Transporta nelaimes gadījumu un incidentu izmeklēšanas birojs

Transport Accident and Incident Investigation Bureau of the Republic of Latvia

Brīvības iela 58, Rīga, LV-1011, Latvia, phone +371 67288140, mob. phone +371 26520082, fax +371 67283339,
e-mail taiib@taiib.gov.lv, www.taiib.gov.lv

Simplified report Nr. 2-2018

Grounding of Liberian flagged vessel RABA in vicinity of Liepaja port on 04th July 2018

Maritime department

Brīvības 58, Rīga, LV-1011

CONTENT:

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

Appr – approximately

AtoNs- Aids to navigation

BRM- Bridge Resource Management

ECDIS - Electronic Chart Display and Information System

Iaw-in according with

MT- metric tonnes

rpm - Revolutions per minute

SOLAS - The International Convention for the Safety of Life at Sea (SOLAS)

1974

SOF-Statement of Facts

STCW Code - The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended in 1995 and 1997 (STCW Convention)

TAIIB - Transport Accident and incident Investigation Bureau

1. Preamble

1.1. The sole objective of the investigation of an accident shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of an investigation to determine liability nor to apportion blame.

1.2. Latvian TAIIB has received an initial notification about grounding of mv RABA from Latvian Coast Guard by phone call at 16:40 local time on 04 July 2018.

2. Narrative

On 04.07.2018, at 14:45 local time Vessel "Raba" had commenced voyage from port of Liepaja to port of Dordrecht (Netherlands), having cargo of 15000 MT of coal onboard. Pilot was on the bridge. All technical means, equipment, propulsion and electronic devices have operated normally. Immediately after vessel's passage through the Southern gates of port of Liepaja (appr. at 15.12) an abrupt decrease of visibility to factual "zero" appeared due to fog, making irrelevant local fairway's lateral/cardinal buoys to be visual" turning marks" for course altering. Being within the navigable channel on starboard side of the fairway, Raba had commenced turning to port at 15.16 from standard fairway's shore-ranged course 292 degrees to course 248 degrees in between of three local green/red buoys, keeping speed around 6 knots. Several consequent verbal commands given by Pilot and Master to helmsman while lying in circulation, has resulted in grounding beyond the southern edge of the fairway in location with the charted depth 7,3 meters (by meantime vessel's aft draft was 8,8 meters, forward draft: 8,02 meters). Immediate efforts of crew and port authorities to re-float the vessel were unsuccessful. There were no casualties/injuries neither pollution during the accident. Alcohol was not the factor during the incident. Sea state and wind: calm. Raba stayed on the ground until 09.07.2018 and has been re-floated after partial reload of cargo into barge organised by operator. After appropriate checks and

inspections by class, vessel was allowed to continue her voyage due to minor insignificant damages (scratches of hull).

3. Facts

Ships' particulars:

Vessel's name	RABA
IMO Number	9521825
Call sign	A8ZQ7
Type of ship	Bulk carrier
Flag	Liberia
Port of registry	Monrovia
Registered owner	Hermione three Maritime Ltd.
Registered operator	Polska Zegluga morska P.P
Classification Society	DNV.GL
Gross Tonnage	13600 t
Net Tonnage	5400t
Registered length	150 m
Registered width	23,6m
Draft	8,1m
Place and year of building	China, 2012
Hull material	Steel
Engine Power	600 kW
Crew	19

Weather conditions:

Weather forecast for Port of Liepaja in accordance with the data from "Latvian Environment, Geology and Meteorology Centre":

At time period from 07.00 till 20.00, 04 July 2018; Variable direction wind 2-5 m/s, Visibility more than 10 kilometres, none precipitation expected.
In accordance with vessel's RAB Master's report, the factual weather conditions were; "zero" visibility due to dense fog, South-West wind 3 m/s, air temperature: $+15^0$C.
Remark: all available short time (daily) and long-time (up to weekly) weather forecasts around time of incident (04 July 2018) do not define likelihood of fog or stipulate impacts on visibility in area of Liepaja port.

