduled supervisions. The checklist was extensive and included inspection of exposed work areas and a review of the company's prepared risk assessments and written procedures. On the NMA's website, shipowners and masters were encouraged to review the checklist in the course of 2023. There is no information to suggest that this was carried out on board 'Hunter'.

The NMA did not carry out an inspection on board 'Hunter' with a particular focus on fall accidents, which is probably due to the fact that the certificate renewal had not been carried out in 2023, in combination with the accident occurring early in the year.

1.16 Implemented measures

The shipping company has taken several measures after the accident to ensure safer working conditions on board during active fishing.

The conveyor belt along the vessel's port side has been fitted with higher railings to prevent crew from falling overboard when moving on the belt; see Figure 10.

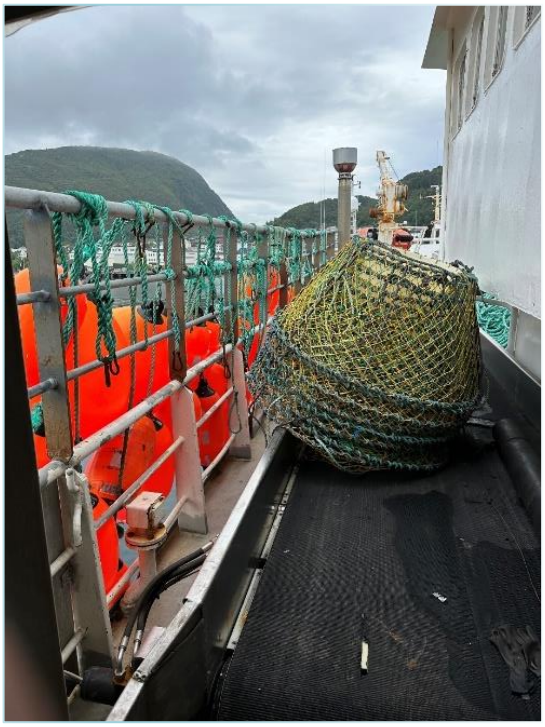

Figure 10: Higher railings welded on top the old railings along the conveyor belt on the port side. Photo: NSIA

[5] *Vision zero at sea: 'Everyone should come home from work at sea' – regjeringen.no (in Norwegian only)*

On the aft working deck, a steel structure has been welded on, which the fisherman attaching the pots to the set line should stand behind when working; see Figure 11.

Figure 11: Steel barrier on the afterdeck to prevent falling overboard. Photo: Shipping company

The fisherman attaching the pots to the set line must also use a safety line that must be applied at all times during the deployment.

For faster notification to the wheelhouse, a notification button has been installed that triggers the MOB alarm directly in the vessel's chart system. An emergency stop button for the conveyor belts has also been installed in the same location.

Figure 12: MOB alarm. Photo: NSIA

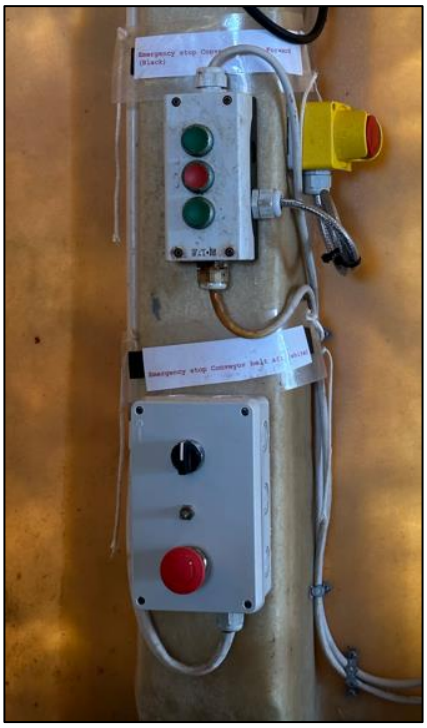

Figure 13: Emergency stop button, conveyor belt. Photo: NSIA

The emergency stop button for the conveyor belts was previously placed on the starboard side of the set line, which meant that the fishermen had to pass under the line to press the button. The

buttons have been moved to the port side of the set line, which is the fishermen's usual position during deployment; see Figure 12 and Figure 13.

