

**This Compendium contains the following Case Studies issued in year 2013:**

- 1) Case Study 1/ 2013 “PSC (USCG) vessel detention under MARPOL 73/78 Annex VI/14”
- 2) Case Study 2/ 2013 “General emergency alarm system inoperative in engine room”
- 3) Case Study 3/ 2013 “PSC detention of a ship out of service”
- 4) Case Study 4/ 2013 “PSC detention under MARPOL V/3 – illegal discharge of garbage”
- 5) Case Study 5/ 2013 “Fire in engine room resulted in complete loss of power (internal review of the USCG report of investigation into the fire onboard the cruise ship Carnival Splendor)”
- 6) Case Study 6/ 2013 “Heavy weather damage”
- 7) Case Study 7/ 2013 “Passage plan”
- 8) Case Study 8/ 2013 “Failure to report ME failure”
- 9) Case Study 9/ 2013 “Failure of Fired Auxiliary Boiler”
- 10) Case Study 10/ 2013 “Overdue surveys resulted in suspension of Class”
- 11) Case Study 11/ 2013 “Severe injured”



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## INCIDENT / NEAR MISS – CASE STUDY Nr. 1/ 2013 – 12 March 2013

### PSC (USCG ) VESSEL DETENTION UNDER MARPOL 73/78 ANNEX VI/14

#### WHAT HAPPENED

A recent USCG PSC inspection onboard a managed vessel ended with a detention. It was established that for three days, while operating within the North American Emission Control Area (NAECA), as defined by MARPOL Annex VI, the vessel was not utilizing compliant fuel oil (equal to or below 1% Sulphur) as the Master and crew were unaware of the applicable regulations.

In addition, the Master and Senior Officers onboard could not produce a Vessel General Permit and were unaware of the requirements outlined in the US EPA VGP.

The Master failed to advise the DPA of the detention which was lifted before departure as the vessel switched to compliant fuel (distillate in this case as no other low Sulphur oil was available onboard), read the EPA VGP factsheet that was provided by the USCG and departed without delay.

The DPA was advised about the detention and the above non-compliances by the vessel's Flag Administration.

#### ROOT CAUSES/ CONTRIBUTORY FACTORS

- Human Error: Inattention (Loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information);  
Procedural Error (Failure to follow an established procedures);
- Organizational/ Management Failure: Inadequate Implementation of Procedure/Policy (Failure to ensure procedures or policies are followed).  
Inadequate training (Inadequate technical knowledge due to insufficient training).

It was identified that the vessel was due to call USA and an e-NOI was submitted to EPA and coverage activated less than two weeks before first USA port of call. The Master and Chief Engineer who had both signed an acknowledgement of the Company policies failed to become familiar with the international and local regulations and Company procedures.

The Master and Senior Officers were not adequately familiar with the Safety/Environmental Management System, relevant Company Bulletins and required trainings.

#### PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS

- Training and familiarization with Company S&QEMS policies and procedures before embarking and once onboard will be reviewed .
- Applicable requirements as per vessel itinerary, voyage planning and communication shall be revised with reasonable advance in order to confirm the effective implementation.
- Masters and Chief Engineers in liaison with the Port Operations Department (Owners' or V.Ships') are reminded of the voyage risk assessment in order to plan bunkers accordingly well in advance for compliance with forthcoming operations in ECAs or other locally regulated areas.
- Masters, Chief Engineers and Officers required to revisit the following S&QEMS (cruise vsl) requirements :
  - FOM128 "Voyage Planning" and form SAF09,
  - FOM332 "Air Pollution (MARPOL Annex VI)", FOM250 "Bunkering" and the associated forms OP64 a/b/c/d "Marine Fuel Sulphur Record Book",
  - FOM 260 "Fuel Change Over" and form OP191 "LSFO Calculator",
  - Form SAF77 "Worldwide Cruising Environmental Standards".
  - Masters and crews of vessels calling USA are reminded on the VGP requirements and Company procedures per FOM338 "US EPA NPDES VGP Manual", the associated USVGP forms and the VGP CBT (Computer Based Training by Marlins) prior entering of the ship in these areas.