4. Description

In accordance with collated VDR data, Liepaja port VTS radar playback records, written statements of crew and Pilot, bridge audio records from VDR (all times local):

On 04 July 2018 pilot has embarked RABA at 14.30 (Berth 43, "Brivosta"); tug was made fast from vessel's aft at 14.40, vessel has unberthed at 14.45. Two radars X and S bands, two ECDIS units were fully operational. Bridge manning: Master, OOW (Chief officer), helmsman and Pilot. All radio and navigational equipment, engine control consoles in good working order and tested according ISM Check lists. Bow thruster switched on. Pilot has provided commands on helm and engine telegraph to Master for execution.

Movements and events in chronological order:

1. At 14.45: started tug assisted variable manoeuvring (course, speed) bound to port departure.
2. At 15.05 tug disconnected from vessel's aft, movement to Liepaja port's Southern gates, bow thruster switched off.
3. At 15.09 vessel has crossed Southern gates: course 292, speed 6 knots;
4. At 15.12 Immediate drop of visibility to 0,5-1 cable, all buoys rendered useless as means of visual voyage control; Watch change: Second Officer takes over duties from Chief Officer on the bridge; distance to go toward fairway intersection 292° to 248°: appr 5 cables (5 minutes to go). **All further actions are described by images as follows**:

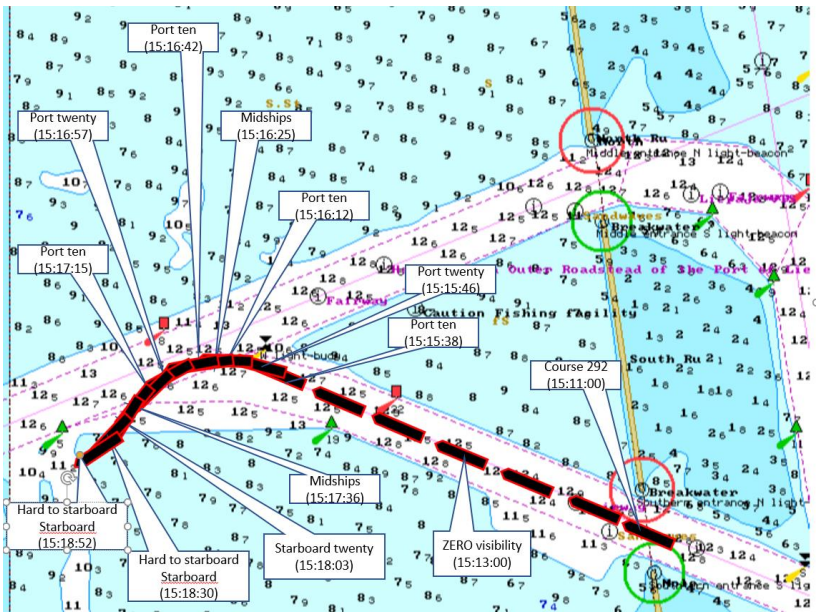

Image1: Excerpt from ECDIS chart with RABA summary movement and commands to helm before grounding on 04.07.19

