



**BRAZILIAN MARITIME AUTHORITY  
DIRECTORATE OF PORTS AND COASTS**

**FATAL ACCIDENT WITH LIFEBOAT ON BOARD PLATFORM  
“OCEAN AMBASSADOR”, CAMPOS BASIN – RJ**

**17 MAY 2010**

**MARINE SAFETY INVESTIGATION REPORT**



**Reference: IMO Casualty Investigation Code - MSC-MEPC.3/Circ.2 13 June 2008/ Resolution MSC.255(84)**

## **I - INTRODUCTION**

For the purpose of effecting the collection and analysis of evidence, the identification of the causal factors and the elaboration of safety recommendations that should be necessary, in order to prevent that in the future occur similar maritime accidents and/or incidents, the Captaincy of the Ports of Rio de Janeiro (CPRJ) carried out a Marine Safety Investigation, in compliance with that laid down in the Casualty Investigation Code of the International Maritime Organization (IMO), adopted by Resolution MSC. 255(84).

This Final Report is a technical document that reflects the result obtained by CPRJ regarding the circumstances that contributed or may have contributed to trigger the occurrence, and not refers to any proving procedures for determination of civil or criminal liability.

Also, one should emphasize the importance of protecting the individuals responsible for providing information regarding the accident, and the use of information contained in this report for purposes other than the prevention of future similar accidents could lead to erroneous interpretations and conclusions.

## **II – SYNOPSIS**

On 17 May 2010 at 10.00 hours in the morning, the Marshall Islands flagged platform "Ocean Ambassador" was at position 23°39'20"S / 041° 27'50"W in the Campos Basin, 80 nautical miles from the Cabo Frio coast, carrying out the exercise of launching with its lifeboat nº 2, in compliance with Rule 19, sub paragraph 3.3.3 of the SOLAS Convention. When lifting this lifeboat, after carrying out the tests of motor and the spraying system, nearly at the height of the main deck (The deck of the lifeboat) same released itself from the eye bolt connected to the forward hook of the Triple 5 Release Mechanism, remaining vertical for some moments when the after hook, that at the moment supported all the weight of the lifeboat, released it to drop into the sea from a height of approximately thirty meters. As a result of this accident, two crewmembers died and another two suffered serious injuries.

The information about the accident was received by the Delegate of Macaé by telephone, and arrangements were started to send a team of expert Naval Inspectors of the Captaincy of the Ports of Rio de Janeiro (CPRJ) to board the platform, by helicopter, for the immediate steps of collection of evidence, initial collection of data, documents and information for the conducting of a Maritime Safety Investigation.

### III – GENERAL INFORMATION

#### a) Characteristics of the platform:

Vessel: OCEAN AMBASSADOR	Flag: Marshall Islands	AB: 13.804
Activity: Drilling of wells	Type: Plataforma	Propulsion: Motor
Port of Registry: Rio de Janeiro (AIT)	Hull: Steel	Length: 100,58m
Area of navigation: Open sea	Registry: 381E006093	IRIN: V7FZ9
Classification Society: American Bureau of Shipping		Built: 1974
Owner: Diamond Hungary Leasing Ltd		
Operator: BRASDRIL Sociedade de Perfurações Ltda		

#### b) Documentation (Certificates of the Platform Ocean Ambassador):

Classification Society	Certificates	Validity
American Bureau of Shipping	Certificate of Class	11/07/2013
American Bureau of Shipping	International Load Line Certificate	11/07/13
American Bureau of Shipping	International Sewage Pollution Prevention Certificate (ISPP)	11/07/2013
American Bureau of Shipping	International Oil Pollution Prevention Certificate (IOPP)	11/07/2013
American Bureau of Shipping	Mobile Offshore Drilling Unit Safety Certificate	11/07/2013
CPRJ	Minimum Safe Manning Certificate	09/12/12
Marshall Islands	Safety Radio	30/06/2012
Marshall Islands	Minimum Safe Manning Certificate	indeterminada
Marshall Islands	Registry	indeterminada
American Bureau of Shipping	Registry	indeterminada
American Bureau of Shipping	International Tonnage Certificate	indeterminada

c) Characteristics of the Lifeboat involved:

