Danish Maritime Authority
Ministry of Trade and Industry

CASUALTY REPORT

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Case 199912615
File 01.40.50

NICOLAI MAERSK

Drop of lifeboat

13 February, 2001

1. The Casualty

Type of casualty:	Drop of lifeboat
Location of casualty:	Auckland, New Zealand
Date and time:	13 February 2001 at 0750 (New Zealand Time – UTC+13)
Loss of lives:	1
Injuries:	6

2. Summary

On February 13 at 0630 NICOLAI MAERSK arrived at Ferguson Container Terminal in Auckland and berthed starboard side to. Before arrival a port side lifeboat drill was scheduled to take place immediate following the arrival and under the command of the chief officer.

At 0715 the lifeboat was ready for launching. 7 crew members were on board the lifeboat and were fastened in their seatbelt. The boat was lowered to a position level with the boat deck, and at that point the hoisting function was tested. The winch motor did not hoist and the drill was therefore abandoned and an attempt was made to hoist the boat by hand. In order to investigate the cause the electrician was sent down to the HI-press room, where the electrical panel board of the davit motor is located. By pushing different contacts at the panel board the winch motor could be brought to hoist in jerks.

Suddenly the winch started to hoist steady and fast and continued hoisting after the davits had reached their uppermost position. Due to the continued pull the wires broke and the boat fell 16 metres down to the sea. One of the crew members was so seriously injured, that he died shortly after, 3 other crew members were seriously injured and the remaining 3 crew members sustained light to moderate injuries.

The investigations following the accident has shown, that by pushing the contacts at the panel board the Proximity Cut-off Switches at the davits, which cut off the current for the winch motor just before the davits reaches their stop position, and the Over Current Control Relay, which cut off the current for the winch motor in case of overload, were bypassed.

3. Ship Particulars

Name of Ship:	NICOLAI MAERSK
Registration No:	
Home Port:	Bogense
Control No:	OVZB2
Call Sign:	
IMO No:	9192454
Type of Ship:	Containervessel
Construcion year:	2000
Tonnage:	27333 GT
Length/breadth/draft:	187.6 metres / 30.2 metres / 17.5 metres
Engine Power:	28.350 Kw
Crew:	19
Owner:	A.P. Moller
Classification Society:	Lloyds Register

The lifeboat davit is manufactured by Dongwoo Machinery & Engineering CO Ltd. and is a CSBC Hinged gravity type. After having removed applicable lashings and disengaging the davit arms craddle stopper, the boat can be immediately lowered by lifting the brake lever. The brake lever can be lifted from within the lifeboat, by a remote cable, as well as from the boat deck, by hand.

The lifeboat is a FASSMER enclosed lifeboat, Type GMR 7.4, certified to carry a maximum crew of 34. It is of the self righting type constructed of fibreglass and fitted with a diesel engine. The weight of the boat with fittings in accordance with SOLAS requirements is set to 3.400 kg. The total weight including 34 persons of each 75 kg is consequently 5.950 kg. The crew enters the boat in its stowed position from a platform at level with the after end of the boat. The boat is designed with seats in both sides for all crew members except the boatman, who is seated in the steering station. When seated the crew members are facing the middle of the boat and there are seatbelts for all.

NICOLAI MAERSK had entered into the ISM System.

4. The Crew

NICOLAI MAERSK was crewed with the master, the chief officer, the chief engineer, the 1st engineer and 2 cadets, who were Danish citizens, and the 1st officer, the 2nd officer, the 2nd engineer, 4 ABs, 2 electricians, a motorman, a cook and a steward, who were Philippinian citizens and repairer, who was Polish citizen.

The crew was in accordance with the Minimum Safe Manning Document issued by the Danish Maritime Authority under 23 May 2000.

The master had 1 month service as master of NICOLAI MAERSK.

The chief officer had about 10 years service as chief officer in the A.P. Moller Company, in the M-boats and the L-boats. He was in NICOLAI MAERSK when she was delivered from the building yard on 20 June 2000 and stayed on board until 2 September. He again enlisted on 22 November.

The 1st officer had served in Danish ships since 1991 and in NICOLAI MAERSK since 22 November 2000.