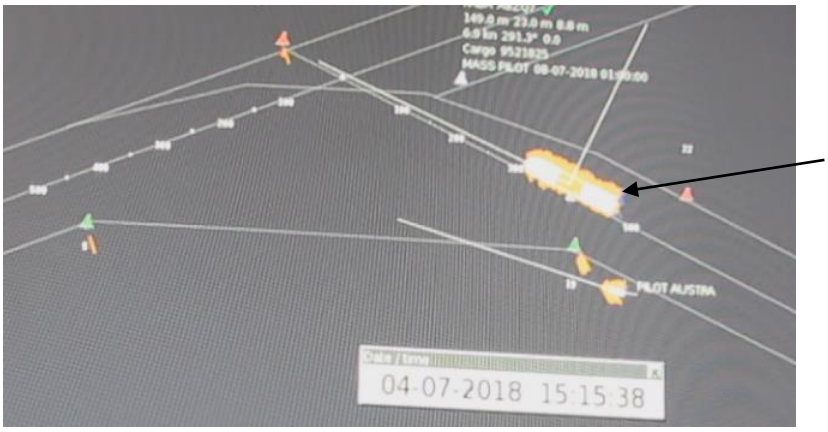

Image 2: VTS Radar image of RABA (marked by black arrow) and her location on fairway, close to turning point, at the moment (15h 15m 38s) when pilot advised **"PORT TEN!"**: the vessel's turn to course 248 has started (current course 292, speed 6 kt)

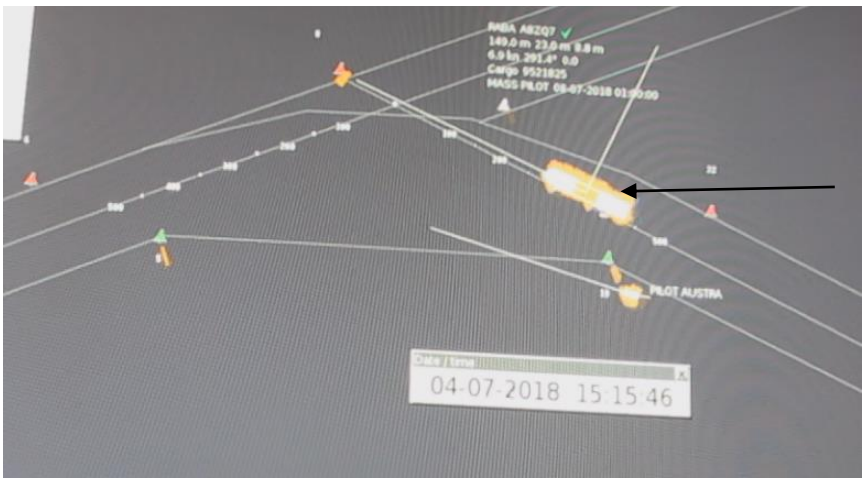

Image 3: VTS Radar image of RABA (marked by black arrow) and her location on fairway at the moment (15h 15m 46 s) when pilot advised **"PORT Twenty!"** (Course 292, speed 6 kt)

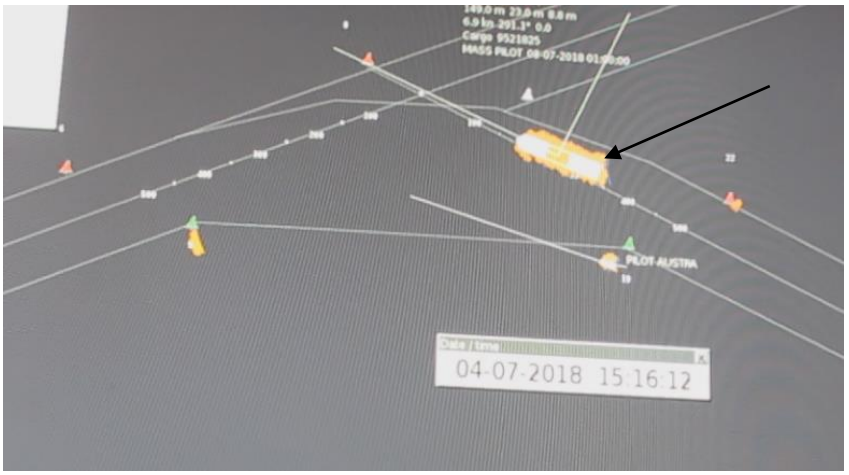

Image 4: VTS Radar image of RABA (marked by black arrow) and her location on fairway at the moment (15h 16m 12s) when pilot advised **"Port Ten!"** (Course 287, speed 6 kt)