Craft: lifeboat nr 2	Propulsion: Motor
Seating: 60 pessoas	Hull: fiberglass
Manufacturer: Schat-Harding, Model MCN 28-60 (for 60 Crewmembers)	Serial number 119011#2
MFG (manufactured) on 10 April 2001	Weight 8107 pounds (3672 kg).
Approved by the United States Coast Guard – USCG	
Installed And commissioned on 16 October 2001	
Release Mechanism Triple 5, type SSSSS-555. Installed in October 2008	Manufactured by Survival Systems

In accordance with that laid down in the Brazilian Maritime Authority Norm for Open Sea Navigation – NORMAM -01/DPC/ 2006, Section II – Survival and Salvage Craft, Chapter 4 – Safety Material for Craft, Section 1, item 0405 line (b), the lifeboat involved in the accident is covered as a Survival Craft which is the collective means of abandonment of a vessel or maritime platform in danger, capable of preserving the life of people during a certain period, whilst awaiting aid.

On the occasion of carrying out the survey, the platform was operating in open sea and presented a good general aspect. The allotment of salvage material on board, excluding lifeboat nº 2 that had the accident, met the requirements established in the norms in force and was in apparent good state of conservation (Photo 1). The platform had been inspected on 17 November 2009 by naval inspectors of the Port Captaincy of Rio de Janeiro, not presenting deficiencies relative to lifesaving.



Photo 1 - Schat-Harding Lifeboat on board the Ocean Ambassador

Lifeboat nº 2, that had fallen into the sea, was still in the water upside down and secured alongside a support tug (Photo 2) to avoid its sinking by virtue of the damages resulting from the fall of approximately 30 meters. Due to its positioning and the risk of new accidents it was not possible for the surveyors to go on board to verify the allotment of material on board the lifeboat. For the same reasons it was also not possible to carry out tests with the systems of propulsion and steering.



Photo 2 – The damaged Lifeboat moored to the support craft.

#### **IV – CREW**

The language of work on the platform was English.

The List of Personnel embarked (People on board) has the names and functions of all the people on board the platform on the day of the accident.

In accordance with the register, the Master Coastwise (MCB) injured and deceased in the accident had embarked on the platform on the same day of the accident (17/05/2010) at around 10.00 hours. By the time that passed between the boarding of the Master and the accident that caused his death, it was concluded by the investigators that he had not had enough time to receive the transfer of service and not enough to read the register book with the notes of the Master Coastwise that he had relieved.

The platform, at the moment of the accident, was not complying with the foreseen in the Minimum Safe Manning Certificate that determines the existence on board of 01 (one) Deck

Officer exercising effectively the function of Deck Officer. This Officer is responsible for the lifesaving equipment, in accordance with that laid down in Art. 0404 of the Brazilian Maritime Authority Norm for Seafarers - NORMAM 13 (have as his responsibility the lifeboats and lifesaving appliances, as well as their launching appliances).

## **V – DATA OF THE PLACE OF THE ACCIDENT**

1. Local coordinates 23°39'20"S / 041°27'50"W, Campos Basin -RJ
2. Environmental conditions – At the moment of the accident, visibility was good, the sea was with waves of 1 to 3 feet (0.30m to 0.90m), weak wind direction SSW, intensity 5 to 10 knots and a clear sky

## **VI – SEQUENCE OF EVENTS**

In accordance with the information obtained by the surveyors in the place of the accident, an exercise was in progress of the routine of launching the lifeboat on 17/05/2010. The exercise consists of lowering the survival craft nº 2 (lifeboat) until the water, test its motor and turn to lifting it back to the platform. The exercise was being carried out in compliance with Rule 19, sub paragraph 3.3.3 of the SOLAS Convention transcribed as follows: “Except as laid down in the sub paragraphs 3.3.4 and 3.3.5, every lifesaving craft should be launched and maneuvered in the water by its crew designated to operate it, at least once every 3 months during the exercise of abandoning the ship”.

