



Danish Maritime Accident
Investigation Board

MARINE ACCIDENT REPORT

March 2012



NORDIC NADJA
Accident to seafarer on 8 October 2011

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Front page: NORDIC NADJA. Photo: Nordic Tankers

The marine accident report is available from the webpage of the Danish Maritime Accident Investigation Board www.dmaib.dk.

The Danish Maritime Accident Investigation Board

The Danish Maritime Accident Investigation Board is an independent unit under the Ministry of Business and Growth that carries out investigations with a view to preventing accidents and promoting initiatives that will enhance safety at sea.

The Danish Maritime Accident Investigation Board is an impartial unit which is, organizationally and legally, independent of other parties.

Purpose

The purpose of the Danish Maritime Accident Investigation Board is to investigate maritime accidents and to make recommendations for improving safety, and it forms part of a collaboration with similar investigation bodies in other countries. The Danish Maritime Accident Investigation Board investigates maritime accidents and occupational accidents on board Danish merchant and fishing vessels as well as accidents on foreign ships in Danish territorial waters.

The investigations of the Danish Maritime Accident Investigation Board procure information about the actual circumstances of accidents and clarify the sequence of events and reasons leading to these accidents.

The investigations are carried out separate from the criminal investigation since the purpose is not to establish liability, but merely to establish the reasons for accidents so as to reduce the risk of similar accidents. The criminal and/or liability aspects of accidents are not considered.

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1 SUMMARY

NORDIC NADJA departed Dagenham in ballast on 7 October 2011 on a voyage for Rotterdam. At 12.50 on 8 October 2011, the ship anchored off Mass Approach Rotterdam.

While at anchor, an inspection of the free fall boat (FFB) was to be carried out, among other things.

Early in the afternoon, the 2nd engineer entered the FFB to carry out the inspection.

As NORDIC NADJA was rolling heavily due to waves and swell, it was difficult to stand upright in the FFB. At one time, the crewmember probably lost his balance and reached out for something to hold on to. Shortly hereafter, the lifeboat was released with the crewmember still inside.

At the fall of FFB, the 2nd engineer was injured and, among other things, broke a leg.

The 2nd engineer in the FFB managed to manoeuvre the FFB alongside NORDIC NADJA, where it was secured by ropes.

The crewmember was evacuated by the Netherland's Coast Guard and brought to hospital.

At the fall, he broke a leg and got some bruises.

This report does not contain any recommendation in relation to the unintentional release of the FFB on 7 October 2011. After the accident, the shipping company has initiated a number of preventive measures.

2 FACTUAL INFORMATION

2.1 Photo of the ship



Figure 1: NORDIC NADJA

Photo: Nordic Tankers

2.2 Ship particulars

Name of vessel:	NORDIC NADJA
Type of vessel:	Chemical/Product tanker
Nationality/flag:	Denmark (DIS)
Port of registry:	Copenhagen
IMO number:	9122112
Call sign:	OXNJ2
DOC company	Nordic Tankers Marine A/S
IMO company no. (DOC)	5189839
Year built:	1996
Shipyard/yard number	Union Naval de Levante – Valencia/231
Classification society	Lloyd's Register of Shipping
Length overall:	99.75 m
Breadth overall:	16.43 m
Gross tonnage:	4,124
Deadweight:	5,764 t
Draught max.:	6.71 m
Engine rating:	2,640 kW
Service speed:	11.5 kts
Hull material:	Steel
Hull design:	Double hull

2.3 Voyage particulars

Port of departure:	Dagenham, UK
Port of call:	Rotterdam, NL
Type of voyage:	Merchant shipping, international
Manning:	11
Pilot on board:	No
Number of passengers	0

2.4 Marine casualty or incident information

Type of marine casualty/incident:	Accident to seafarer
IMO classification	Serious
Date, time:	8 October 2011 at 14.00 LMT
Location:	Anchorage of Mass Approach Rotterdam
Position:	51°55.8' N – 003°45.1' E
Ship's operation, voyage segment	At anchor
Place on board	Boat deck
Consequences:	One seafarer injured Damages to free fall boat

2.5 Shore authority involvement and emergency response

Involved parties:	The Netherland's Coast Guard
Resources used:	Two rescue boats from the Netherland's Coast Guard
Actions taken:	Injured person brought ashore, and free fall boat towed to port.

2.6 The injured crewmember

Second engineer

Was employed by the company in January 2011.
Was on his third signing on on board NORDIC
NADJA. 4½ years' experience at sea.