#### INTERNATIONAL REQUIREMENTS

1. MARPOL Annex VI
2. USCG SG-CVC Policy Letter 12-04 Guidelines for compliance and enforcement of the emission control areas established within the United States jurisdiction as designated in MARPOL Annex VI Regulation 14
3. US EPA Vessel General Permit
4. ISM Code 5.1 Master's responsibility and authority ; ISM Code 7 Shipboard Operations



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### **INCIDENT / NEAR MISS - CASE STUDY Nr. 2/2013 – 14 March 2013** **GENERAL EMERGENCY ALARM SYSTEM INOPERATIVE IN ENGINE ROOM**

#### **WHAT HAPPENED**

PSC Authority (Turkey) issued a notice of detention to the Master of a managed ship due to the general emergency alarm system signal not adequately audible in ER (purifiers room).  
(Detainable deficiency under Solas : absence, non-compliance or serious deterioration of lights, shapes or sound signals.

#### **ROOT CAUSE / CONTRIBUTORY FACTORS**

The main reason of the defect was identified in the malfunction of the main supply valve from the main air cylinders that led to malfunction of the alarm sounder system in the engine space.  
After closing / reopening, the valve was restored in normal open position and the General alarm system was back in normal service up to satisfaction of PSC Inspector.  
Nevertheless further to more detailed checks carried out on board, other defects in the system were discovered (solenoid valves, poor horns, dirty pipes) which have been rectified .

#### **PROPOSED CORRECTIVE / PREVENTIVE ACTIONS**

Shipboard Commands are reminded of the weekly test of the general emergency alarm system as per safety planned maintenance procedure (FOM 3 sect 360 cruise ship manual)  
The effectiveness of the system in the crew working areas should be checked by Shipboard Command in occasion of the periodical general emergency drills.

Periodical inspection, maintenance and tests of the alarms and associated horns / sirens in ER and in the other crew working spaces should be included in the Shipsure or equivalent software used for PMS.

#### **INTERNATIONAL REQUIREMENTS**

SOLAS 1981 Amend / Chapter II-2 / Reg. 13  
SOLAS 1991/1992 Amend / Chapter III / Reg. 50  
ISM Code 10 – Maintenance of the ship and equipment



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**INCIDENT / NEAR MISS – CASE STUDY Nr. 3/ 2013 – 25 March 2013**

**PSC DETENTION OF A SHIP OUT OF SERVICE**

**WHAT HAPPENED**

A managed vessel berthed in shipyard out of service and under repair, was detained by PSC due to vessel being party to Commercial Arrest and hence an Admiralty sale.

The above process invalidated the SMC, ISSC and other certificates, for at one point in time there was no actual Owner of the vessel

The PSC Officer reported that :

No evidence of inspection/repair was demonstrated on board.

The annual surveys for most statutory certificates were overdue and outside of the survey window Passenger certificate, which has no provision for a survey window, expired

Some of the statutory certificates , Class Certificate, IOPP and Load Line, had been removed from the vessel by authorized officers of the Gibraltar Supreme Court.

The vessel was, at the time of the inspection, under Admiralty Marshall's arrest and has no de facto owners which renders the SMC & ISSC invalid.

**ROOT CAUSES/ CONTRIBUTORY FACTORS**

Human error : Inattention: Loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information;

Judgment: Incorrect assessment, estimation, interpretation or opinion.

Procedural Error: Unintentional deviation from, or failure to follow an established procedure.

Lack of communication by Owner to Company Managers re Commercial Arrest and Admiralty sale of vessel has prevented the Company to take any actions aimed to avoid any potential problems related to ISM.

Unfortunately there might be no protection from detention of a vessel by a PSC, whilst in a shipyard under repair, in the circumstance that the vessel comes under a Commercial Arrest and further becomes subject to an Admiralty sale.

**PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

In accordance with Paris MOU procedures, a ship should not be inspected whilst laid-up and the inspection should be carried out after re-commissioning by the company/flag/RO.

Statutory certification is normally only needed when vessels are engaged on international voyages.

Therefore when a ship is scheduled for a period of inactivity (lay-up or dry-dock) depending upon the proposed length of the lay up, and taking into account any requirements of the coastal state of the lay-up location, the ship operator should consider whether to maintain or suspend these Certificates.

If a vessel is laid up for a prolonged period the Flag State may authorise suspension, or cancellation of statutory certificates as long as this is compatible with the location and the requirements of the responsible coastal State.