Previously to the exercise with the lifeboat itself, the rescue boat was lowered to evaluate the conditions of the sea after which, being considered adequate, the exercise itself was commenced.

Lifeboat nr 2 was lowered, with 4 people on board and placed in the water, without disconnecting the cables of the davit, by decision of the Offshore Installation Manager (OIM) concerned with the current. After the carrying out of the tests of the motor and the spraying system, which were considered satisfactory, the lifeboat hoisting was started back to the place of its stowage on board the platform.

Around one meter above the water the lifeboat hoisting was stopped for checking of the hooks, being executed by the crewmembers of the lifeboat and given as ready for restarting the hoisting. When the lifeboat was around two meters from the deck of stowage it had the hoisting again interrupted, this time due to the oscillations provoked by the rolling of the platform. That

was when a loud noise was heard and the eyelet of the cable of the davit, connected to the forward hook of the lifeboat release mechanism Triple 5 released itself, causing the lifeboat to take a vertical position being supported only by the after hook for some moments, when it also released the eyelet allowing the lifeboat to fall into the sea from an approximate height of 30 meters, turning over in the water and rolling about afterwards.

The cables of the davit and the rest of the components of the hoisting system were not broken, the eyelets as well did not present signs of rupture or wear (photo 3).



Photo 3 - cable and eyelets of sustentation of lifeboat nº 2 after the accident

The rescue boat was manned and lowered to rescue the lifeboat crewmembers victims of the accident. The damaged lifeboat was berthed alongside a support tug, where it remain until it was lifted and placed on board of same to be transported to a shipyard in the district of Caju, Rio de Janeiro. With the finding that there would have the need to disassemble the drive system of the hook, the lifeboat was moved to the operations base of BRASDRIL, in Macaé (Photo 4).



Photo 4 – damaged lifeboat in the installations of the company Brasdril.

## **VII – CONSEQUENCES OF THE ACCIDENT**

a) Personal accidents – As a result of this accident, two crewmembers died and another two suffered serious injuries. The injured crewmembers were removed for medical attention in a hospital in the city of Rio de Janeiro.

b) Material damage of the lifeboat

- The deck of the bow with fissures and cracks around the reinforcement of the orifice of passage for the fixation bar of the Triple 5 device.

- Hull at the stern with a big tear, cracks, fissures and scratches.

- Interior with damages to the controls of maneuvering and of action of the motor of lifeboat nº 2.

- Damage of the cable activator of the Triple 5 device at the stern that was compressed by the fixation bar of the Triple 5 against the hull of the lifeboat.

The damages compromise the structural condition of the lifeboat (total loss).

c) Pollution – there was no registry of pollution.

## **VIII – ANALYSIS OF THE DATA GATHERED**

The survey of the damaged lifeboat was carried out in the patios of the companies SERMETAL –RJ in the district of Cajú – Rio de Janeiro and BRASDRIL, in the city of Macaé –RJ. The functioning, mounting and dismounting of the Triple 5 device was demonstrated by the representative of the manufacturer, who came to Brazil exclusively for this purpose. These procedures were witnessed by the expert investigators of the CPRJ, by the Naval Surveyors (VN) of the Group of Technical Support of the Directorate of Ports and Coasts (DPC), by representatives of the owner, of the Classification Societies ABS and RBNA and of the National Agency of Petroleum and Gas.

During the demonstration with a new Triple 5 Release Mechanism device, the two positions of operation of the actuation lever, as shown in the 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual, page 7 of 27, were presented to those present:

a) position green: hooks closed or hooks armed. It is the obligatory position in order that the lifeboat be connected to the cable of the davit: and



b) position red: hooks open or hooks disarmed. It is the position in which the lifeboat may be disconnected from the cable of the davit.

These indications of operation comply with that laid down in the International Life-Saving Appliance (LSA) Code, EDITION 2010, item 4.4.7.6.5 which says that if is utilized a code of colours, green should indicate a hook correctly re-armed and red should indicate the danger of improper or incorrect adjustment.