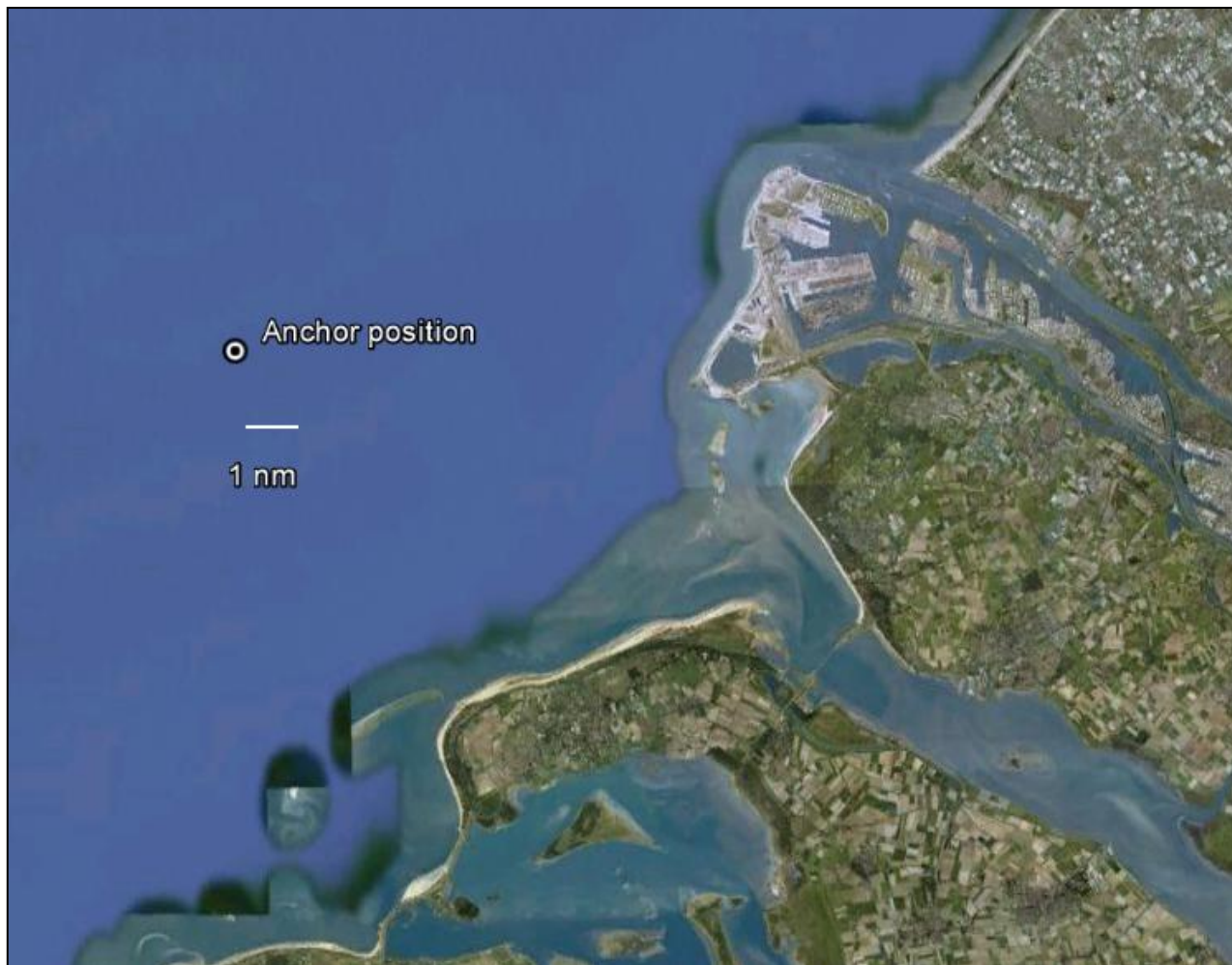


Figure 2: Scene of the accident. Mass Approach Rotterdam Google Earth

3 NARRATIVE

NORDIC NADJA departed Dagenham in ballast on 7 October 2011 on a voyage for Rotterdam. At 12.50 on 8 October 2011, the ship anchored off Mass Approach Rotterdam.

While at anchor, an inspection of the free fall boat (FFB) was to be carried out, among other things.

The inspection was part of the 2nd engineer's weekly inspection on deck checking, for example, the FFB's engine.

The ship's safety management system (SMS) contains a work order entitled "Free fall life-boat/weekly check". The work order contains a description of a check of the interior of the FFB, the winch arrangement, the electrical installations and the air supply.

