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M/V "NORTHERN VITALITY"

LOSS OF CONTROL WHEN MANOUVERING ON APPROACHES
TO PORT OF KOPER
ON
JANUARY 6, 2015

National occurrence no: 1/2015
EMCIP casualty No: 168/2015

Extract from
The Slovene Maritime Act
(Accident Investigations)
Article 200.a

The purpose of the investigation of maritime accidents in accordance with this Act is not a determination of liability or blame, but determining the causes of the accident and prevents similar accidents.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AB	-	Able seaman
AIS	-	Automatic Identification System
ALB	-	All Weather Lifeboat
ARPA	-	Automated Radar Plotting Aid
BA	-	British Admiralty
BNWAS	-	Bridge Navigational Watch Alarm System
CA	-	Certifying Authority
CoC	-	Certificate of Competency
COG	-	Course over the ground
COLREGS	-	International Regulations for the Prevention of Collisions at Sea 1972 (as amended)
CoSWP	-	Code of Safe Working Practices
CPA	-	Closest Point of Approach
CPP	-	Controllable pitch propeller
DGPS	-	Differential global positioning system
DSC	-	Digital Selective Calling
ECDIS	-	Electronic Chart Display and Information System
EU	-	European Union
GMDSS	-	Global Maritime Distress and Safety System
GPS	-	Global positioning system
gt	-	Gross tonnage
IMO	-	International Maritime Organisation
ISM Code	-	International Safety Management Code
kt	-	Knot
LED	-	Light emitting diode
MMSI	-	Maritime mobile service identity
nm	-	Nautical miles
NPD	-	Nominated Departure Point
OOW	-	Officer of the watch

RAM	-	Restricted in Ability to manoeuvre
SAN	-	Surveyor Advice Note
SAR	-	Search and Rescue
SMC	-	Safety Management Certificate
SMS	-	Safety Management System
SOG	-	Speed Over Ground
SOLAS	-	International Convention for the Safety of Life at Sea 1974, as amended
STCW	-	International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended
t	-	Tonne
TSS	-	Traffic Separation Scheme
USB	-	Universal serial bus
UTC	-	Universal Time Co-ordinated
VDR	-	Voyage Data Recorder
VHF	-	Very High Frequency (Radio)
VTS	-	Vessel Traffic Services

TIMES: all times used in this report are UTC+1 unless otherwise stated

SYNOPSIS

At 1844 on 6 January 2015 the Antigua and Barbuda's registered container vessel's '*Northern vitality*' while entering Basin I in Port of Koper, Slovenia, main engine did not respond to the command "Dead slow astern" neither at emergency control.

First tug boat was fastened astern before engine black out and at Master's order begun to pull backward, while second tug boat started to assist after the emergency occurred.

Ship was safely stopped and pushed to the berthing position without any danger to the property or environment and it was berthed with her port side at 1918. Both tugboats were released at 1930.

After the careful examination of the malfunction of the main engine, control air pipe found to be clogged/blocked by the dirt. Control air supply piping has been blown out and cleaned and at 2200 engineers tested main engine. No further deficiencies were found and Master was informed everything works well.

The investigation established that:

- Maritime accident and incident investigator was informed about the incident on 7 January 2015 (next morning) at 0736, almost 13 hours after the incident by the Slovene maritime administration.
- Ship is equipped with NetWave NW-4010 Voyage Data Recorder, but Master and OOW failed to press 'DATA' button to ensure that VDR data is saved and available for further examination following an incident.
- It was found that such a request was not written in Master's standing orders at the bridge.
- Due to the high attention of the Master and Pilot, engine failure was noticed immediately and proper action was taken with employment of second tug boat to assist.
- Immediately after the berthing engineers discovered and resolved main cause of the engine failure and informed Master.
- No further actions were needed.

Recommendations have been made to the owners of the ship to request from their masters to include VDR data preservation in case of accident or incident in on-board standing orders notice. Also, proper maintenance and testing of the ship's equipment should be point of concern.