From analysis of the data gathered, it is verified that the position of the hook at the time of the task of hoisting the lifeboat, should have been totally closed, with the lever of the release mechanism in vertical position. During the survey carried out it was verified that the position of the forward hook of the damaged lifeboat presented an opening of 24.5 mm (Photo 5) between the hook and the retainer of the forward device. The initial evaluation of the experts is that this opening would permit the passage of the eyelet of the cable of the davit. However this opening was verified after the accident and it cannot be affirmed that it was pre-existent to the event.



Photo 5 - Gap between the hook and the retainer of the release mechanism forward



Photo 6 – Existing Gap between the hook and the retainer of the undamaged lifeboat (11 mm)

Photo 7 to follow, taken by the experts on the occasion of the investigation of the accident, presents the position of the lever of the actuating device of the hooks of the damaged lifeboat, that instead of being vertical in the colour green (hook closed) was in an inclined position of around 45°, in the colour red in the position “half open” (it is reminded that the lever totally in the red position represents that the hook was open or hook disarmed, or that is the position in which the lifeboat can be disconnected from the cable of the davit).

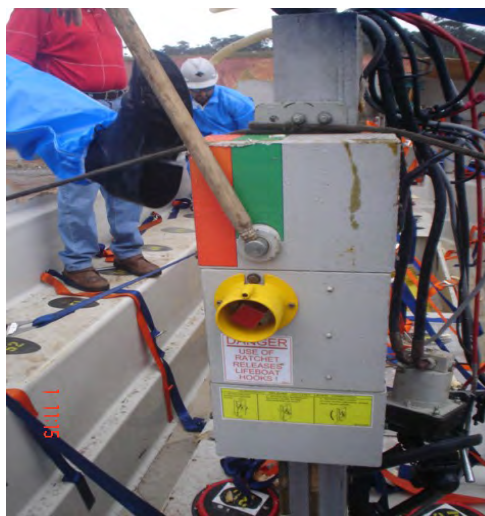


Photo 7- Release mechanism control box of the damaged lifeboat

As a result of the lifeboat having dropped in a free fall of a height of approximately 30 metres, there is no way to affirm with certainty if at any moment during the drill the lever was partially actuated, remaining in the incline position of around 45° (photo 7) and consequently causing partial opening of the hook.

In accordance with the 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual (manual of the manufacturer), even if there had been any accidental contact by any crewmember the lever would not act, as result of the system being locked by the action of the force of the weight of the lifeboat.

In the 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual, detailed information is supplied about the operation and maintenance of the release mechanism and the same manual establishes that it is an exigency, for reasons of security, that the maintenance personnel should be qualified to operate and repair the system of the hook. The same manual establishes furthermore that it is the responsibility of the employer the selection and the

competent qualification of the personnel involved in the maintenance and operation and the employer should demand that his employees study the information of safety and that the task be carried out in a safe manner.

The 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual should obligatorily be on board the platform, in accordance with the SOLAS Convention, Chapter III, Part B, Rule 20, sub paragraph 3.2 where is read: "Instructions for the maintenance onboard should be supplied in accordance with these instructions". The surveyors observed that did not exist on board the platform one copy of the mentioned manual where the procedures above are described, besides they verified further that the computerized system of maintenance of the owner also did not have procedures of maintenance of the device in question.

The Operating & Maintenance Manual states that the hook of the Triple 5 Release Mechanism only is released, when in loaded condition, if the emergency device is activated through a switch of the ratchet type which is kept in a place outside the device and which to be used it is necessary that the operator takes it from the storage place and puts it in the device as demonstrated in figure 1.