As regards personal protective equipment, the fisherman who attaches the pots to the set line also wears a lifejacket with an AIS transmitter that is automatically activated if it comes into contact with water. The AIS signal is plotted directly in the vessel's chart system and will make it easier for the crew to find the person who has fallen overboard.

The shipping company has acquired a SULA rescue sling[6] that can be used to retrieve a person from the water without using a MOB boat. It is intended for conditions where launching a MOB boat is not considered safe due to high seas.

[6] *Patented rescue sling from Sula Vekst AS for retrieving a lifeless person from the sea.*

2. Analysis

2. Analysis

2.1 Introduction

The accident on board happened in connection with a routine operation that the fishermen performed on a daily basis. Many accidents happen in connection with routine operations, and it is important to identify the factors that played a role in this incident to be able to prevent similar accidents.

The analysis starts by assessing the sequence of events and the immediate causes. Survival aspects, work and movement on the afterdeck are also considered in addition to the shipping company's safety management and an assessment of the rescue operation. The analysis concludes by looking more closely at the NMA's role as the supervisory authority, and framework conditions for fishing.

2.2 Sequence of events

Examinations of the set line after the accident provided no indication of what had happened. It is likely that the fisherman either got caught on the set line or that a pot dragged him overboard through the setting hatch.

Working conditions on the afterdeck in high seas and on slippery surfaces, without any physical barriers to prevent the crew from falling overboard, constituted a safety issue. The task of attaching crab pots to the set line entailed a risk that had to be dealt with continuously, quickly and required concentration. The NSIA considers that the working conditions on the afterdeck warrant criticism. This is discussed further in section 2.4.

The fisherman who reported the accident and the chief officer had no common language understanding in that they had different mother tongues and a poor command of English. When the fisherman tried to alert the chief officer in the wheelhouse, he did not understand what the fisherman was saying. The chief officer stopped propulsion immediately, but it was not clear to him why he had to stop. The chief officer accompanied the fisherman to the afterdeck to find out what had happened.

The CCTV did not work and the chief officer thereby had no possibility to monitor the working conditions on the afterdeck. This is included in the assessment of work procedures in Appendix B.

The NSIA estimates that the chief officer spent at least two minutes on the afterdeck and foredeck before returning to the wheelhouse to flag the position in the chart system. In addition, it took about 15–20 seconds for the fisherman on the afterdeck to get to the wheelhouse to alert the chief officer.

When the chief officer alerted the skipper, he used the phrase 'big alarm'. The skipper had to get a new explanation of what had happened when he came up to the wheelhouse. He was not made aware that the chief officer himself had spent time on deck before the MOB position was flagged in the chart system, which represented a position much further south than where the fisherman had actually fallen overboard. The consequence of incorrect flagging was that they completed the turn to starboard and went southerly before they turned around to the west side of the track line. The misunderstanding surrounding the marked flag was linked to communication problems. Lack of prompt notification and communication problems caused delays in the search. The skipper was also informed that a lifebuoy had been thrown into the sea. This was later cleared up as a misunderstanding.

The skipper's priorities in the critical phase of the rescue operation were to initiate a search and not notify the JRCC, as it seemed obvious that it would take a long time before anyone would be able to assist them. This will be discussed in more detail in section 2.3.

In their dialogue with ships the JRCC takes into account that the crew must prioritise their own search. The NSIA would like to point out that the JRCC must be regarded as a resource that can relieve the bridge team by, among other things, contacting other ships in the vicinity.

2.3 Rescue and survival aspects

There are numerous factors that have a bearing on an individual's chances of survival in water. They include the water temperature, clothing, the use of buoyancy aids, state of health and time in the water. The NSIA has been informed that the missing person could swim and was in good shape. No medical information has emerged about the missing person that may have had a bearing on the outcome of the accident.