The work order did not contain a description of any control and precautions to be taken before entering the FFB.

At 14.00, the 2nd engineer entered the FFB to carry out the inspection.

According to the procedure for the inspection, the FFB's engine was started.

As the ship was rolling heavily due to waves and swell, it was difficult to stand upright in the FFB. At one time, the 2nd engineer lost his balance and reached out to get hold of something. Shortly hereafter, the FFB was released with the 2nd engineer still inside.

The release of the FFB was heard by the 2nd officer and other crewmembers. The remaining crewmembers were immediately called on deck to assist.

In an attempt to recover the 2nd engineer, the gangway was lowered, but it proved too dangerous to use the gangway due to heavy swell. For the same reason, it also proved impossible to launch the rescue boat.

At 14.30, the 2nd engineer had managed to manoeuvre the lifeboat alongside NORDIC NADJA, and a line was lowered to the FFB. The 2nd engineer managed to tie the rope to the FFB.

The 2nd engineer in the lifeboat informed the crew on deck that he was bleeding and had broken a leg.

The master contacted the ship's agent, who then established contact with the Netherland's Coast Guard and a doctor.

The Netherland's Coast Guard called the master and informed him that a rescue boat was on its way. The doctor recommended the crew to stop the bleeding on the 2nd engineer's leg and to bandage it.

While waiting for the doctor, the crew placed a first aid kit, a bottle of water, a VHF radio, a life jacket and harness on board the life boat.

Attempts were made to lift the 2nd engineer from the FFB, but it proved to be difficult and very dangerous due to the movements of the FFB in the heavy seas and swell. In addition, it was difficult to place a harness on the injured person. Therefore, it was decided to let the 2nd engineer stay on board the FFB until the rescue boat arrived from ashore.

Attempts to hoist the FFB on board again were found to be unsafe as it would put the person on board at further risk.

At 16.10, the rescue boat arrived.

At 16.20, the rescue boat crew had managed to transfer the 2nd engineer from the FFB to the rescue boat. After the transfer, the rescue boat from the Netherland's Coast Guard returned to shore. On arrival, the 2nd engineer was taken to hospital.

A second rescue boat was dispatched from ashore to secure the drifting FFB and tow it to the life boat station at Berghaven in Hook of Holland.

3.1 The free fall boat

NORDIC NADJA is equipped with a free fall boat of the mark FBB PESBO BSL 20 M.

The boat was installed on board when NORDIC NADJA was delivered from the shipyard. It was placed on its platform and secured by means of the boat mooring only. The boat mooring is part of the release system.

Once every month, the FFB was lifted from the platform and lowered to the water as part of a boat drill.

Once every year, the FFB underwent service. The service was performed by the manufacturer PESBO themselves or by surveyors approved by PESBO. The last survey before the accident was carried out by PESBO.

The figure below shows the aft end of the FFB secured on its platform. Encircled in red is the boat mooring which is part of the release system, and encircled in green is the lashing intended to protect the boat from jumping in heavy seas.