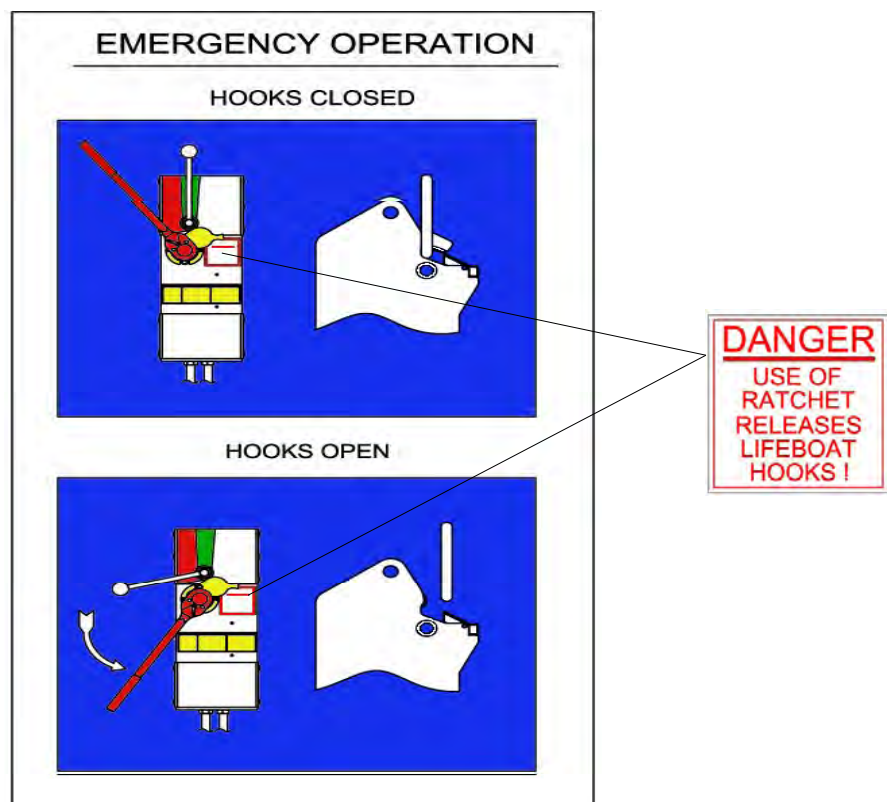


Figure 1 – emergency operation

The lifeboat has a weight of approximately 4 tons. The doubt that persists is relative to the cause that led to the releasing the eyelet of the davit, that was held by the hook of the lifeboat, it being suspended with the action of its own weight. There are no reports of action (accidental or on purpose) of the lever in the interior of the craft, which according to the manufacturer would be impossible to happen before the lifeboat floated.

In accordance with a video of the manufacturer of the Triple 5 Release Mechanism, which may be seen on the site [http://www.survivalsystemsinternational.com/triple5/triple5\\_video.html](http://www.survivalsystemsinternational.com/triple5/triple5_video.html), during a simulation the position of the hook of the Triple 5 device when in the position of hoisting the lifeboat is totally closed, with the lever of the device in the vertical position (colour green), as was demonstrated by the representative of the manufacturer during the survey carried out. Remember that was observed a considerable gap of approximately 11mm on the hook of the lifeboat that was on board the platform (photo6).

The opening of approximately 24.5mm in the hook of the forward Triple 5 Release Mechanism of the damaged lifeboat, presented before in photo 5, would allow the passage of the eyelet of the cable of the davit, through it. It was verified by photo 7 the position of the lever of the actuating device of the hooks of the damaged lifeboat inclined around 45°, in the position "half open" (RED), which could be due to the fact that the Teleflex cable of actuating of the hooks having been pulled and deformed during the accident (photo 8) causing displacement of the Triple 5 release mechanism.



Photo 8 – Teleflex cable deformed by action of the fall of lifeboat 2

The investigators verified, in the other similar lifeboat existing on board the platform, that the diameter of the eyelet of the cable of the davit, that is held by the hook (Photo 9) presents practically the same measurement of the opening of the forward hook of the damaged lifeboat after accident. They also verified that the hook has a movable part that is part of the project (Photo 9), where is indicated the retention device.



Photo 9-Retention Device, eyelet and hook

During the survey the investigators of the accident asked the representative of the manufacturer of the Triple 5 equipment, if it was normal the existence of a small opening in the hook of the Triple 5 Release Mechanism and he has replied that the normal situation is it to be totally closed.