**INTERNATIONAL REQUIREMENTS**

Solas 74 Ch. 1 Reg. 7

Annex 10 of the Council Directive 2009/16/EC (Criteria for detention of a ship)

Memorandum of Understanding on PSC

ISM Code 11.1 - Documentation



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**INCIDENT/ NEAR MISS – CASE STUDY Nr. 4 / 2013 (12 April 2013)**  
**PSC Detention under Marpol V/3 - Illegal Discharge of Garbage**

**WHAT HAPPENED**

A group-managed vessel has been detained by PSC for discharging category “C” (domestic waste (eg paper products, rags, glass, metal, bottles, crockery etc) garbage into the sea in March 2013.

This discharge had been however diligently recorded in the vessel’s Garbage Disposal Record Book by the ship’s staff.

**ROOT CAUSE/ CONTRIBUTORY FACTORS**

Human Error:

Inattention (Loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information)

Procedural Error (Failure to follow an established procedures)

Organizational/ Management Failure:

Inadequate Implementation of Procedure/Policy (Failure to ensure procedures or policies are followed)

Inadequate training (Inadequate technical knowledge due to insufficient training)

Crew were unaware that the disposal of paper, glass and metals was prohibited when the revised Annex V (regs.3, 4 and 6) regulations entered into force on the 1st January 2013 (as training programs give allowance for re-joiners not to undergo training again if they have done it within the last 12 months).

**PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

Please kindly revisit the relevant SMS section on garbage management and the updated Garbage Disposal Log (ie SMS form SAF19) accordingly:

- large cruise ship SQEMS - FOM 333;
- SMS “Light Ropax” - section 4.14 which has been also recently revised

All ships should be receiving these days the revised training package from our Training Dept where the environmental training materials have been updated accordingly

Once the training package is received onboard (ie within the next couple of weeks) - please schedule and complete the updated garbage management training (ie the revised Tier 1 and 2 environmental training programs as listed in form SAF58 “Onboard Training Matrix”, part 1, section2, for all returning crew onboard for the next six months (and disregard in the interim the SAF58 allowance for re-joiners not to have such training again if they had done it within the previous 12 months)

**INTERNATIONAL REQUIREMENTS**

1. MARPOL Annex V, reg.3, 4 and 6
2. ISM Code 6.3/6.4 Resources and Personnel



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**CASE STUDY Nr. 5/ 2013 (22 July 2013)**

**FIRE IN ENGINE ROOM RESULTED IN COMPLETE LOSS OF POWER**

**(INTERNAL REVIEW OF THE USCG REPORT OF INVESTIGATION INTO THE FIRE ONBOARD THE CRUISE SHIP CARNIVAL SPLENDOR)**

**WHAT HAPPENED**

The report reads :

*"On November 8, 2010 at 0600 (Local Time), the Carnival Splendor was underway off the coast of Mexico when the vessel suffered a major mechanical failure in the number five diesel generator.*

*As a result, engine components, lube oil and fuel were ejected through the engine casing and caused a fire at the deck plate level between generators five and six in the aft engine room which eventually ignited the cable runs overhead. The fire in the cable runs was relatively small, but produced a significant volume of smoke which hampered efforts to locate and extinguish it.*

*In addition, the fire caused extensive damage to the cables in the aft engine room, which contributed to the loss of power"*

**ROOT CAUSE / CONTRIBUTORY FACTORS**

The Engine Failure :

the cylinders in one of the large diesel engines sustained a catastrophic failure with the rods and pistons cracking and exploding out of the engine which permitted oil and fuel oil to ignite. Pistons had sustained long term metal fatigue, which was not checked due to an absence of appropriate maintenance (and record keeping by Carnival) with other parts of the engine showing severe, advanced corrosion reflective of an absence of regular inspection and maintenance.

The loss of power was the result of the significant fire damage to the wires and cables in the aft engine room.

As the vessel lost power within 9 minutes of the engine failure, the only way to have prevented the loss of power in this instance was to prevent the spread of fire to the cable runs above DG5 and DG6.

Hi-Fog system :

failure to take quick and prompt action to extinguish a fire led to major, negative downstream effects.

In this instance, the delay in the automatic activation of the Hi-Fog system, in conjunction with the manual reset of the fire detection system, adversely affected the system performance.

As a result of the intervention by the bridge watch officer, the activation of the Hi-Fog local protection system for DG 5 and 6 was delayed by approximately 15 minutes.