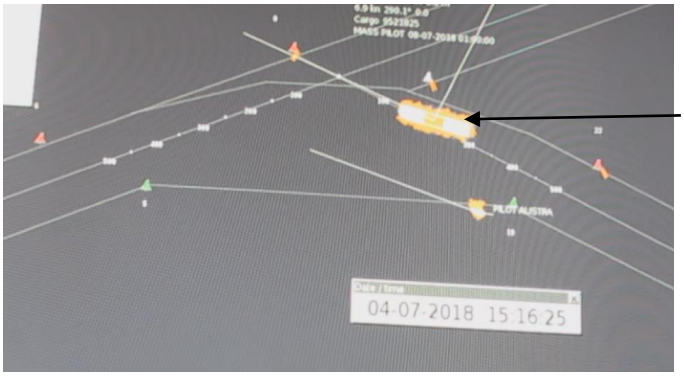

Image 5: VTS Radar image of RABA (marked by black arrow) and her location on fairway at the moment (15h 16m 25s) when pilot advised **"Midship"** (Course 282, speed 6 kt)

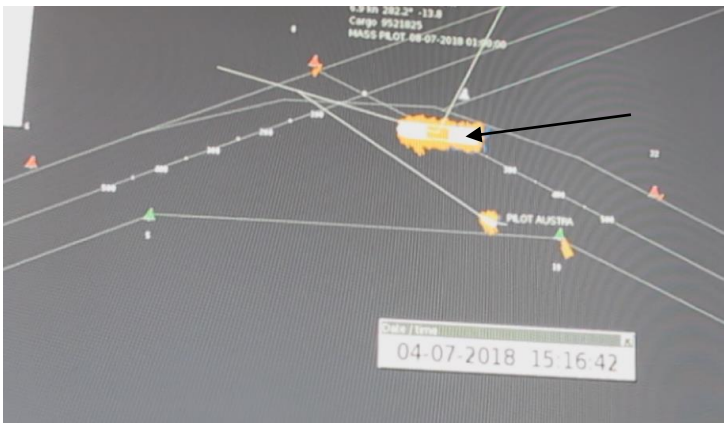

Image 6: VTS Radar image of RABA (marked by black arrow) and her location on fairway, off the centreline, at the moment (15h 16m 42s) when pilot advised **"Port ten!**" (Course 274°, speed 6 kt)

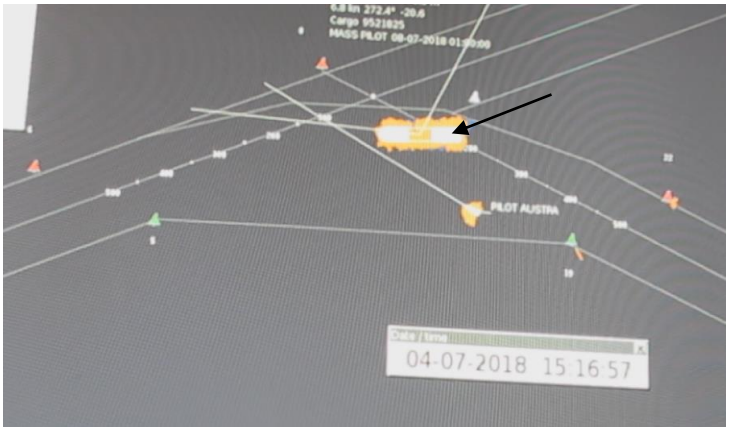

Image 7: VTS Radar image of RABA (marked by black arrow) and her location on fairway (off the centreline) at the moment (15h 16m 57s) when pilot advised **"Port twenty!"** (Course 268 °, speed 6 kt)