At the end of the analysis it was concluded that there had not a breaking of components of the hauling device, it being possible to affirm that the eyelet passed through the clearance between the hook of the Triple 5 device and the safety retention, a clearance excessive and in disagreement with that recommended by 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual.

Also it may be affirmed, by statements of crewmembers of the platform, that there was ignorance of part of the crew, of the release mechanism of the lifeboat (Triple 5 device) as well as of its maintenance, conditions and functioning, principally of the opening of approximately 11mm of the hook of the device (photo 6).

## **IX – EVIDENCES**

### **a) Related to the PERSONNEL**

a.1) In the statements the crewmembers mention the hydrostatic sensor and one of them mention the safety pin revealing ignorance of the functioning of the “Triple 5” whose manufacturer claims as an advantage exactly the nonexistence of these two items;

a.2) The personnel involved on the drill had not had training given by the manufacturer, which should occur by the fact that the device being new, different and unknown to the crewmembers;

a.3) The crewmembers tend to generalize the functioning of the “hooks” which is interpreted as ignorance of the equipment in particular; and

a.4) One of the crewmembers directly in charge of the maintenance and operation of the Triple 5 release mechanism stated ignorance of the measurements and clearances established by the 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual.

### **b) Related to documents**

b.1) The 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual established that the distance that the hook should project itself is  $2 \frac{3}{8}$  ins, distance this that does not occur in the hooks of the lifeboats that are on board the platform (Figure 2).

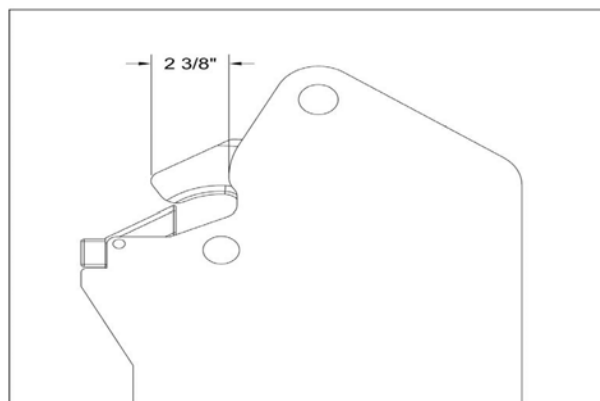


Figure 2 – Adjustment of the hook foreseen by the Triple 5 Release Mechanism Operating & Maintenance Manual

b.2) The 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual, in the section of maintenance, alerts that the clearance between the hook and the latch is regulated by the adjustment of the Teleflex cable of activation of the hooks internally on the lifeboat (item 4.2.2. sub-item f). However the Manual does not explain how to do it, being incomplete.

**b) Related to material**

There is no evidence of material failure.

**b) Related to the environment**

Despite having been considered adequate for carrying out the drill, the state of the sea caused the halt in the ascent of the lifeboat a little before the accident due to excessive oscillations and ended up, according to a witness, disturbing the lifesaving action.

**X – FAULTS AND CAUSAL FACT**

The faults, utilizing the model of James Beacon are fitted in eleven principal types:

- 1) Plan or equipment deficient or inadequate
- 2) Poor design/ design fault
- 3) Maintenance politics and planning defective
- 4) Bad procedures
- 5) Status of forced errors
- 6) Planning and conducting and inadequate availability of resources
- 7) Goals incompatible
- 8) Poor communication
- 9) Poor organization
- 10) Deficient training
- 11) Inadequate or ineffective barriers

In the case under study, the faults of greater fitting are referring to the Politics and planning of defective maintenance and deficient training. In accordance with the facts described before, it is verified that that laid down in Article 10 of the International Safety Management Code (ISM Code) that deals with the Maintenance of the Ship and of the Equipment was not being complied with. According to the article mentioned, the company (the owner) should ensure that

inspections are carried out in appropriate intervals, any non-conformity should be reported with its possible cause if known, that an appropriate corrective action be taken and registers of these activities maintained.