The chief engineer had served at sea in the A.P. Moller Company since 1978, as chief engineer for about 1½ year and in NICOLAI MAERSK for 3 months in year 2000 and again from 1 February, when he came on board in Hong Kong.

The 1st engineer had served at sea in the A.P. Moller Company for about 7 years and before then in The East Asiatic Company. He came on board NICLAI MAERSK on 1 February.

The 2 ABs, who at the deck were involved in the accident, both had long time at sea in Danish ships and respectively 4 and 8 month in NICOLAI MAERSK.

The electrician, who was involved in the accident, held a Philippinian Certificate as Registered Master Electrician issued in 1997. He had been at sea in Danish ships since 1994 and in NICOLAI MAERSK since 22 November 2000.

The diseased was a Philippinian AB.
The 3 serious injured were a Philippinian AB, the Philippinian steward and the Polish repairer.
The 3 less serious injured were the Philippinian 1st officer and the 2 Danish cadets.

5. Narratives

On 3 February NICOLAI MAERSK left Kaohsiung, Taiwan, and arrived at Auckland on 13 February at 0630, when the ship berthed starboard side to. A few days before at a working meeting on board it was decided to have a port lifeboat drill immidiate following the arrival.

When NICOLAI MAERSK was made fast the chief officer asked the 1st officer to prepare the port lifeboat for launching. Before that the chief officer had received the permission from the harbour authorities to launch the port lifeboat.

The weather was fair with no winds and NICOLAI MAERSK was on even keel.

At about 0750 the chief officer had finalized his doings with the stewedores, had changed and arrived at the boat deck. At the boat deck the designated crew for the port lifeboat were present and the boat was prepared for launching, that is the lashings were removed, the davit arms craddle stoppers were released and the guy rigged.

The chief officer instructed the 1st officer how to carry out the drill. The boat crew should enter the boat and fasten their seatbelts. When the 1st officer over the Walkie-Talkie had reported, that all were fastened, the chief officer would direct the boat to be lowered to a position level with the boat deck and from here make a check of the hoisting function of the winch, after which the 1st officer, from the boat, should lower the boat to the sea.

Then the 8 crew members entered the lifeboat.

Before lowering the boat the chief officer told the 1st officer to send back the electrician to the boat deck, because the chief officer wanted to have the electrician at his disposal in case of problems when hoisting the boat. According to the chief officer and the electrician this was normal rutine during boat drills. The electrician then disembarked the boat and returned to the boat deck.

The 1st officer then told the chief officer, that all were fastened after which the chief officer, at about 0720, instructed the dayman to lift the brake lever and slowly lower to deck level.

The dayman lifted the brake lever and slowly lowered the boat to deck level. Here he stopped and pressed down the brake lever.

With the boat at deck level the chief officer tested the deck control unit. He noticed that the power indication light did not light up, but he pushed the green button for ”Hoist”. However nothing happened, the winch motor did not run.

Consequently the chief officer decided to abandon the drill and to have the boat back to stowed position. On the ground that the distance between the boat and the boat deck was 1.5 – 2 metres he decided that it was less risky to keep the crew in the boat rather than to bring them back to the boat deck.

The chief officer instructed the electrician to go to the HI-press room at deck A, where the Electrical Panel Board of the davits is located. The chief officer was of the opinion that it was just something, e.g. a fuse, which should be replaced. At the same time he instructed the ones at the deck to start hoisting the boat by the handle.

In the HI-press room the electrician opened the Electric Panel Board. At first he pushed the button for the Over Current Control Relay (OCRR), then he switched on the Main Circuit Breaker (MCCBR) and finally he pushed the Main Contactor Relay (MCR).

The pushing by the electrician of the buttons in the panel board made the wire motor to hoist a bit at the same time as the manual hoisting at the deck started.

The chief officer therefore ran to the HI-press room to investigate what happened. Reaching there he noticed the electrician and the chief engineer in front of the open panel board. The electrician was pushing a button. The chief officer himself pushed a button and got the message from the watchman at the deck, that nothing happened.

The chief officer told the electrician and the chief engineer, that they should not attempt to get the winch running from the panel, but that they could check the fuses.

Then the chief officer went back to the boat deck, where the manual hoisting was continued. However, this was a very slowly operation, due to the fact that the handle was placed close to the deck and therefore could be handled by only one person standing in an awkward position.