The lack of manual activation of the Hi-Fog system by the engineering watchstanders, as well as the resetting of the fire alarm panel by the bridge watchstanders were critical mistakes which allowed the initial fire to burn without impediment for several minutes and propagate to the overhead cable runs.

Ineffective Fire fighting strategy and actions:

lack of crew familiarity with immediate casualty control procedures for engine room fires.

lack of crew familiarity with the engine room layout and firefighting strategy and procedures for engine room fires.

Poor isolation of the affected space and maintenance of smoke boundaries.

Poor choice of fire extinguishing equipment (portable dry chemical fire extinguishers vs fire hoses)

The Captain's decision to ventilate the aft engine room before the fire was fully extinguished.

Failure of the CO2 system :

The problems identified with the CO2 system installation and activation procedures, as well as inspection protocols. The first attempt to activate the CO2 system from the remote location failed. Subsequently, ship's crew attempted to activate the system manually from the CO2 room. The second attempt also failed because the section valve for the aft engine room was inoperable. Additionally, after pressurizing the CO2 system numerous fittings and hose connections within the CO2 system leaked.

**PROPOSED CORRECTIVE / PREVENTIVE ACTIONS**

The following actions have been considered by the Company for implementation :

The Company : internal review of the current fire-fighting strategy and procedures and associated crew training (NVIC 3-08, NVIC 6-03Change 2 and NVIC 6-91 provide guidance to Coast Guard PSCOs for the conduct and evaluation of fire drills) for any potential lack of effectiveness .



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Shipboard Commands : to enhance firefighting training in ER spaces in order to test specific firefighting strategies for each engine room space on board.

Engine planned maintenance and periodical maintenance must be followed as per Company's and engine manufacturer instructions and properly recorded (f.i. no additional historical data was kept pertaining to engine operating pressures or temperatures, of exhausts, lube oil, fuel oil, air charge, coolants, etc.

While the vessel had the technology and software systems to collect the information, the systems were not set up to capture and store the data. Furthermore, engineers did not have a system in place to manually record engine data, and were not required to review engine operating parameters)

Deck and Engine officers are reminded that all alarms must always be investigated.

All shipboard personnel must be familiar with the firefighting theories and with the main firefighting appliances that are installed and/or provided on board.

Review of the FF systems documents (operative procedures relevant to fixed fire extinguishing system should be verified for updating, and confirmation of correct activation procedures in accordance with the system design and characteristic ).

Shipboard command are encouraged to carry out an internal hazard on board in regard of a potential impact of significant fire (irrespective of likelihood) in the ER spaces category A in order to determine potential weaknesses in existing fire prevention, detection and protection arrangements and with regard to potential single points of failure that could lead to a blackout (flow chart provide for guidance)

### INTERNATIONAL REQUIREMENTS

Solas II-2 Part C Reg 7, Reg. 10

Solas II-I – Part D (Electrical installation)

FSS code Ch. 8

MSC / Circ. 913 GUIDELINES FOR THE APPROVAL OF FIXED WATER-BASED LOCAL APPLICATION FIRE-FIGHTING SYSTEMS FOR USE IN CATEGORY A MACHINERY SPACES

ISM Code Ch 8 Emergency Preparedness

ISM Code Ch 10 Maintenance of ship and equipment





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## **CASE STUDY Nr. 6 / 2013 (29 July 2013)**

### **HEAVY WEATHER DAMAGE**

#### **WHAT HAPPENED**

At 19:10 UTC on 12 January 2013 a managed ship was on passage from South Georgia to Elephant Island (Antarctica), in stormy weather conditions with winds over 50 knots and swells reaching 8 meters of height, when the vessel was struck by a rogue wave which destroyed one of the frontal bridge windows and swamped the whole bridge and relevant radio and navigational equipment, causing a temporary loss of propulsion and steering.

Four crew members sustained injuries due to the impact in the wheelhouse, including the Captain .

Minor structural damages were initially reported on the forward of the ship.

The vessel, rapidly resumed the navigation, with main propulsion control in the ECR and steering control in "emergency mode" from the steering gear room; later on, the Master in agreement with the Company , decided to alter the course of the ship, heading back to Ushuaia.

Company emergency response plan activated by the emergency response group ashore.

#### **ROOT CAUSE/ CONTRIBUTORY FACTORS**

The following contributory factors have been identified and analysed in order to prevent recurrence :

External conditions : adverse weather conditions ;

The ship was experiencing severe weather conditions and heavy seas.