By the analysis of the evidence, observations and indications, there was no damage to the components of the Triple 5 Release Mechanism or the eyelet that provoked the accident in question, as well as the winch of the equipment of launching the lifeboat was actuated by a motor capable of hoisting it from the water with all of its capacity taken and all of its allotment of equipment. As the lifeboat was being hoisted with 4 (four) people on board at the time of its fall, it is verified that there was no overload on the hoisting motor.

It was made evident then that there was a passage of the eyelet through the clearance existing between the hook and the retainer. It is concluded that the determining cause of the accident was the incorrect adjustment of the Triple 5 Release Mechanism, motivated by the lack of access to technical material about the equipment to be operated, absence of training of the personnel embarked, faults in the safety management, as well as the lack of interest of these same professionals to request this material to the owner.

## **XI - PRELIMINARY LESSONS LEARNT AND CONCLUSIONS**

Despite the **lifeboat release mechanisms** installed in the life-saving craft being considered safe if operated and maintained adequately, in the last years various reports of investigation of accidents have been published all over the world, emphasizing the high number of accidents involving lifeboats, caused by defects of the mechanism of liberation "on-load/off-load during the training of the crewmembers, for faults of the planned maintenance and faults in the inspections of the lifeboats as a whole.

A lifeboat release mechanism meeting the requirements of the 1983 Amendments to the International Convention for the Safety Of Life At Sea, 1974 (SOLAS 74) is a complex mechanism and most accidents have been attributed to a lack of understanding of how this equipment works in relation to satisfactory release of the boat during launching and the safe and effective re-connection of the boat for hoisting following a launching.

Damage and casualties can result from either of these operations if crewmembers are not familiar with the operating procedures and fail to understand the principles of operation of the mechanism. Particular care needs to be taken to ensure that the 'on-load' hooks are properly connected to the lifting rings and the operating mechanism is locked in place before starting to



launch or hoist the boat. In addition, the equipment needs to be maintained regularly by trained and qualified persons to ensure that casualties do not result from a malfunction.

As laid down in the SOLAS Convention, Chapter III, Rule 19, subparagraph 3.3.3 "each lifesaving craft should be launched and manoeuvred in the water by its operational crew, at least once in each three months period, during an exercise of abandoning the ship". This alteration of 2004 is applicable to lifeboats that are not those designed for launching in a free-fall or those installed on ships that operate exclusively in short international voyages. This new editing eliminated the necessity for the members of the crew on board during the launching process.

By the facts compiled it is clear that the non-existence on board of the manual of operation and maintenance of the manufacturer (6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual), together with the lack of a presentation of the functioning and maintenance of the equipment by the manufacturer at the time of its installation on board, allowed, by the inexperience of the crewmembers in charge of the operation of maintenance and training of the crew, that the release device Triple 5 was not with the correct adjustment, that is, that it presented a clearance that exceeded the maximum permitted of 1/16 of an inch, so that the escape of the eyelet through that clearance was the cause of the accident.

Additionally it was verified that the 6.5 tonne Triple 5 Release Mechanism Operating & Maintenance Manual, is not clear as to the process of adjustment of the clearance by means of the position of the Teleflex cable in the box of actuation.

With regard to the manuals of operation and maintenance of the release devices of lifeboats, the IMO issued 26 May 2006, the Circular MSC 1205 that presents "*Guidelines for developing operation and maintenance manuals for lifeboat systems*". This circular was published due to the recognition that manuals of operation and maintenance badly constructed had contributed for a significant number of accidents involving means of rescue. The circular in question emphasizes the importance of clear signaling to help the members of the crew to understand the function of the critical components of the system.

As to the inexperience of the crewmembers charged with operations of maintenance and of the Triple 5 Release Mechanism, the Circular MSC1206/Rev.1 of the IMO of 11 June 2009, that deals with "*Measures to Prevent Accidents with Lifeboats*", defines the ambit of the inspection and maintenance expected for the crewmembers of the ships and the representatives of the manufacturers. From the crewmembers it is only expected the participation in weekly and monthly programmes of the routine of inspection and maintenance identified by the

manufacturer. All the other maintenance, including the annual operational test of the release mechanism with cargo, should only be carried out by persons certified by the manufacturer.