Shortly after the electrician returned to the deck and checked the deck control unit.

According to the chief engineer he was in his cabin, when he over his radio learned about the lifeboat problems. Consequently he went to the boat deck, where he saw that the lifeboat was lowered to deck hight. From here he went to the HI-press room, where he met the electrician leaving the room. In the HI-press room the chief engineer noticed that the panel board was open. He checked the fuses and removed one, which he thought gone. However it was OK and he replaced it again.
Shortly after the electrician returned together with the chief officer, and the chief engineer now watched the electrician pushing some buttons and that the ammeter of one of the relays shot off the scale, which indicated a full current at this relay. By doing this the electrician made the winch hoisting.
The chief engineer then returned to the boat deck, where he saw that the boat had been hoisted about half a metre since he left.

According to the 1st engineer he passed the HI-press room at 0725 on his way up from the engine room. He noticed the chief officer and the electrician leaving the room, and he went into the room, where the chief engineer was present. The chief engineer told him, that a fuse had been replaced, which had happened before. The 1st engineer then left the HI-press room and went to his cabin to change to safety shoes. Then he went to the boat deck.

After a couple of minutes hand-hoisting at the deck, the chief officer instructed the electrician to return to the HI-press room together with the watchman, who carried a Walkie-Talkie. The chief officer instructed the electrician to make a new attempt to run the winch from the panel board and to communicate with the chief officer via the Walkie-Talkie carried by the watchman.

In the HI-press room the electrician pushed the same button as ealier on. He switched the MCCBR to ”on” and pushed the MCR button. When he pushed the MCR button the MCCBR shortly after switched back to ”off”. At the boat deck the winch was hoisting in jerks. Several times the electrician via the Walkie-Talkie asked the chief officer whether he should continue, and each time the chief officer told him to continue. The electrician therefore continued several times to switch the MCCBR to ”on” and push the MCR button.

At the deck the winch continued to hoist in jerks, a few seconds at the time. When the davit was 30 – 40 centimetres from the electromagnetic Proximity Cutoff Switch, and thus from its uppermost position, the winch suddenly started to hoist faster. When the chief officer saw, that the plate at the davit was near to the cutoff switch, he several times called ”stop” to the electrician via the Walkie-Talkie.

In the HI-press room the electrician, through the Walkie-Talkie carried by the watchman, heard the chief officer calling stop several times. He removed his hands from the panel.

At the boat deck the winch continued hoisting after the davits had reached their top position with the result, that both wire falls broke the one shortly after the other. It was then about 0750.

There are contradictory statements as to which wire fall broke first.

The lifeboat then fell down but was catched by the boat deck rail and at first it looked as if the boat would remain here. Immediately after, however, the davits fell down and hit the boat, which was pushed free of the rail and continued its fall to the sea.

The boat fell about 16 metres. Accordning to crew members in the lifeboat, the boat turned around before it hid the sea. From the boat deck the boat was not seen before it was in the sea and on even keel.

One of the cadets was the first one free of his seatbelt. He managed to open the door aft and called to the boat deck about the injured.

Immediatly after the 1st officer was free of his seatbelt, and he at once realized, that the later died AB, who had the seat aft starboard side, was seriously injured. The 1st officer spoke to him and he answered that he was in great pain. Shortly after he lost consciousness. The repairer, who was seated besides, was also seriously injured.

From the deck the port gangway was quickly lowered. The chief officer ran to the deck office, from where he via Walkie-Talkie reported the accident to the master and asked him to call an ambulance.

At about 0755 the chief officer, via VHF radio, told the harbour authorities about the accident. They offered to send the pilot boat, for which the chief officer thanked yes.

At about 0800 the pilot boat arrived but again departed to pick up the ambulance paramedics, who had arrived at a quay nearby.

In the lifeboat the unconscious AB was moved to a stretcher, and the master, who was now present, arranged a collar to be put on the AB.

At 0810 the pilot boat was back with the ambulance parametics, and the unconscious AB and 3 others seriuosly injured were taken to the ambulance.

The 1st officer and the 2 cadets were sent to an ordinary doctor, who sent them to the hospital for a X-ray. After that they returned to the ship.