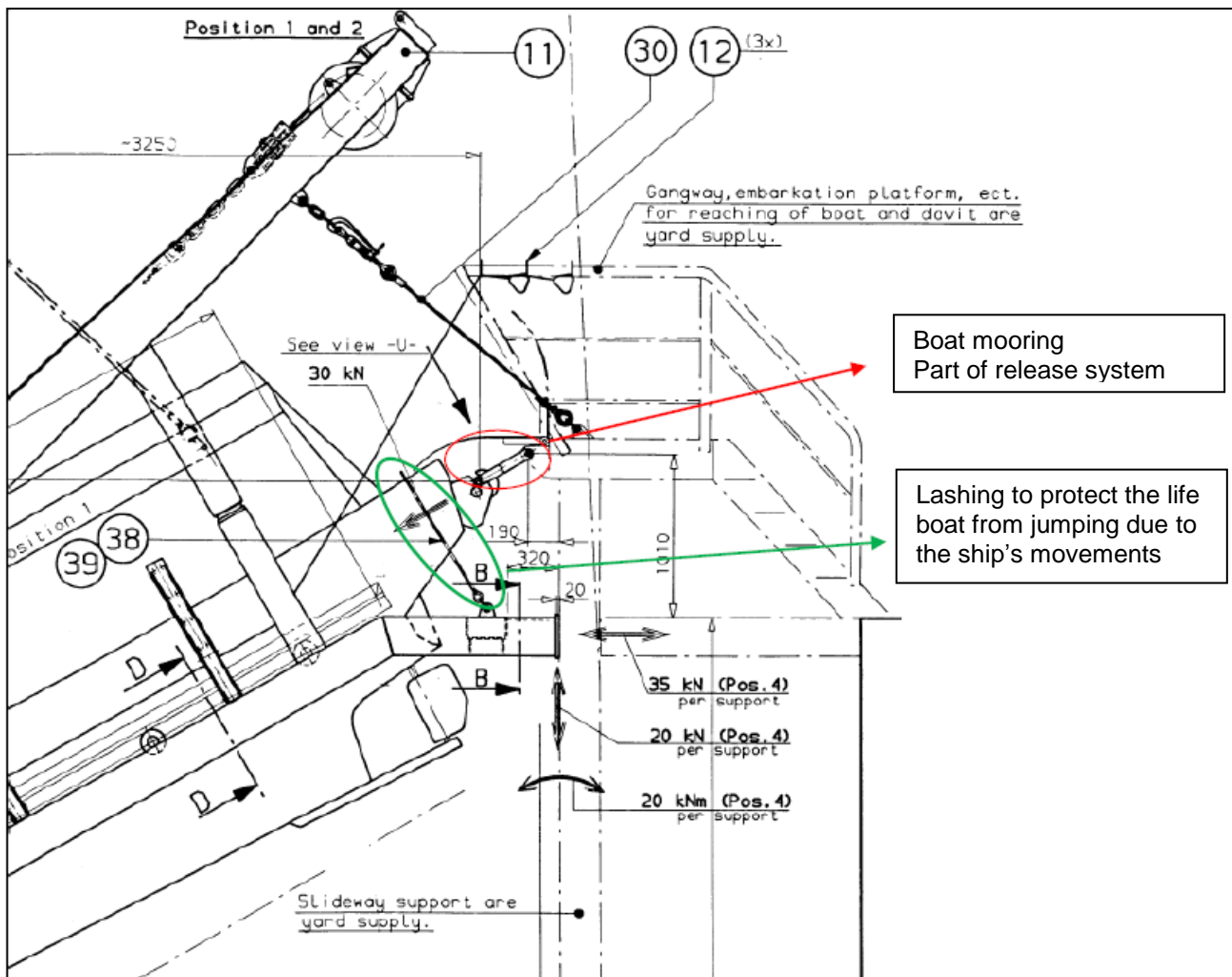


Figure 3 showing the FFB on its platform.



Figure 4 Boat mooring with release hook

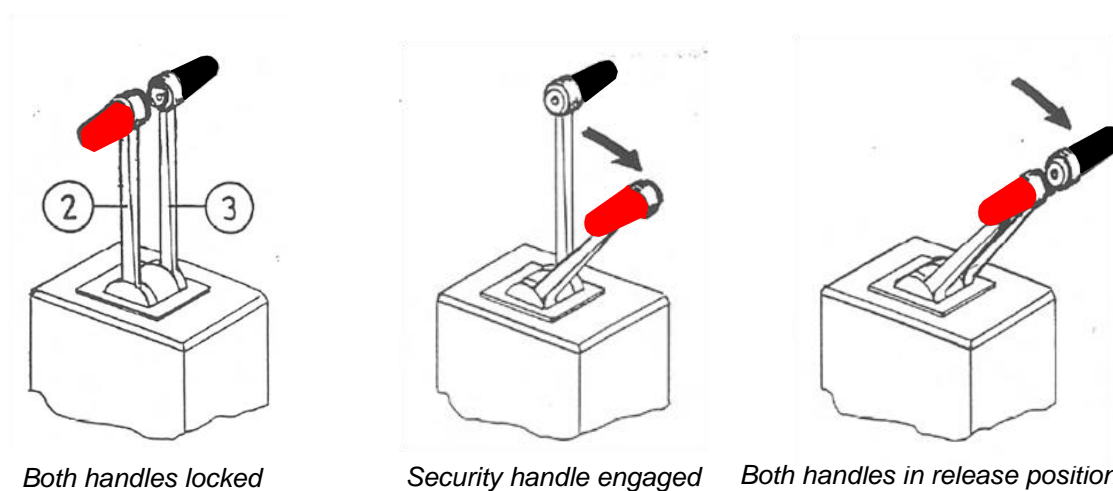
A lashing to protect the life boat from jumping up and down due to the ship's movements was torn apart at the accidental release of the FFB

No wire to fasten the FFB in case of inspection or maintenance was found on board.