SECTION 1 – FACTUAL INFORMATION

PARTICULARS OF "NORTHERN VITALITY" AND INCIDENT

SHIP PARTICULARS

Vessel's name/Call sign	NORTHERN VITALITY / V2GY
Flag	Antigua and Barbuda
Classification society	Germanischer Lloyd
IMO Number	9122423
Type	2808 TEU Class Container Carrier
Registered owner	Erste "Rolland" Shipping, GmbH & Co. KG, Rolandsbrucke 4, 20095 Hamburg, Germany
Manager	Norddeutsche Reederei H. Schuldt GmbH & Co. KG, Rolandsbrucke 4, D-20095 Hamburg, Germany
Construction	Steel
Year of build	1997
Length overall	195,69 m
Length (bp)	185,23 m
Gross tonnage	29.115
Minimum safe manning	
Authorised cargo	Containers

VOYAGE PARTICULARS

Port of departure	Ravenna
Port of arrival	Venice
Type of voyage	Short international
Cargo information	Containers



Picture 1: "Northern Vitality"

MARINE CASUALTY INFORMATION

Date and Time	06 January 2015 at 1844
Type of marine casualty or incident	Incident, main engine did not respond to the command "dead slow astern"
Location of incident	Port of Koper, entrance to the basin I
Place on board	Main engine
Injuries/fatalities	No
Damage/Environmental impact	No
Ship operation	On arrival
Voyage segment	Berthing
External & Internal environment	Wind: ESE wind 1 to 1,5 kt Sea state: calm Visibility: good
Persons on board	23



SECTION 2 – ANALYSIS

It is no exaggeration to suggest that main engine failures and blackouts tend to occur most regularly at the point in a voyage where the ship is at its most vulnerable. In confined waters or entering and leaving port, the stable loads which will generally prevail with the ship on passage are disturbed. There is additionally some evidence that compliance with the low sulphur fuel regulations and changing from one grade of fuel to another has exacerbated these problems.

SOLAS 2006 Amend/Chapter II-1 – Construction – structure, subdivision and stability, machinery and electrical installations shall apply to ships the keels of which are laid or which are at similar stage of construction on or after 1 January 2009.

Unless expressly provided otherwise, for ships constructed before 1 January 2009, the Administration shall ensure that the requirements which are applicable under chapter II-1 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolutions MSC.1(XLV), MSC.6(48), MSC.11(55), MSC.12(56), MSC.13(57), MSC.19(58), MSC.26(60), MSC.27(61), Resolution 1 of the 1995 SOLAS Conference, MSC.47(66), MSC.57(67), MSC.65(68), MSC.69(69), MSC.99(73), MSC.134(76), MSC.151(78) and MSC.170(79) are complied with.

According to the definition of SOLAS 2006 Amend/Chapter II-1/Reg.3.8, '*Northern vitality*' after main engine failed to respond, fulfilled the criteria for dead ship condition. This is the condition under which the main propulsion plant, boilers and auxiliaries are not in operation due to the absence of power.

Ships shall be provided, according to SOLAS 2008 Amend/Chapter II-1/Reg.3.4.2, with a ship-specific emergency towing procedure. Such a procedure shall be carried aboard the ship for use in emergency situations and shall be based on existing arrangements and equipment available on board the ship.

The procedure shall include:

- drawings of fore and aft deck showing possible emergency towing arrangements;
- inventory of equipment on board that can be used for emergency towing;
- means and methods of communication; and
- sample procedures to facilitate the preparation for and conducting of emergency towing operations.

As per SOLAS 2004 Amend/Chapter V/Reg.20, ships, when engaged on international voyages, subject to the provisions of regulation 1.4, shall be fitted with Voyage Data Recorders to assist in casualty investigations.