The unconscious AB had died before arrival at the hospital due to internal injuries caused by the fact that he was hit in his back by the after davit boat stopper, which penetrated the hull of the lifeboat, when the davit fell on the boat.

The repairer and the other AB both had broken ribs and were seriously bruised, and the steward also was seriously bruised and with severe broken veins at the one arm. After a couple of days under observation at the hospital all 3 returned home for recreation.

6. Further Investigations

Damage to the davit assembly, the lifeboat etc.

At the day of the accident, on 13 February, an inspector from Maritime Safety Authority of New Zealand (MSA NZ) arrived at NICOLAI MAERSK. The inspector conducted several examinations of equipment, boat etc. and took photos. These photos, with remarks of the inspector, are attached as **Annex 1**.

The inspector's preliminary investigations were of great help to the representative from The Danish Division for Investigation of Maritime Accidents, who arrived at NICOLAI MAERSK, in Napier, on 15 February.

The following damage to the davit assembly was found:

- The after wire fall had broken in an uneven manner, as the outer wires showed a longer length that the inner wires and the manilla centre stand.
- The forward wire fall had broken almost even.
- The davit arm lights and assembly were bent and broken.
- The after davit arm boat stopper had cracked at the welds and the davit arm wooden bloch had been torn.
- The forward davit arm boat stopper showed torn wooden block.

The following damage to the lifeboat was found:

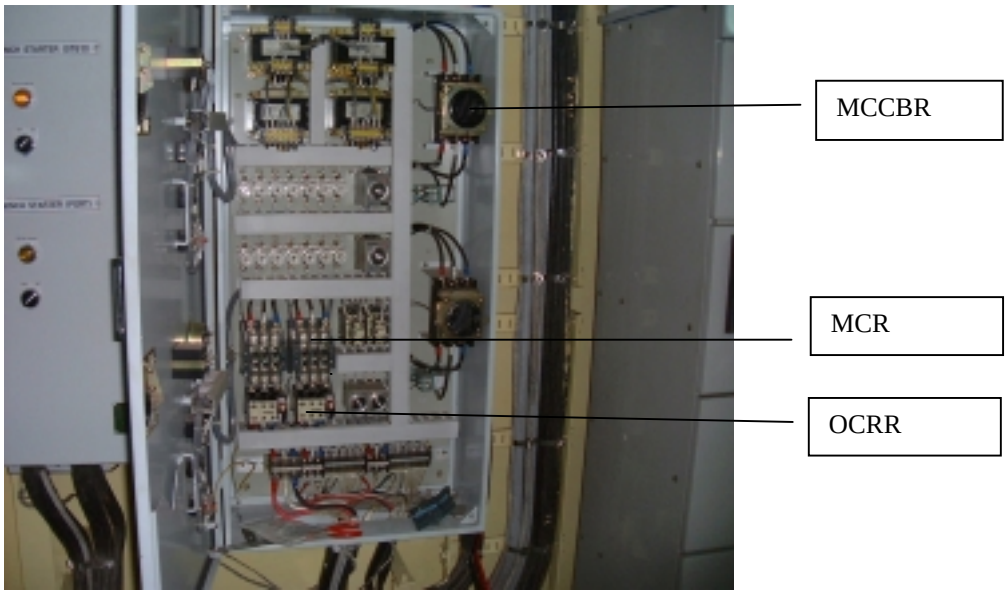
- There was a large hole in the starboard bow just beneath the belt line.
- The after end, starboard side of the hull and part of the steering station were torn.
- The hull had cracked starboard side amidships, near the keel, and near the rudder.
- The side window starboard side had broken.
- The forward fall hook engaging sleeve had bent.

The following damage to the ship was found:

- The boat deck railing directly underneath the stowage position of the boat had bent.
- The embarkation ladder had bent.

The Electrical Panel Board.

In the Electrical Panel Board located in the HI-press room are 2 identical circuits for the starboard and port winch motor. The main modules in the electrical circuit (see **ANNEX 2**) are:



The Main Circuit Breaker (MCCBR), which protects the electrical circuit and power source from any malfunction during the operation of the winch motor which may result in excessive amperage in the electrical circuit.
The emergency stop button at the remote control box also trips the circuit breaker, thus cutting off power supply.

The Main Contactor Relay (MCR), which controls the on/off function of the winch motor and the remote control box at the boat deck.