When the fisherman fell into in the sea wearing work clothes and a flotation device with 50N buoyancy, the fisherman had little chance of survival, unless the rescue operation had been carried out quickly. The flotation device was not suitable for this type of operation. The fisherman was also not equipped with personal rescue equipment that would allow him to be easily located. According to Table 1 in section 1.8.2, a sea temperature of around 4 degrees and a fresh gale will lead to hypothermia within 30 minutes. Large waves and cold water shock may also have affected the fisherman's ability to keep his airways free of water and impaired his survival time. The fisherman may also have been injured in connection with falling overboard, which may have reduced his ability to keep his head above water.

There were no other vessels or rescue crews nearby to assist in the initial rescue phase. The only way to survive such an accident would be through a fast response by the vessel's crew.

Snow crab fishing takes place in an area that is particularly prone to bad weather at that time of year; the vessels operate right up to the edge of the sea ice and there are few other vessels nearby that can assist in a rescue operation.

The MOB boat met the regulatory requirements, but the investigation has shown that it was not appropriate to use it due to the weather and sea conditions. The NSIA understands that the master decided not to use the MOB boat under the prevailing conditions, but considers it problematic that the vessel could not use the MOB boat that met the applicable requirements in an emergency. The regulations impose the same requirements on MOB boats whether the fishing takes place in coastal areas during the summer or in exposed waters. The shipping company has, acquired a SULA rescue sling as a supplement to the MOB boat. This type of sling is usually used for ships under 24 metres in length that are not required to have their own MOB boat.

The NSIA believes that the requirements for life-saving appliances for vessels operating in these areas should be strengthened. In some sea states, it is not possible to use the MOB boat, and no or weak absolute regulatory requirements are in place relating to the use of life-saving appliances when working on deck. The shipping companies are required to conduct a risk assessment for hazardous work operations, and then draw up appropriate safety measures themselves.

The NSIA considers that the minimum requirements for life-saving appliances are not balanced against the risks involved in the work performed and submits a safety recommendation to the NMA on this point.

2.4 Work and movement on the afterdeck

The NSIA notified of safety-critical conditions on board, including findings relating to the work process of attaching pots to the set line; see section 0.

There were no physical barriers against falling overboard on the aft working deck, and the design was based on both the set line and the pots moving freely out of the setting hatch without encountering obstacles. This design was problematic as it did not meet the minimum requirement for the height of 1,000 millimetres. Where this height would interfere with the normal operation of the vessel, the NMA may approve a lesser height, though not less than 600 millimetres; see section 1.10.4. The shipping company had not applied for an exemption to the height requirement, and the setting hatch on 'Hunter' had no barriers in that the opening went all the way down to the deck. Neither the shipping company nor the NMA identified non-fulfilment of applicable regulations during the conversion phase or during subsequent inspections. The purpose of railings is to protect the crew from falling overboard.

Working on this deck is considered risky, even in calm conditions. It was an intense work situation where the fisherman had to attach the pots to the set line approximately every ten seconds with about a one second margin in rough seas. The hazards included a risk of the fishermen getting their fingers trapped at the end of the loop where the set line was doubled, the sling hook getting caught in the straps of the work vest and the fishermen placing themselves incorrectly in relation to the pots that were on their way out of the setting hatch.

Neither the Directorate of Fisheries nor the NMA imposes specific requirements on how fishing operations are performed, and the solutions vary from one vessel to the next. It is possible for the supervisory authorities to identify design flaws and dangerous work operations during supervision or certificate renewals, but as these are carried out at the quay, it is difficult to form a correct picture of risks involved in the fishing operation.

After the accident, the shipping company implemented immediate measures to increase safety on the afterdeck. A steel barrier was installed that the fishermen could stand behind when they attached the pots, in addition to the use of a safety line. An alarm was installed that could be activated in the event of a man overboard situation. The NSIA believes that the measures taken do not change the biggest design flaw: a working deck with no adequate physical barriers against falling overboard. The shipping company considered that the deployment arrangement was safe and referred to how the work carried out on the afterdeck is deemed to be within the range of acceptable risk. The NSIA is of the opinion that the measures taken by the shipping company described in section 1.16 still do not address safety to a sufficient extent. The NSIA therefore issues a safety recommendation to the effect that the NMA must ensure that the shipping company secures the work process on the afterdeck during deployment of the line.

The safety of the working deck must be seen in the context of general safety on board. This will be discussed in more detail in section 0.