According to the *Guidelines on voyage data recorder (VDR) ownership and recovery* (MSC/Circ.1024, 29 May 2002):

- Recovery of the VDR information should be undertaken as soon as possible after an accident to best preserve the relevant evidence for use by both investigator and the ship owner. As the investigator is very unlikely to be in position to instigate this action soon enough after the incident, the owner must be responsible, through its on-board standing orders, for ensuring the timely preservation of this evidence.

'*Northern vitality*' is equipped with NetWave NW-4010 VDR.

Critical points to note regarding NetWave NW-4010 VDR data preservation

The following items should be addressed immediately an incident is reported:

1. To ensure that VDR data is available following an incident, the "**DATA**" button on the Bridge Control Unit must be pressed within 12 hours of the start of an incident. (This copies the last 12 hours of data from the protected memory in the capsule to another area of unprotected memory in the base of the capsule where it will not be routinely overwritten).
2. There is only space for one dataset to be saved using the "DATA" button. The system will offer the option to overwrite previously saved data, if the DATA button is pressed again, after an initial dataset has been saved.
3. As standard, the NW-4000 system is not fitted with a hard disk, consequently there will typically only be a minimum of 12 hours' data available in the system.

After examining the engine maintenance log it was noticed that maintenance of ship's equipment (engines, purifiers, filters, fuel systems and sealing arrangements) were not adequate. In the log book, maintenance of supply air system could not be traced. Therefore, due to the lack of maintenance, some dirt in the system caused blockage of air valves and preventing engine to start.

After the maintenance by the ship's crew when system was cleaned and tested, system operated normally.

According to international standards and best practices, recommendations to reduce the risk of power losses and blackouts are as follows:

- Engine and boiler manufacturers should be consulted for advice on operation with low sulphur fuel and the need for any equipment/system modifications;
- Ensure correct maintenance of all equipment; engines, purifiers, filters, fuel systems and sealing arrangements;
- Ensure fuel oil viscosity and temperature control equipment is accurate and fully operational;
- Ensure that system temperature and pressure alarms, fuel filter differential pressure transmitters etc. are accurate and operational;
- Ensure fuel changeover procedures are clearly defined and understood;
- Ensure that engineers are fully familiar with fuel systems and main engine starting systems and establish 'failure to start' procedures. These should include familiarisation with operation locally and from the engine control room;
- Ensure that the starting air pressure is monitored during manoeuvring operations and that the deck department appreciates the limitations of starting air availability;
- During standby, run two (or more) generators in parallel whilst ensuring sufficient power availability should one stop or trip. Monitor and balance switchboard power loads equally;
- Test the astern operation of the main engine prior to arriving at the pilot station and, if practical, before approaching the berth;
- Establish procedures to ensure that there is adequate electrical capacity available before starting up lateral thrusters, mooring equipment or other heavy equipment, bearing in mind that simultaneous starting of large electric motors will lead to a large power surge and possible overload;
- Ships fitted with shaft generators should, where appropriate, changeover to auxiliary generator power well before entering restricted waters and undertaking critical manoeuvres. Manufacturer's guidelines should be followed and ship's staff guided accordingly.



Picture 2: Layout of “Northern Vitality” bridge.



Picture 3: Net-Wave 4010 VDR

SECTION 3 – CONCLUSIONS

Incident on board “Northern vitality” happened because of lack of maintenance of the ship’s machinery, not in general, but in this specific case not enough attention was given to air supply system. Also, master did not preserve data on VDR – deliberately or not.

Action, taken by the master immediately after noticing something is wrong with the engine, prevented any substantial damage to the ship or port facilities.

SECTION 4 – ACTION TAKEN

No further action was taken.

SECTION 5 – RECOMMENDATIONS

To ship's operator Norddeutsche Reederei H. Schuldt GmbH & Co. KG:

- to instruct masters on their ships to obey requirements of SOLAS convention regarding the proper use of VDR equipment on board the ships to preserve data in case of accidents or incidents;
- to put in place instructions regarding the proper maintenance and regular testing of ship's equipment;