The Over Current Control Relay (OCRR), which controls any overload during the operation. When activated this cuts power to main contactor relay (MCR).

During the survey following the accident it was found,

that there was much noise in the HI-press room,

that the door of the Electrical Panel Board could open only with the MCCBR in off-position,

that it was possible to operate the winch motor from the Electrical Panel Board by resetting the OCRR, then push the black button on the MCR and then reset the MCCBR,

that by manual pushing the MCR button the function of the MCCBR is cut out, however, the motor can still be stopped by pushing the Emergency Stop button at the remote control box,

that by manual pressing the MCR button the function of the Proximity Switches at the david is cut off,

that during a function test the Emergency Stop function of the remote control box and the function of the Proximity Switches were functioning correctly,

that the indicatorlamps at the remote control box (power on) was not working because the bulp was worn out but that the remote control box otherwise was working correctly,

that the OCRR was set to 25 amp., while the norminal current for the winch motor is 22,5 amp., and

that according to the electrician he was only pushing one of the buttons of the MCR, which means that not all 3 contacts make contact at the same time, which again can explain a high current consumption and the fact that the MCCBR was tripped off several times and that the winch was running in jerks at the beginning.

Test of the wire falls.

The FORCE Institute in Copenhagen has tested a length of the broken wire falls to estimate the general condition of the wires and its breaking limit.

According to the test report the wire was well kept with no visual signs of wear and tear. The fracture of the ends of the wires indicated, that overloading caused the failure.

The wire had a breaking load of 18.777 kgf, which correspond to the breaking load of 18.200 kgf at the Lloyds Register Certificate and 20.000 kgf at the DNV Certificate.

The Test Report, the Lloyd's Certificate and the DNV Certificate are attached as **ANNEX 3.**

Load Test.

The investigations in the days following the accident did not clarify why the winch motor would not run, when the chief officer tested the hoisting function after the boat had been lowered to deck level.

According to the davit manual from the manufacturer the hoisting working load (WL) of the davit was 3.700 kg, a load based upon the load of the boat including equipment and 2 persons on board.
The Safety Working Load (S.W.L.) of the winch is given as 4.755 kg.

During the actual drill 7 persons were on board, corresponding to a total load of about 4.000 kg.

In order to verify whether this load together with the load of the davit in a vertical, stationary position exceeded the hoisting capability of the winch motor, a load test was carried out on 1 July, when the boat was loaded with a "dead" load corresponding to 7 persons (546 kg).

An inspector from MSA NZ observed the test.

2 tests were done. The hoisting function was tested with the boat lowered to the boat deck level and the davit fully extended.

It was found,

that the winch motor did not appear to strain and ran smoothly with no attempt to cut out,

that the Proximity Switches operated and cut off the current, and

that the ammeter at the panel board shut off the scale very briefly, when the motor was engaged, and the returned to show 17 amps gradually increasing to max 20 amps as the load increased, and then gradually diminishing to zero, when the boat was again in its stowed position.

Previous lifeboat drills.

In accordance with SOLAS and hence also in accordance with the regulations of the Danish Maritime Authority every lifeboat must be launched with its assigned operating crew aboard and manoeuvred in the water at least once every three month.

The port lifeboat was last time in the water on 22 November 2000, without any problems. The last maintenance check had been carried out on 11 January 2001, see **Annex 4**.

The starboard lifeboat was last time in the water on 17 January 2001, without any problems. The present chief officer was in charge of this drill, which was carried out with 6 crewmembers aboard the boat.

During the drills it was normal practice first to lower the boat to the level of the boat deck and in this position to check the hoisting function of the winch before lowering the boat to the sea.

Instruction Manuals for launching of the lifeboat.

The following instruction material was found in NICOLAI MAERSK:

- Instruction Manual for Life Boat Davit, delivered from Dongwoo Machinery & Engineering CO., LTD.
- Deck Operation Manual.
- Crew Training Manual.
- Poster at the davit.

Instruction Manual for Life Boat Davit.

Part 5 contains operative instructions for the lowering and the hoisting of the boat, see **ANNEX 5**.

In the hoisting instructions is noted, that the davit is able to hoist the boat together with 2 persons embarked.

Deck Operation Manual.