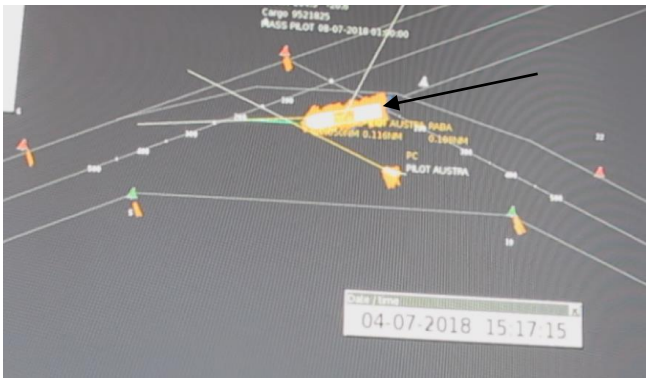

Image 8: VTS Radar image of RABA (marked by black arrow) and her location on fairway (off the centreline) at the moment (15h 17m 15s) when pilot advised **"Port ten!"** (Course 259°, speed 6 kt)

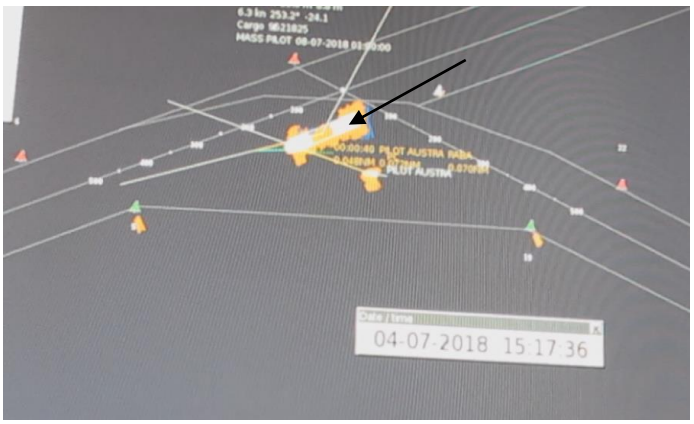

Image 9: VTS Radar image of RABA (marked by black arrow) and her location on fairway (off the centreline) at the moment (15h 17m 36s) when pilot advised **"Midships!"** (Course 247°(!) speed 6 kt)

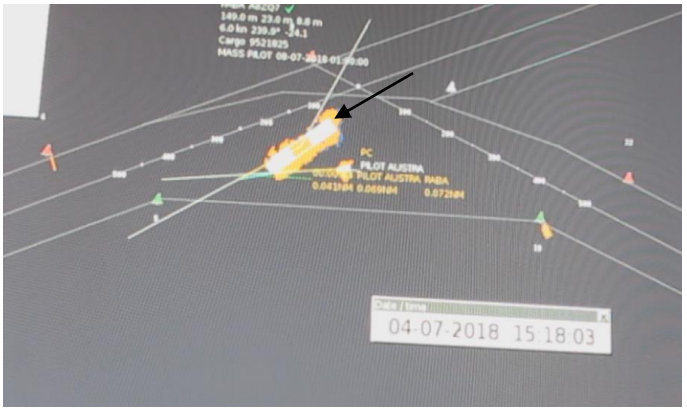

Image 10: VTS Radar image of RABA (marked by black arrow) and her location on fairway (off the centreline) at the moment (15h 18m 03s) when pilot has advised **"Starboard twenty!"** (Course 234°, speed 6 kt)

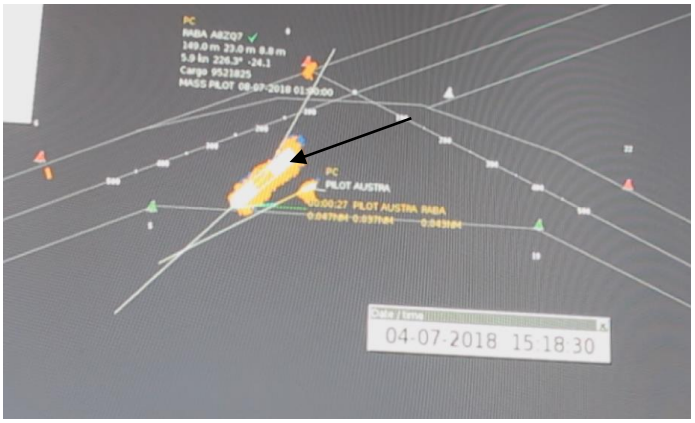

Image 11: VTS Radar image of RABA (marked by black arrow) and her location on fairway (off the centreline) at the moment (15h 18m 30s) when pilot has advised **"Hard to starboard"** (Course 227°, speed 6 kt)