After the unintentional fall, the FFB was taken to a workshop for repair. At the workshop were representatives from the manufacturer, and after repairs the FFB was inspected by a surveyor from PESBO and an independent surveyor from the Netherland's Coast Guard. After repair the FFB was reinstalled on board NORDIC NADJA.

3.1.1 The release of the FFB

According to the manufacturer's manual, the FFB has to be released in the following way:



Both handles locked

Security handle engaged

Both handles in release position

Figure 5 – Operation of the handles to release the FFB.

1. The first person on the boarding platform will open the access door and release all lashings fixing the lifeboat to the launching ramp.
2. Meanwhile, the crew will sit down in their seats and fasten their safety belts. The helmsman will ask the crew: "Ready", and only persons who are not ready should answer. Silence means that free-fall launching can be performed.
3. Should the helmsman be in a position that does not allow him to perform the launching, or should this arrangement be damaged/non-operative, the launching can be performed by means of the emergency system located in front of the last seat aft from the port side. First, push the red security handle (2), and then push the black release handle (3).

3.1.2 The safety system

As a part of the ship's SMS, there is a work order: 2011-2188, "Free fall lifeboat/weekly check".

The work order contains a description of a check of the interior of the FFB, the winch arrangement, the electrical installations and the air supply.

The work order did not contain a description of any considerations and precautions to be taken before entering the FFB.

The weekly check of the FFB was considered a routine task. Evaluation of the safety elements and possible dangers performing the inspection was not an issue.

When discussing the work tasks for 8 October 2011, no one reflected upon the danger of entering the FFB under the prevailing circumstances.

3.2 Consequences of the accident

The 2nd engineer in the lifeboat suffered fractures to one of his legs and got some bruises. He was hospitalized for 5 days and then transported to his home for recreation.

As a consequence of the accident, the 2nd engineer suffered from loss of memory to some degree. Among other things, he had no memory of what could have caused the release of the FFB.

The lifeboat was damaged in the attempt to go alongside NORDIC NADJA. Due to the sea and heavy swell, the boat slammed against the hull.

3.3 Environmental conditions

The weather was overcast with a visibility between 5 and 25 nm.

The wind was a NWly force 6 (11-14 m/s).

Sea state 5. The day before the accident, the wind had blown at a force of 7 Beaufort causing a heavy swell at the roads off Maas Approach.

4 ANALYSIS

The ship's Safety Management System contains a risk assessment for: "*Entering the free Fall Life Boat for maintenance and inspection*".

The assessment lists a number of hazards. If the highest risk is assessed to be above "*Substantial*", the task is not to be carried out.

The risk assessment did not contain a control of whether the FFB was fastened to the platform by other means than the release mechanism.

It is the assessment of the Investigation Board that a contributing factor to the accident was the lack of a suitable risk assessment for entering the FFB for checks and maintenance. As the weekly control of the FFB was considered a routine task, there was no reflection on the contents of the risk assessment and thus no development or evaluation of the risk assessment.

While at anchor, a weekly inspection of the free fall boat was to be carried out in accordance with the regulations of the SOLAS Convention.

At the inspection on 8 October 2011, there was no safety strap around the FFB, and no fall prevention wire or other means of protection had been mounted. The FFB was thus only attached to the platform by the FFB boat mooring, which is part of the release system.

It is the assessment of the Investigation Board that a contributing factor to the unintentional fall of the FFB was the lack of a safety strap and fall prevention wire or other means of preventing an unintentional fall.

According to the manufacturer's manual, the handles for releasing the FFB should have been equipped with a security device to prevent an unintentional release of the life boat.

The manufacturer's manual shows that the following safety device should have been installed in the FBB to prevent unintentional release.

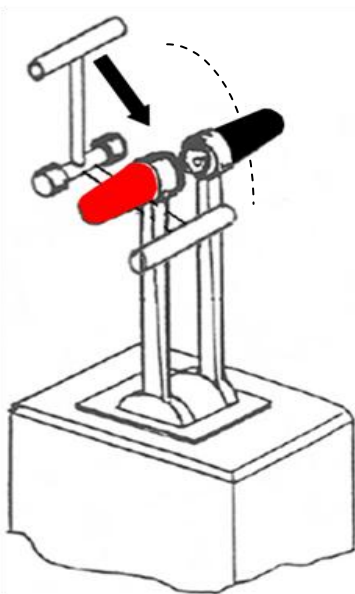


Figure 6 – Safety device to lock the operating handles.