2.5 The shipping company's safety management system

The shipping company's safety management system apparently focused on good working and safety conditions, but the investigation has shown that remarkably little of this was reflected in the operation of the vessel.

The NSIA believes that the shipping company has a potential for improvement when it comes to fulfilling its role and duty as shipowner. The shipping company took care of the technical operation of the vessels, in addition to hiring personnel and follow up the safety management system. No good solutions had been established for a deputy who could carry out these tasks in case of absence. When the accident occurred, the follow-up of the safety management system was taken care of by the designated person that had no knowledge of the day-to-day operation of the vessel. The shipping company's overall policy in the safety management system was not complied with as they neither had ownership nor sufficient understanding of the system.

In most cases, a lack of expertise in some areas can be remedied by using external consultants. In cases where consultants are used to the extent that the shipping company is unable to maintain its own policy without assistance, this will pose a safety problem. Examples of this were procedural descriptions with major shortcomings in some areas and risk assessments that had not been carried out with the necessary degree of objectivity. See also Appendix B for more details about the investigation of the shipping company's safety management system.

The NSIA believes that a good safety management system that reflects operations, risks and expectations in combination with familiarisation and practical exercises is and remains a prerequisite for safe operations. This was not the case for the shipping company in question, and the NSIA submits a safety recommendation to the shipping company on this point.

2.6 The NMA's supervisory function

Inspections and audits usually constitute a safety barrier in that shortcomings can be identified and corrected by the shipping company. Supervision has identified many non-conformities relating to 'Hunter' in recent years. The shipping company has closed these non-conformities by implementing measures. Many non-conformities have been recurring without the supervisory authority addressing this.

Audits were carried out during periods when the vessel had not been in regular operation, as the annual dates on the certificate are outside the snow crab fishing season. Of the five audits of the vessel before the accident, only one was attended by crew corresponding to that specified in the minimum safe manning document. This represented only a small part of the actual crew of 21 the vessel carried during active fishing. An audit of the safety management system on board with the entire crew present could have revealed that the crew did not have sufficient knowledge of the vessel's safety management system and that some had challenges relating to a common language understanding. The audits were conducted in Norwegian, but the interviews with foreign nationalities were conducted in English. During the audits there were few foreign workers on board.

The investigation has shown that the NMA's supervision has not been in accordance with its own guidelines; see section 1.11. This represents a safety problem, and the NSIA submits a safety recommendation to the supervisory authorities on this point.

2.7 Framework conditions for snow crab fishing

The investigation has shown that the framework conditions for snow crab fishing, as it is currently regulated, can adversely impact safety. The snow crab fleet compete to take the biggest possible share of the total quota as quickly as possible. This may contribute to shipping companies and fishing vessels taking risks that could compromise safety. The Directorate of Fisheries is not responsible for maritime safety in its exercise of authority when following up snow crab fishing. At the same time, the NMA, which is responsible for following up safety, has no responsibility for framework conditions for fisheries. How framework conditions are established may affect how fishing is conducted and carried out in practice, which in turn affects safety on the individual vessels and in the industry in general.

When two authorities regulate different framework conditions for an industry in two different administration areas, it could affect safety.

Snow crab fishing is relatively new in the Norwegian context, and the vessels are usually converted from other types of fishing vessels. Uncertain framework conditions may result in low willingness to invest on the part of the shipping companies, and temporary solutions, as the conversion costs are high.

Accidents and time pressure also occur on fishing vessels with allocated quotas in other fisheries. At the same time, quota-based fisheries provide a set framework for fishing. This in turn can give the crew, the ship's management and shipping company a certain predictability and sense of security that does not challenge them to make choices they would not normally make, at the expense of safety.

Since the Directorate of Fisheries has put forward a recommendation to the Ministry of Trade, Industry and Fisheries regarding, among other things, quota-based fishing for snow crab, no recommendation is put forward in this area.

3. Conclusion

3. Conclusion

3.1 Main conclusion

The accident occurred when two fishermen were working on an unsecured working deck in bad weather without physical barriers against falling overboard. The fisherman who was attaching pots to the set line fell overboard and the other fisherman notified the chief officer of the accident.