Equipment failure: ( breach of structural integrity ; the bridge windows in the specific)

A rogue wave smashed on one of the bridge windows and likely the wave energy peak impacted in a very narrow area. Nevertheless it is not known if the impact of the wave exceeded the designed strength of the windows.

Ship design: the navigation Bridge layout and the wheelhouse height might have had a substantial contribution as con-causes as there is literature about past incidents suffered by same or even bigger sized ships, with common similarities in the position of the wheelhouse.

Human Error : Judgement ; incorrect assessment or estimation;

Procedural Error : unintentional deviation from or failure to follow an established procedures ;

Due to a likely underestimation of the prevailing adverse weather conditions in the area, it was decided by the shipboard command, not to put the storm shutters of the bridge windows at the departure from Ushuaia. The storm covers/shutters, could have helped in avoiding or at least, in mitigating the damages to the Bridge. However, further to a review of a short video recorded on the Bridge approximately one hour before the incident, it is evident the ship was steadied at sea and only sporadic splashes of waves were reaching the bridge windows and the fwd open deck.

The internal investigation has revealed that some slotted screws of the bridge windows were shorter than the original ones. The salt found under several compression bars of other windows, and the pressure caused by crystals growth suggest that some tensions could been unevenly develop, causing localized stress on the glass. However, the bridge windows have not been substantially at risk of failure with severe weather conditions.

The Company, having analysed the information collected in the course of the internal investigation, has determined that the probable cause of the damages to the ship and of the injuries suffered by her crew was extraordinary waves breaking over the bow during the ship 's unavoidable encounter with severe weather and heavy seas.





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## PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS

The Company has proposed :

- 1) To review the structural lay-out of deck 4 front bulkheads and the design and installation of a pressure exhausting device ( as this could be a fair solution to avoid big pressure while waves splash against the windows)
- 2) To ensure that from now on when glass is removed from its frames , it is refitted in the presence of Class surveyor and the relevant operation should be duly recorded
- 3) To regularly inspect glasses windows and relative structures by professional companies, possibly during dry-dock (especially for vessels trading in these weather exposed areas)
- 4) SMS Form Saf 44 to be reviewed in order to enhance the preventive use of the storm covers in adverse weather conditions.
- 5) To verify the possibilities to add an additional steering control on both rudders from Engine Control room in a follow-up steering mode
- 6) To circulate the incident report (this Case Study) to all managed vessels including but not limited to the units having similar Bridge lay-out, for review of the lesson learnt.

Masters are reminded of the following :

1. Effective enforcement of the Company policies on bridge access by personnel without operational functions
2. To review the relevant Risk Assessment (dangerous phenomena due to heavy weather); in this regard Masters are reminded of the importance to complete a proper assessment of the prevailing weather and sea conditions in respect of their own vessel, when deciding when and how to heave to.  
A proper understanding of own vessel's characteristics and behaviour in these conditions would assist to prevent any dangerous situation from developing.

All Masters should refers to the following circualrs for further guidance, (in attachment) :

- IMO Resolution A.893 (21) "Guidelines for Voyage Planning" (and the IMO MSC.1/Circ.1228 "Revised guidance to the Master for Avoiding Dangerous Situations in Adverse Weather and Sea Conditions" )
- MGN 271 - The Protection of Windows and Side Scuttles of Passenger Ships by Deadlights and Storm Covers.
- MIN 357 Navigation Safety: Guidance to the Master for Avoiding Dangerous Situations in Adverse Weather and Sea Conditions



## INTERNATIONAL REQUIREMENTS

1. Solas Chapter V - Safety of Navigation
2. IMO MSC 1/Circ 1228 Revised guidance to the Master for avoiding dangerous situations in adverse weather and sea conditions
3. ISM Code ch. 7 - Shipboard Operations



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## **CASE STUDY NR. 7/13**

### **PASSAGE PLAN**

#### **WHAT HAPPENED**

A recent inspection by third party on board a managed vessel ended with various defects on navigation planning and its execution. It was raised that the passage plan Form SAF 9 Voyage plan was not executed properly on navigational charts.