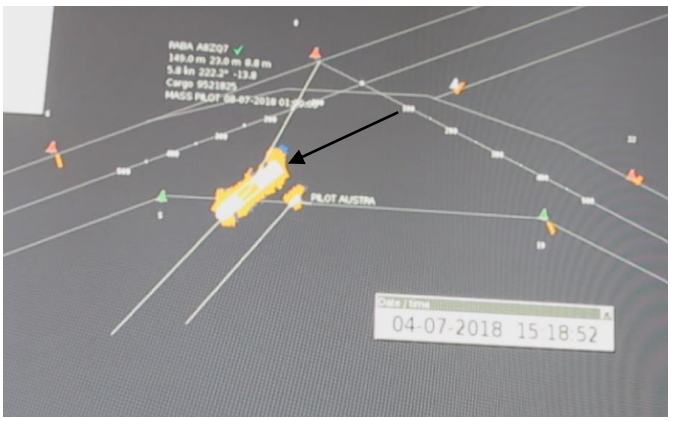

Image 12: VTS Radar image of RABA (marked by black arrow) and her location at the moment (15h 18m 52s) when Pilot has repeatedly advised **"Hard to starboard"** (Course app 220, speed decreasing)

Image 13. Excerpt from RABA ECDIS chart after getting aground in vicinity to green buoy Nr. 5

Image 14. Green buoy Nr.5 seen from RABA bridge after getting aground, distance less than 100 meters, visibility: 100-150 meters

The vessel got heavily aground at 15h 19m. All further advices of Pilot and Master's commands on helm and engines were without positive results and have not alleviated the situation. The salvage phase of incident has commenced.

5. Analysis

5.1. Activities on the vessel's bridge prior the incident.

Master-Pilot exchange: The pilot has embarked vessel 15 minutes prior departure. Master and Pilot have stated in their statements (written and verbal) that there was quite sufficient exchange of navigational information before the commencement of unberthing operation and voyage. However, the detailed analysis of VDR audio files (voice records on the RABA bridge) do not provide neither outline nor content of such navigation/manoeuvring related discussions between crew and Pilot prior the departure. If such dialogs been presented, they have been held well beyond the effective reach of inbuilt VDR bridge microphones.

Remarks on vessel's Watch arrangements: There was no factual Lookout on the bridge during the departure of vessel from Liepaja port and incident, though he/she must be there according to effective vessel's SCHEDULE OF DUTIES AND WATCHKEEPING. Shortly before the grounding (5-6 minutes) Second Officer has relieved Chief Officer on the bridge. Such change of watch during the voyage in restricted waters (also within "zero" visibility conditions) could provide negative impact on the efficient situational awareness of a Watch Officer.

Vessel's voyage plan: There was voyage plan tagged "Port of Liepaja-Port of Dodrecht" signed and approved by Master on 03.07.2018. However, there is an indication (according to VDR audio records), that this document was nor primary, neither secondary working document on the bridge before the incident: factual verbal communications do not include operating with terminology or elements of conventional voyage plan: i.e. waypoints, turning points, clearing bearings/distances, time measurements before the course alterations etc.

Performance of Pilot: According to VDR audio records: Pilot has worked on the bridge in role of Officer of the Watch. Before the incident Master has relied on Pilot advises completely. Pilot issued maneuvering commands using AtoNs as the orientation marks.