During the rescue operation, language misunderstandings caused delays in the rescue work. The misunderstandings meant that the search was initiated in a different direction of where the fisherman likely had fallen overboard. Lack of practical training and drills was probably the reason why no lifebuoy was thrown to the fisherman who had fallen overboard.

The crew and the shipping company both considered the work situation on the afterdeck to be a routine operation. A risk assessment had been carried out for parts of the work process, but it had major shortcomings. The shipping company's failure to identify the hazardous work operation posed a safety problem. Nor did the NMA identify the hazardous work situation or the lack of physical barriers against falling overboard.

3.2 Investigation results

- The minimum requirements for rescue equipment were not balanced against the risks involved in the work performed. It was not justifiable to use the MOB boat due to heavy weather conditions, and no or weak absolute regulatory requirements were in place relating to the use of life-saving appliances when working on deck. Nor was it possible to locate the fisherman who had fallen overboard.
- The afterdeck was not secured against falling overboard. The deck lacked non-slip protection and work entailed movable set line and crab pots. The arrangement had a fundamentally weak design with a one-second margin to attach the crab pots to the set line.
- The NMA's audits were carried out at a time when the vessel was not manned for operations. Thus, the supervisory authority did not have an adequate basis for identifying language problems or the crew's lack of knowledge about the vessel's rescue equipment.
- Competitive fishing under the current framework conditions may have contributed to heightened risk in the work. The snow crab fleet competed to take the biggest possible share of the total quota as quickly as possible. This may have contributed to shipping companies and fishing vessels taking risks that could compromise safety.
- The shipping company's safety management system did not work in practice and had major shortcomings, as the company did not comply with the obligations it had undertaken. The shipping company had set aside limited resources to work with the safety management system and adequate routines had not been established for a substitute in case of absence. The designated person who was responsible for monitoring the safety management system was a hired consultant who had no knowledge of the practical operation. As a result, the shipping company's policy was not complied with in practice. Procedural descriptions had major shortcomings in some areas, and risk assessments had not been carried out with the necessary degree of objectivity.

4. Safety recommendations

4. Safety recommendations

The Norwegian Safety Investigation Authority submits the following recommendations[7] for the purpose of improving safety at sea:

Safety recommendation MARINE No 2024/01T

On 30 January 2023, the snow crab boat 'Hunter' was at the fishing grounds in the Barents Sea, when a fisherman died after falling overboard during the deployment of crab pots.

The investigation has shown that the minimum requirements for life-saving appliances are not balanced against the risks involved in the work. It was not justifiable to use the MOB boat, and no or weak absolute regulatory requirements were in place relating to the use of life-saving appliances when working on deck. Nor was it possible to locate the fisherman who had fallen overboard.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority implement measures that ensure a balance between the requirements for life-saving appliances and the expected working conditions for snow crab fishing.

Safety recommendation MARINE No 2024/02T

On 30 January 2023, the snow crab boat 'Hunter' was at the fishing grounds in the Barents Sea, when a fisherman died after falling overboard during the deployment of crab pots.

The investigation has shown that work on the aft deck was not secured with physical barriers against falling overboard. This, in combination with a lack of anti-slip protection and a movable set line, increased the risk of falling overboard.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority ensure that the shipping company Havøy Kystfiske AS establishes barriers so that the probability of falling overboard is reduced.

[7] The investigation report is submitted to the Ministry of Trade, Industry and Fisheries, which will take the necessary steps to ensure that due consideration is given to the safety recommendations.

Safety recommendation MARINE No 2024/03T

On 30 January 2023, the snow crab boat ‘Hunter’ was at the fishing grounds in the Barents Sea, when a fisherman died after falling overboard during the deployment of crab pots.

The investigation has shown that the shipping company’s safety management system did not function as a safety barrier, as the company did not comply with the obligations it had undertaken. Procedural descriptions had major shortcomings, and risk assessments had not been carried out or was not undertaken with the sufficiently degree of objectivity.

The Norwegian Safety Investigation Authority recommends that Havøy Kystfiske AS implement measures in its safety management to achieve safe workplaces on board the company’s vessels.