Discrepancies found between passage planning checklist and marking on nautical charts and publications in use:

Position fixed interval every hour instead 30 minutes

Double position fixing (radar-GPS) no evidence found

Missing parallel index distance

Missing bearing and range measurement check lines

Missing reporting points

No records of Navtex warnings

No Navtex message were found to be charted

No printout of navigational warnings

No Navigation information charted (Temporary and preliminary Notices to Mariners, Navarea warnings)

Admiralty Pilot books incorrectly updated

#### **ROOT CAUSE/ CONTRIBUTORY FACTORS**

Human Error: Inattention

Procedural error: failure to follow an established procedure

Organizational/Management Failure

Lack of supervision, Poor Oversight, Inadequate Training:

Failure to follow an established procedure

#### **PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

The ship :

Training and familiarization with Company SQEMS policies and procedures before embarking and once onboard should be more efficient and thorough.

Shipboard Commands are reminded of the importance of:

passage plan development as aimed to establish a safety and safe passage and prevent hazards

check, assess and discuss the voyage plan before departure with all Bridge Team and relevant Officers

Deck officers are reminded of the procedures in FOM 6 sect 128 Voyage Planning as recently revised and are required to effectively implement these in the shipboard routine.



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The Company:

This case study is :

circulated fleet wide as lessons to be learned and for review of the DPA at the next S&Q meeting

Superintendents are reminded to carefully check the compliance on Voyage Passage Planning as described on FOM 6 sect 128 , in occasion of the next internal audit to be carried on board managed vessels,

#### INTERNATIONAL REQUIREMENTS

1. SOLAS CHAPTER V
2. IMO RES. A.893(21) Guidelines for Voyage Planning
3. ICS Bridge Procedure guide
4. ISM CODE 7 shipboard operations ; 5 Master Responsibility and Authority



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## **INCIDENT/ NEAR MISS – CASE STUDY Nr. 8/ 2013 (9 October 2013)**

### **Failure to report ME failure**

#### **WHAT HAPPENED**

The ship was on passage from Civitavecchia to Messina (IT) when experienced a failure to ME #1 in the night. After several attempts to restart the ME #1, the Master, upon evaluation of the favourable weather conditions, confirmation on availability of tug assistance on arrival, and having considered as acceptable all risks associated to the navigation with a single ME, decided to resume the passage and proceed to Messina port with the only ME #2 running.

On arrival the Master did inform the Pilot of the problem to ME #1; the information was then passed by the Pilot to the local Port State Authority and VTS Messina.

Once in port at Messina, the Italian Coast Guard notified the Master that a Police investigation was in progress for not having promptly notified Messina Vessel Traffic Control of the engine failure, in breach of the Italian Government Decree 196, art. 17 of 19/08/2005 (in application of the EU Directive 2002/59/EC).

The first contact with the Company's DPA was made at 8:00 a.m. via telephone (approximately 9 hrs later the engine failure).

In consequence of the above:

The Master was requested to appoint a lawyer and declare his address to the Authority for notifications related to the matter as person subject to Police investigation in accordance with Art. 161 C.P.P. (Codice Procedura Penale).

The local Port State Authority decided to carry out an Expanded PSC inspection.

An occasional Class survey was urgently required in order to ascertain the extent of the damage and amend the Class Certificate as the ship was no longer complying with the Rule requirements.

#### **ROOT CAUSE/ CONTRIBUTORY FACTORS /**

Human Error:

(Inattention) Loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information.

(Procedural Error) failure to follow an established procedure.

(Judgement) Incorrect assessment, estimation, interpretation or opinion.

Organizational Management Failure:

(Inadequate Implementation of Procedure/Policy) Failure to ensure that procedures or policies are followed.

Failing to inform the Coastal State, resulted in a Police investigation for the Master (and a PSC expanded inspection) due to the violation of the Italian Government Decree 196, art. 17 of 19/08/2005 (in application of the EU Directive 2002/59/EC).

Failing to promptly inform the DPA (according to SQMM Ch 3, Ch. 10, FOM 102, FOM 380 former VSI Bull. # 54), or the deputy DPA or any of the Company's representatives, definitely precluded the possibility for the Company to assist the Master in the follow up actions since the very beginning.