This manual is from the sister ship NELE MAERSK.

The instructions in the manual are by and large identical to the instructions in the above mentioned from the manufactory, however, under the Lifeboat Recovery Procedure is noted, that the winch motor will lift the lifeboat with a maximum of three persons onboard, see **ANNEX 6**.

Crew Training Manual.

This instruction was kept in the crew's day room. It had been collected by the previous 2nd officer.

The section of the manual concerning the launching of lifeboats is dated 1988, and relates to quite a different type of lifeboat than the one aboard NICOLAI MAERSK, see **ANNEX 7**.

Poster at the davit.

The instructions at the poster are identical to the instructions in the manual for Life boat Davit of the manufactory, see **ANNEX 8**.

7. Comments made by the Investigation Division

Concerning the drop of the lifeboat.

On the basis of the found damages and statements from the involved crewmembers, the Investigation Division is of the opinion, that the sequence of events of the drop of the lifeboat are as follows:

- The after wire fall broke first, and the aft end of the boat dropped 20 – 30 centimetres, with the keel hitting the davit arm boat stopper. The boat then slid outward and came to rest briefly on the embarkation ladder and part of the deck railing.
- Immediately after the forward wire fall broke, causing the forward end of the boat to drop approximately 1 metre. The port side lower hull hit the deck railing structure and "wedged" itself for a short period.
- At this point nothing could hold back the davit arms, which consequently fell downwards as a result of gravity forces, the after arm followed by the forward arm. At both ends, the boat stoppers rammed into the starboard side of the "wedged" boat. The aft end boat stopper hit the boat just about the belt line and the forward one just below the belt.
- By these forces the boat was pushed further over the side of the vessel, turned around and ended down in the water upside down.
- The boat self righted and some of the crewmembers released their seatbelts and alerted crew members on the ship to the injuries which were sustained.

Concerning the instructions (Manuals) for lowering and hoisting of the lifeboat.

Instruction Manual for Life Boat Davit contains detailed instruction for lowering and hoisting of the lifeboat.
Identical instruction is posted at the davit.

According to this instruction the davit can hoist the boat with 2 person aboard.

During the investigations by the Investigation Division it became evident, that senior crewmembers, e.g. the chief officer and the chief engineer, did not know the manual.

Deck Operating Manual – for NELE MAERSK – contains broadly identical instructions as in the Life Boat Davit manual, however, with the difference that the winch motor can hoist the boat with max 3 persons onboard.

According to later information from the owner, NICOLAI MAERSK was not equipped with a Deck Operating Manual at the time of the accident. The manual of NELE MAERSK was to be considered a preliminary draft brought aboard for redrafting to the conditions on NICOLAI MAERSK and should not be considered as part of the documentation of NICOLAI MAERSK.

The master has stated that a new Deck Operating Manual was in preparation.

No one aboard was able to explain the difference mentioned of 2 and 3 persons during the hoisting of the boat.

The Investigation Division is of the opinion, that the managing team on NICOLAI MAERSK was not aware of the fact, that there was a limitation as to the number of person in the boat during hoisting. The fact that this drill, as well as other drills, was carried out with 6 – 8 persons aboard seems to confirm this.

In accordance with SOLAS a lifeboat shall be launched with its assigned operating crew aboard. The operation requires a boatman and 2 crew members, one at each ends to connect the falls, in total 3 crew members.

The Investigation Division consequently is of the opinion, that the Classification Society has approved a davit installation that could not meet the requirements of SOLAS while complying with the instructions of the manufacture.

The Crew Training Manual's section on the launching of the lifeboat relates to quite a different type of lifeboat.

The Crew Training Manual is kept in the crew day room and must therefore be considered a main source to the crew on the deck equipment. The Investigation Division finds it totally unacceptable and misleading, that the manual does not describe the actual conditions on board.

The master has stated to the Investigation Division, that he did not know the procedures for launching of the lifeboat. He fully trusted the chief officer to handle this.

The Investigation Division is finally of the opinion that the ship management's general knowledge of the manuals was very poor, notwithstanding that the vessel had been in operation since June 2000.

At an extraordinary safety meeting held on board NICOLAI MAERSK on 20 February the accident was discussed and it was decided to take different actions to prevent a similar accident. The record of the meeting is attached as **ANNEX 9**.