Safety recommendation MARINE No 2024/04T

On 30 January 2023, the snow crab boat ‘Hunter’ was at the fishing grounds in the Barents Sea, when a fisherman died after falling overboard during the deployment of crab pots.

The investigation has shown that the Norwegian Maritime Authority’s audits were carried out when the vessel was not manned for operations. Thus, the supervisory authority did not have an adequate basis for identifying language problems or the crew’s lack of knowledge about the vessel’s rescue equipment.

The Norwegian Safety Investigation Authority recommends that the Norwegian Maritime Authority in greater degree follow up its own guidelines when audits are carried out on board, so that ships that are audited are in the operational condition expected during active fishing.

Norwegian Safety Investigation Authority
Lillestrøm, 29 January 2024

Appendices

Appendix A Details of the vessel and the accident

Vessel	
Name	Hunter
Flag state	Norway
Classification society	Rina class for hull and machinery. Otherwise unclassed.
IMO number / call sign	8906949/LKUA
Type	Fishing vessel
Build year	1989
Owner	Havøy Kystfiske AS
Operator / Responsible for ISM	Havøy Kystfiske AS
Construction material	Steel
Length/ length overall	38.609 metres/ 44.90 metres
Gross tonnage	877.0 BT
Minimum safe manning	5
Voyage	
Port of departure	Båtsfjord
Port of arrival	Tromsø
Type of voyage	Fishing in the Barents Sea
Cargo	Snow crab
Persons on board	21
Information about the accident	
Date and time	30 January 2023 at ca. 18:00.
Type of accident	Person overboard
Location/position where the accident occurred	Barents Sea
Place on board where the accident occurred	Aft working deck
Injuries/fatalities	One fisherman died
Damage to ship/the environment	No
Ship operation	Fishing
At what point in the voyage was the vessel	Under way
Environmental conditions	Eastern gale and snow showers

Appendix B Further investigation of the shipping company's safety management system

The safety management system on board was available in both English and Norwegian, but the investigation shows that training and reviews were not adequately performed, even though the crew had signed to confirm that it had been reviewed. The NSIA's interviews revealed major shortcomings in the crew's knowledge, and several crew members had little or no understanding of the purpose of the system or how it should be used. They mainly relied on oral transfer of knowledge and practical demonstration of tasks. A review of the safety management system revealed major shortcomings in the procedural descriptions. Lack of written procedures was replaced by experience-based methods, and the shipping company lost control of how the crew performed the tasks on board. A closer review of significant parts of the safety management system follows below.

RISK ASSESSMENT

The shipping company had identified the risk of falling overboard from the afterdeck through the setting hatch and had experienced a similar accident three years earlier. They had not sufficiently addressed the problems, however.

The company had carried out a general risk assessment, most recently revised in September 2022. It included hazards when moving on deck and the risk of falling overboard. Movement on the afterdeck was not assessed as a separate risk. The work operation on the afterdeck had also not been risk assessed, but a risk assessment had been carried out of the first phase of the deployment. This phase was considered safe and no risk reduction measures were implemented. The phase that involved attaching pots to the set line was not part of the risk assessment. In the NSIA's view, it was this phase that posed the greatest risk.

The NSIA believes that an objective and thorough risk assessment would have revealed that the work operation on the afterdeck was not safe.

WORK PROCEDURES

Several of the shipping company's work procedures were not complied with or had shortcomings. Below is a selection of procedures of relevance to this accident:

- The procedure for fishing dictated that the CCTV camera on the afterdeck should always be in use during deployment to enable the navigator on watch to monitor the work operation. The shipping company regarded the CCTV as a safety barrier during active fishing, and thus a prerequisite for carrying out the fishing operations. The CCTV system did not work on the day of the accident.
- The procedure relating to the work operation on the afterdeck was brief and did not cover simple descriptions of what tasks should be performed, how or by whom, or of the risks that should be taken into consideration.
- The man overboard procedure had shortcomings in several areas, and the crew had not received training in the content of the procedure. Position data show that time was lost as they searched in a different direction than where the fisherman probably had fallen over board. The NSIA's assessment is that a lot went wrong during these critical minutes from the accident occurred until they searched where they assumed that the fisherman had fallen overboard.