#### **PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

- To remind all managed ships of the notification procedures laid down in the SMS Manual.
- To inform all Masters of the legal implications and applicable sanctions related to violation of the notification requirements foreseen by DL 196 Art. 17 (EU Directive 2002/59/EC)
- An extraordinary safety meeting immediately held in the office with the scope to inform all DPAs of the occurrence, regulatory requirements and lesson to be learned
- This case study will be circulated to all Company's managers and shipboard commands as lesson to be learnt



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#### INTERNATIONAL REQUIREMENTS

- DIRECTIVE 2002/59/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC
- Decreto Legislativo 19 agosto 2005, n. 196 "Attuazione della direttiva 2002/59/CE relativa all'istituzione di un sistema comunitario di monitoraggio e di informazione sul traffico navale"
- Solas Chapter I Part B Regulation 11 – Maintenance of conditions after survey
- ISM Code Chapter 9 – Reports and analysis of non-conformities, accidents, and hazardous occurrences

**INCIDENT/ NEAR MISS – CASE STUDY Nr. 9/ 2013****Failure of Fired Auxiliary Boiler****WHAT HAPPENED**

Vessel was in passage between London and Leith, when suffered a failure of the pressurized water in a fired auxiliary boiler, horizontal fire tubes type.

During normal exercise boiler ended to be with very low level of water, with no intervention of the fire safety shut down

Apparently the very low level switch finally started the stand-by feed pump which filled/flooded the boiler with cold water and leading to the thermal shock and following devastating damages

**Sustained Damages:**

The combustion chamber (an heavy steel tube ) deformed/crunched direct cause thermal shock and the after tube nest plate cracked on the welding seam along the perimeter cause the stress of dilatation.

The boiler laid in condition beyond re-use and needed radical reconstruction

**ROOT CAUSE/ CONTRIBUTORY FACTORS**

Although not all the causal factors are known, the internal investigation has revealed that:

Level Transmitter connected to general automation “Norcontrol” was not working.

- Low Level ( capacity type ) had failed to trig the alarm
- Low-Low Level ( capacity type ) had failed to shut down the burner
- Both visual Klinger type levels have been found with purge valves and line obstructed and therefore out of use, one level purge valve was missing its handle.
- It is unclear if the stand-by feed pump has been manually started or a sudden recover of LLL functionality did start the a.m. pump.

Root causes and contributory factors :

Inadequate Implementation of Planned Maintenance program, failure to ensure planned maintenance is followed

Loss of attention , failure to detect a critical situation and related use (improper)  
Inexperience, Poor oversight with lack of supervision , absence of proper situational guidance and instruction to operating personnel

**PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

PLANNED MAINTENANCE INTERVALS TO BE REVISED :

THE QUARTELY SAFETY DEVICES A SHOULD BE ON MONTHLY BASIS

DURING THE ANNUAL TECHNICAL INSPECTIONS BOILER TESTS AND RELATED SAFETY DEVICES SHOULD BE TESTED AND REPORTED IN THE OP 3 VESSEL TECHNICAL INSPECTIONS, WITH SIGNIFICANT PHOTOS AND MEASUREMENT ENCLOSED.

**INTERNATIONAL REQUIREMENTS**

ISM CODE CHAPTER 10 MAINTENANCE OF THE SHIP AND EQUIPMENT

SOLAS CHAPTER II-I REG. 32 STEAM BOILERS AND BOILER FEED SYSTEMS



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## INCIDENT/ NEAR MISS – CASE STUDY Nr. 10/ 2013 (15 November 2013 )

### Overdue surveys resulted in suspension of Class

#### WHAT HAPPENED

A managed ship had Class suspended due to overdue surveys (boiler survey).  
Flag State automatically notified by Class as a valid Class certificate is a prerequisite for continue registration.  
Class reinstated upon submission of the request for Class survey at the next port of call.

#### ROOT CAUSE/ CONTRIBUTORY FACTORS /

##### Human Error:

(Inattention) Loss of attention, not paying attention; the failure to detect, attend to, or be aware of critical or significant information.

(Procedural Error) failure to follow an established procedure.

(Judgement) Incorrect assessment, estimation, interpretation or opinion.

##### Organizational Management Failure :

(Inadequate Implementation of Procedure/Policy) Failure to ensure that procedures or policies are followed.

Shipboard Command failed to maintain an effective control of ship's certificates and Class Status (SQMM 14.2/14.3 Ship's Certificates and FOM 228 Vessel Certification and Class Records) .

Company failed to timely review the Class Status that resulted in late arrangements for Class survey.  
Notifications generated in automatic by the Class alert service have been overlooked by the Company as incorrectly addressed (mailing list not updated).

#### PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS

##### The ship:

Master and Chief Engineer are reminded of the shipboard command responsibilities about the preventive control of the ship certificates and class surveys (SQMM 14.2/14.3 (Ship's Certificates) and FOM 228 Vessel Certification and Class Records )

##### The Company :

Ship Managers and Superintendents requested to verify their current subscriptions to the relevant Class Alert service for each managed ship;

Ship Managers and Superintendents are also recommended to adopt a more proactive approach by promptly informing colleagues or HOD when receiving, even by mistake, notifications related to overdue items, conditions of Class or any issues that might affect the validity of the SOLAS, Load Line and MARPOL Certificates of any managed vessels.

Shipboard Command and Company's managers are reminded that :

According to internationally procedures, **the class will automatically be suspended** :

- by the due date, if surveys towards class renewal have not been completed or are not under attendance prior to the ship's resuming trading.
- if any survey is not completed within the prescribed due date/time range.
- at the end of the period fixed, if a condition of class is not dealt with or postponed respectively and
- that any suspension of class will be reported to the competent flag state authority of the respective vessel and the IACS permanent secretariat.

The Class Status and relevant surveys, with dates of performance, due dates and over due dates as well as dates for Ship Safety and other Certificates are to serve as guidance. It is recommended to always compare these data with ship's files.

This report will be circulated to all managed ships and relevant managers as case study / lesson to be learnt.





V. Ships Leisure S.A.M.

INTERNATIONAL REQUIREMENTS
Solas Ch. II-1 Reg 3-1 Solas Ch. I Reg. 6 – (Inspection and Survey) Solas Ch. I Reg. 7 – (Survey of passenger ships) Solas Ch. I Reg. 11 – (Maintenance of conditions after Survey) ISM Code Ch. 10 – (Maintenance of the ship and equipment) ISM Code Ch. 11 – (Documentation)



## **Crew Accident – CASE STUDY Nr. 11/ 2013 (29 November 2013 )**

### **Severe injured**

#### **WHAT HAPPENED**

A crew accident occurred to a managed ship while cutting a pipe using a hand angle-grinder while the vessel was in Dry Dock condition, where a crew member was severely injured and immediately hospitalized. The Crew member sustained deep lacerations and L – shaped cut of 20 cm on his right anterior neck, right mandibular area and shoulder and he underwent to a surgery.

#### **ROOT CAUSE/ CONTRIBUTORY FACTORS /**

##### **Human Error:**

Procedural Error -Failure to follow an established procedure.

Judgment - Incorrect assessment, estimation, interpretation or opinion.

At the time of the injury the crew member was found not wearing any PPE as per assigned job.

The crew member attended to a various safety briefing held from Shipyard as per shore procedure.

##### **Organizational Management Failure :**

Inadequate Implementation of Procedure/Policy - Failure to ensure procedures are followed.

Lack of supervision - The absence of proper situational guidance, and instruction to operating personnel.

No job plan and related risk assessment was in force

No supervision was in place

No on board briefing was held to inform all the crew members about the safety awareness and relative risk during a vessel in DD condition.

#### **PROPOSED CORRECTIVE/ PREVENTIVE ACTIONS**

##### **The ship:**

- Ship's Senior Management is reminded of the shipboard responsibilities about the proper procedure to be followed regarding the safety at work place FOM 3 section 323.
- A detailed specific risk assessment is to be carried out reflecting the scope of work and control measures to be implemented to reduce the risks as low as reasonably practicable.
- Safety hand out and briefing shall be prepared in advance and handed to all crew member highlighting the following info:
  - PPE and proper use
  - DD risk and associated hazards
  - DD Safety emergency procedure
  - DD Assembly Station
- Continuously improve safety awareness by means of familiarization, induction and training.

##### **The Company:**

- The company will review the vessel safety procedure regarding the ship in Dry Dock and/or Repairs condition

This report will be circulated to all managed ships and relevant managers as case study / lesson to be learnt.

#### **Procedures and guidelines**

FOM 3 Section 323

FOM 5 Section 550

The ISM Code 1.2.2 as amended

The ISM Code 5.0 as amended

The ISM Code 7.0 as amended

ILO MLC 2006 Reg. 4.3 Health and Safety protection and accident prevention

(COSWOP)Code of Safe Working Practices for Merchant Seamen