Following the accident the Technical Department of the owner to all the vessels of the owner distributed an instruction concerning measures during lifeboat drills, see **ANNEX 10**.

Concerning hoisting by the electrical panel board.

The Investigation Division is of the opinion, that no one on board had a closer knowledge of the electrical circuits of the davit winch. The electrician had not seen the circuit diagram and the chief engineer, the chief responsible of the electrical installations of the vessel, looked over himself the electrician pushing the buttons of the panel without interfering.

The Investigation Division is not certain why the winch motor did not hoist when the button of the remote control box was actuated. It could be, that the main circuit breaker (MCCBR) has not been in "on"-position since the last drill, maybe turned off by an operator pushing the emergency stop button of the remote control box.

Although the electrician pushed the main contactor relay (MCR), the winch could have been stopped by actuating the emergency stop of the remote control box, when the davit came close to the proximity switches.

The Investigation Division is also of the opinion, that the winch started to hoist quite normal in the last phase, and not in jerks, because in this position of both the davit and the boat the movement changed from a horizontal to a vertical movement, which meant less weight on the winch and consequently no cutting off of the MCCBR.

Due to the noise in the HI-press room the Investigation Division finds it quite possible, that the electrician did not immediately catch when the chief officer called stop.

Concerning the decision of the chief officer to keep the crew in the lifeboat.

The chief officer very soon realised that the lifeboat could not be hoisted as normal. He therefore abandoned the drill and at first tried to hoist the boat manually and later via the panel board as described.

It was the judgement of the chief officer, that it would involve a greater risk to order the lifeboat crew back aboard before the hoisting than to keep them in the boat, because the boat was hanging 1.5 to 2 metres from the ship's side about 16 metres above the sea.

The Investigation Division is of the opinion, that it is must have been a very unpleasant experience to the crew in the lifeboat when they could sense the very abnormal hoisting. The Investigation Division is also of the opinion that it would have been more secure, if the chief officer had arranged to take the lifeboat crew back aboard before the abnormal hoisting was started.

8. Conclusions

The Investigation Division is of the opinion, that it was the primary cause of NICOLAI MAERSK's drop of the lifeboat during a lifeboat drill on 13 February 2001 that the chief officer used an abnormal procedure for hoisting of the lifeboat.

In this connection the chief officer ordered the electrician to run the winch motor by manually pushing the main contactor relay (MCR). By doing this the over current control relay (OCRR) and the proximity cut-off switches at the davits were cut off.

The decision of the chief officer to keep the crew in the boat during the abnormal hoisting caused that the drop of the lifeboat had so serious human consequences.

The Investigation Division is further more of the opinion, that is has been a contributory cause of the accident that the Ship Management in NICOLAI MAERSK did not have sufficient knowledge of the davit arrangement and specifically not of the electrical system.

As a consequence of this the chief engineer did not intervene, when he watched the electrician pushing the contacts in the panel board.

If the emergency stop of the remote control box had been actuated when the davit arms were reaching their upper most position, the accident could have been prevented.

The Ship Management's lacking knowledge of the instructions for lowering of the lifeboat caused that 7 crewmembers were on board the lifeboat. The Investigation Division is of the opinion, that this was not the reason why the winch motor could not hoist in the first place, but it has obvious caused that more crew members were injured, when the boat dropped.

The Investigation Division is finally of the opinion, that following the accident the owner has initiated measures, which meets the causes to the accident as stated in this report.

9. Annexes

ANNEX 1 : Photos taken by the Maritime Safety Inspector from MSA NZ.

ANNEX 2 : Control circuit davit winch.

ANNEX 3 : Test Report of the FORCE Institute, Lloyds Certificate and DNVs Certificate.

ANNEX 4 : Activity Report for port lifeboat.

ANNEX 5 : Part 5 of the Instruction Manual For Life Boat Davit.

ANNEX 6 : Extract of Deck Operating Manual.

ANNEX 7 : Extract of Crew Training Manual.

ANNEX 8 : Poster at the davit.

ANNEX 9 : Report of Extraordinary Safety Meeting in NICOLAI MAERSK.

ANNEX 10 : Instructions by the Owner of 26 February.

Niels Mogensen
Deputy Chief of Investigation