- The shipping company had previously tried to get the crew to use a safety line during deployment. The safety line mounted on the afterdeck was not used and did not work. Nor was there any description of this in the management system, and the company did not follow up the crew's failure to use the safety line.

The NSIA considers that the shipping company has not placed sufficient emphasis on safe management of operations through good work procedures. Lack of procedural descriptions of key tasks should have been identified by the supervisory authority through the many audits and onboard inspections in recent years.

DRILLS AND TRAINING OF THE CREW

The monthly man overboard drills described in the safety management system were not performed as described.

The use of lifebuoys was not tested in practice on board with this crew. Regular training of the crew and familiarisation with the rescue equipment would have demonstrated the use of lifebuoys with light and orange smoke. Within the first two minutes after the fisherman fell overboard, both the mate and the fishermen passed the starboard lifebuoy equipped with light and smoke more than five times, without this being used. The NSIA believes that a lifebuoy with light and smoke could have provided a better starting point for the search and given the crew and the fisherman who fell overboard a shared reference point.

The safety management system contained limited information about the correct handling of man overboard situations. In general, it referred to the ship's alarm instructions, which also did not describe what should be done, only who should man the MOB boat.

The man overboard checklist had several shortcomings:

- It did not describe the immediate actions to be taken by the person who discovers that someone has fallen overboard. Common tasks are to keep an eye on the person in the water, point and throw a lifebuoy with smoke and light. The fact that the fisherman on the afterdeck chose to raise the alarm rather than throw a buoy and keep a lookout was a rational reaction under the circumstances, especially considering that he had not received training in or practised the tasks he was meant to have.
- Measures such as to flag the MOB position in the chart, which was critical to searching the correct area, were lacking. This contributed to the fisherman not being found. This is discussed in section 2.3.

The MOB boat had not been tested or launched with this crew in the relevant season, which gave the crew little knowledge of man overboard situations. The NSIA believes that regular man overboard drills and searches would make the crew better qualified to deal with a real-life incident.

DESIGNATED PERSON'S ROLE IN THE SAFETY MANAGEMENT SYSTEM

To ensure the safe operation of each ship and to provide a link between the company and those on board, every company, as appropriate, should designate a person or persons ashore with direct access to the highest level of management. The responsibility and authority of the designated person or persons should include monitoring the safety and pollution prevention aspects of the operation of each ship and to ensure that adequate resources and shore-based support are applied, as required. This follows from Chapter 4 of the ISM Code.[8]

[8] *Regulations on a safety management system for Norwegian ships and mobile offshore units.*

The shipping company had appointed an employee of a consultancy firm to act as the designated person. This person had little or no contact with the crew on a daily basis, beyond dialogue with the skipper if necessary. Few of the crew knew who the designated person was or what that person's role was. The crew's lack of knowledge of the designated person has also been a topic during the NMA's audits.

The NSIA believes that shipping companies that make use of a hired designated person should be aware that the role must be effectively fulfilled as if the designated person was employed by the shipping company.

ASSESSMENT OF THE CREW'S LANGUAGE SKILLS

According to the shipping company's safety management system, the working language was Norwegian, but those who spoke a different language were to go through the safety management system in English. The safety management system was also largely translated into English.

During interviews with the crew, it became clear that several of the crew did not speak English well enough to hold a normal conversation. Everyone the NSIA interviewed confirmed that the working language was English and not Norwegian, as described in the safety management system. The safety meetings were also held in English.

The company also had poor control of the crew's English skills during the recruitment process. There were no procedures in the company's safety management system that provided guidance on this.

The NSIA believes that lack of a common language understanding caused several misunderstandings during the critical phase of the search for the fisherman who had fallen overboard. If the crew had had a common language understanding and used correct maritime terminology, they could have avoided misunderstandings and delays in the rescue work. The delay as a result of the lack of a common language understanding in the rescue work constituted a safety problem.

The company has changed its procedures and now checks each individual's language skills during the recruitment process. In addition, the shipping company will change the working language to English in the safety management system.