The investigation revealed that the design of the safety device attached to the handles was not in accordance with the description in the manual on board NORDIC NADJA.

An enquiry about the safety device was sent to the manufacturer.

The manufacturer confirmed that no such system as shown in the manual was installed in the FFB on board NORDIC NADJA.

Instead, the safety system for preventing unintentional release of the boat should consist of a ring surrounding both shafts of the handles and fastened to the FFB by a chain. This system was not installed in the FFB on board NORDIC NADJA or two sister ships carrying the same mark of FFB.

No other or additional safety device was installed in the free fall boat. Thus, there was no safety system to prevent release of the hook holding the boat to the boarding platform.

After the accident, the FFB was inspected. The inspection revealed that both the security handle and the release handle had been pushed backward, causing the hook holding the life boat to disengage.



Figure 7 showing the security and release handles in the released position.

A test revealed that it was possible to move both handles simultaneously from the upright position to the position releasing the FFB. It has not been possible to establish the cause of this malfunction.

Subsequently, an examination of the FFBs of the same mark on board two sister ships showed that it was impossible to move the security and release handles simultaneously from the upright position.

The manufacturer has informed that under normal circumstances it is impossible to operate both handles simultaneously. The security handles operate the brake. Not until the brake has been released, can the release handle release the boat.

It is the assessment of the Investigation Board that a contributing factor to the unintentional fall of the FFB was lack of additional safety measures besides the protection of the release handles i.e. by using the FFB retrieval hook.

During the inspection of the FFB, the sea was rough with heavy swell causing the ship to roll and pitch heavily while at anchor.

It is most likely that the 2nd engineer lost his balance due to the movements of the ship and reached for something to hold on to. In the process, he has possibly in some way activated the handles for releasing the boat.

The 2nd engineer had no idea of what may have released the free fall boat. After the fall of the boat, he has had some loss of memory.

It is the assessment of the Investigation Board that the 2nd engineer lost his balance due to the rolling and pitches of the ship and grasped for something to hold on to and in the process unintentionally released the FFB.

5 CONCLUSIONS

It is the assessment of the Danish Maritime Accident Investigation Board that:

- *A contributing factor to the accident was the lack of a suitable risk assessment for entering the FFB for checks and maintenance. As the weekly control of the FFB was considered a routine task, there was no reflection on the contents of the risk assessment and thus no development or evaluation of the risk assessment.*
- *A contributing factor to the unintentional fall of the FFB was lack of additional safety measures besides the protection of the release handles i.e. by using the FFB retrieval hook.*
- *A contributing factor to the unintentional release of the FFB was the lack of a safety device on the release handles.*
- *The 2nd engineer lost his balance due to the rolling and pitches of the ship and grasped for something to hold on to and in the process unintentionally released the FFB.*

6 PREVENTIVE MEASURES TAKEN

After the accident, an extraordinary safety meeting was held in order to discuss and establish a safety procedure for entering the free fall boat.

It was ordered that the free fall boat was to be fastened to lifting hooks before any entry for service or repair.

Ships in the company's fleet with similar free fall boats were immediately informed not to enter the FFBs until further notice unless in an emergency situation.

The flag State and classification society were informed and the classification society issued a short-term Safety Equipment Certificate.

Subsequently, all vessels with free fall boats missing a safety device to prevent unintentional release of the boat were ordered to make immediate temporary modifications in the life boats to prevent the release handles from being unintentionally released.

The three FFBs of the mark FBB PESBO BSL 20 M in the fleet have been fitted with temporary safety devices to prevent unintentional release of the boats. See figures 8 and 9.



Figure 8. Safety device on NORDIC NADJA



Figure 9. Safety device on NORDIC NORA

The release mechanism of the FFB on board NORDIC NADJA has been checked and tested by a service company and found in good working order. No malfunctions were found.

A copy of the company's investigation report regarding the accident has been sent to the ships in the fleet by means of a "Health and safety Bulletin".

The risk assessment for: "*Entering the Free Fall Lifeboat*" was revised the day after the accident and again on 14 January 2012.

The revised risk assessment contains a check of whether the life boat is fastened to its platform by other means than the release system before entry. The system to retrieve the FFB now has to be connected during any entry of the FFB apart from in an emergency situation. The risk assessment also contains the provision that the officer of the watch has to be informed before entry.

The company has taken steps to ensure that the location and operation of the fall prevention devices are known to all crewmembers, including awareness of how and when to use the fall prevention devices.

The company is in dialogue with both the manufacturer and the classification society to find an approved solution to prevent unintentional release of their FFBs.