With reference to the training, in accordance with that laid down in Chapter 8 of the International Safety Management Code (ISM Code), the Company should identify potential situations of emergency on board, and establish procedures to respond to them and should establish training and exercise programmes to prepare for emergency actions. Chapter 10 of the same ISM Code identifies the necessity for the Company to prepare programmes for adequate maintenance in order to satisfy the demands of the regulations. Paragraph 10.3 deals with technical systems, whose failure may result in a dangerous situation. The safety management system should include specific measures destined to promote the reliability of such equipment or systems.

It is verified then that the accident in question could have been avoided if the various orientations mentioned had been observed.

## **XII - RECOMMENDATIONS**

In view of the lessons learned and conclusions, the following recommendations are formulated:

1) To the Brazilian Maritime Authority:

– Add to the lists of inspections of the Naval Inspectors annexed to NORMAM-01 the verification of the existence on board of the manuals of maintenance and operation of the equipment of release of the lifeboats, as well the existence of a translation to the language of the personnel that operate and maintain it;

– Adequate item 1104 b.2) of the Norms of the Maritime Authority for Vessels Employed in the Navigation of the Open Sea (NORMAM-01/DPC/2005) that deals with abandoning drills, to that laid down in the sub-paragraph 2.3.2 of the MSC Circular 1/Circ 1206/Rev.1, ANNEX 2 of the IMO, of 11 June 2009, concerning the exercises with life-saving craft with people on board; and

– In recognition of the problems related with accidents involving life-saving craft, all the owners of ships and platforms of Brazilian Flag shall be motivated to better know the lifeboat

release mechanisms existing on board, in order to identify the improvements, if there are any, that may be made.

2) To the International Maritime Organization (IMO):

– Establish the obligation of verification, by the organ that approved the equipment, of the clarity of the information contained in the manuals;

– Demand from the manufacturers that when installing this type of equipment, a demonstration be made “in situ” by personnel of the company or accredited by it., and such training should be registered and endorsed by the crewmembers of the vessel; and

– Include in the publication SOLAS, Chapter III, Part B. Rule 20, sub-paragraph 3.2 the obligation that the maintenance systems of the companies include all the specifications of the manufacturers of the equipment, principally those related to safety.

3) To the owners and crews:

- The Owners should consider the possibility of the use of Fall Preventer Devices (FPD) as a way to minimize the risks of injuries or fatalities in cases of faults in the devices of release of the life-saving craft, or accidental release of the sustenance hooks, giving additional safety. Nevertheless these devices should not be considered as a substitute for the release mechanisms. Despite not being obligatory their use in accordance with the SOLAS Convention, in case Fall Preventer Devices are installed, Circular MSC. 1/Circ 1327 of 11 June 2008 of the IMO should be observed, it deals with subject, with distinction for the following observations:

1. The Captain of the ship or the officer in charge of any operation of lowering or hoisting of life-saving craft should guarantee that, when they exist, the Fall Preventer Devices are in the proper place before starting any exercise, inspection, test and maintenance where people are on board the life-saving craft; and
2. The crew of the ship should familiarize themselves with the operation of Fall Preventer Devices installed in the life-saving craft of their ship. The procedures to be followed should be contained in the System of safety management foreseen in the ISM Code, as well as in the training manual of the ship.

- When lowering and hoisting of life-saving craft are carried out, it should be considered the use of a safety line (cable) operated on the floor below that where is installed the cradle of the craft, in order to diminish the rocking when this maneuver is being conducted under unfavourable wind conditions.



#### **List of Annexes**

**ANNEX A - Photos of the Expertise held in the Brasdril Company**

**ANNEX A**  
**Photos of the survey held in the Brasdril Company**



**Brazilian Maritime Authority - Directorate of Ports and Coasts  
Surveys, Naval Inspections and Technical Expertise Management  
Maritime Casualty Investigation Department (CIPANAVE)  
Fatal accident with lifeboat on board the Platform "OCEAN AMBASSADOR"  
Marine Safety Investigation Report**



**Brazilian Maritime Authority - Directorate of Ports and Coasts  
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