Procedures of piloting: Pilot has recommended operations/turns of helm/engine modes to Master. Those commands have been loudly repeated by Master to helmsman (regarding steering) for proceedings. There are indications, that vessel's

maneuvering was held and controlled primarily and only using buoys as means of visual control; it worked well unless visibility dropped down to zero.

Control of course during critical turn: During vessel's critical turn from course 292 to 248 nobody on the bridge was in control of factual turn progress by gyrocompass reading, ECDIS or radar. There are assumptions, that bridge team was looking for visual location of fairway's buoys as marks for safe turn, disregarding any other means of control.

5.2. Human erroneous actions and omissions

Omissions before and during the incident:

5.2.1 absence of Lookout on the bridge;

5.2.2. absence of effective navigational parameters control (courses, safety distances, clearing bearings, rate of turn);

5.2.3. very likely: absence of effective Master-Pilot exchange prior the departure;

5.2.4. absence of efficient BRM on the bridge before the incident;

5.2.5. Master's overreliance on Pilot's advise

Erroneous actions:

5.2.6. Navigation from buoy-to-buoy on fairway, absence of voyage parameters control.

5.2.7. Delayed and inappropriate Pilot's advices (in form of commands on helm during the vessel's turn from course 292 to 248 (see Images 4-12)

5.2.8. Change of Watch Officers on the bridge 4-5 minutes before the incident.

5.3. Hazardous material involvement

NIL

5.4. Environmental impact

NIL

5.5. Equipment failures

NIL

5.6. External factors

Status of visibility has been most important factor in incident. Other meteorological elements were neglectable as factors.

5.7. Contributing factors of the incident involving human performance, shipboard operations, shore management or regulatory procedures:

Factors as c**rew fatigue, lack of competence or shortages on shipboard operations** could not be clearly articulated as the contributory factors of the incident. All vessel's conventionally required and presented paperwork like checklists, plans, graphs etc. have been held according to standards (regarding to conventional navigation).

6. Conclusions

6.1. There was insufficient Master-Pilot exchange before the departure of RABA from port of Liepaja on 04.07.2018.
6.2. The grounding incident of RABA has occurred due to insufficient control of navigational parameters by bridge team: the only mean of control was locations of fairway buoys as marks for course altering: it did not work anymore after immediate visibility drop. Bridge team failed to rearrange itself rapidly to new external conditions.
6.3. Pilot was not integrated into bridge team, he acted as an individual Officer of the Watch providing commands for execution.
6.4. Master has relied on Pilot advice completely, lacking means of navigation control.
6.5. Voyage plan was just formal document without practical use on bridge.

7 SAFETY RECCOMENDATIONS

Recommendations to ship owner:

-Create a case study of the incident and promulgate it to the fleet;

-Review navigational practices of RABA (and fleet) according to conventional standards (STCW Code Part B / Part 3 GUIDANCE ON WATCHKEEPING AT SEA);

-Review the voyage planning form and working procedures with the plan during the passage (IMO RESOLUTION A.893(21)) in order to make voyage plan as duly practical safety document;

Recommendations to Liepaja port authorities:

-Review adequacy of existing pilotage procedures, instructions manuals, checklists to those standards and requirements stated in IMO resolution A.960 "Recommendations on training and certification and operational procedures for maritime pilots other than deep-sea pilots" in all aspects: Master-Pilot exchange, minimum requirements of competence for pilots, necessity of pilots to be educated and trained in BRM etc.

-Include in standard master pilot exchange form reference to the requirement to **clarify** the roles and responsibilities of the bridge team.

- Ensure that all pilots undertake restricted visibility maneuvering (blind navigation) exercises during their simulator training sessions including berthing and unberthing operations.

- Review instructions manuals to VTS staff, aimed to ensure that: when vessels' movements are to take place in spontaneous restricted visibility, appropriate risk mitigation measures are put in place, up to delivery of **effective and timely** navigational assistance.