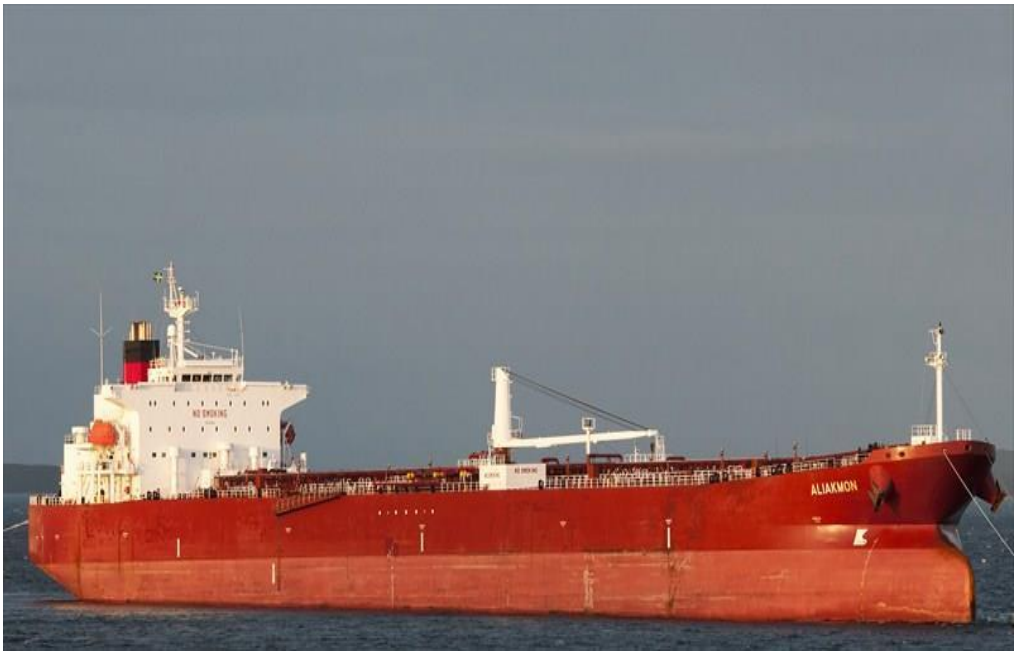
HELLENIC REPUBLIC

HELLENIC BUREAU FOR MARINE CASUALTIES INVESTIGATION

MARINE CASUALTY SAFETY INVESTIGATION REPORT 17/2013

GROUNDING OF M/T « ALIAKMON» ON THE EAST COAST OF SYROS ISLAND ON 13TH DECEMBER 2013



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Foreword

The Hellenic Bureau for Marine Casualties Investigations (HBMCI) was established by Law 4033/2011 (Government Gazette 264/12.22.2011), in the context of implementing EU Directive 2009/18/EC. HBMCI conducts technical investigations into marine casualties or marine incidents with the sole objective to identify and ascertain the circumstances and contributing factors that caused them through analysis and to draw useful conclusions and lessons learned that may lead, if necessary, to safety recommendations addressed to parties involved or stakeholders interested in a marine casualty, aiming to prevent or avoid similar future marine accidents.

The conduct of Safety Investigations into marine casualties or incidents is independent from criminal, discipline, administrative or civil proceedings whose purpose is to apportion blame or determine liability. This investigation report has been produced without taking under consideration any administrative, disciplinary, judicial (civil or criminal) proceedings and with no litigation in mind. It does not constitute legal advice in any way and should not be construed as such. It seeks to understand the sequence of events occurred on the 13th of December 2013 and resulted in the examined serious marine casualty. Fragmentary or partial disposal of the contents of this report, for other purposes than those produced may lead to misleading conclusions.

The investigation report has been prepared in accordance with the format of Annex I of respective Law (Directive 2009/18/EC) and all times quoted are vessel's time unless otherwise stated as Local Time (UTC +2).

Under the above framework HBMCI has been examining the grounding of M/T "Aliakmon", which occurred on the 13th of December 2013, in the East Coast of Syros island , in Greece. This report is mainly based on information and evidence that have been derived from vessel's Voyage Data Recorder (VDR), the Hellenic Coast Guard AIS Monitoring system and the interview process.

Glossary of Abbreviations and Acronyms		
1	A/B	Able seaman
2	AIS	Automatic identification system
3	ARPA	Automatic radar plotting aid
4	bfrs	Force of wind in beaufort scale
5	CoC	Certificate of Competency
6	CoG	Course Over Ground. The actual path of a vessel with regard to the seabed, measured in degrees. Course may be relative to true north (true course) or magnetic north (magnetic course)
7	DOC	Document of Compliance
8	°	degrees (of angle)
9	GMDSS	Global maritime distress and safety system
10	GPS	Global positioning system
11	gt	gross tonnage
12	HCG	Hellenic Coast Guard
13	HDG	Heading. The direction in which a vessel is pointed at any given moment. Heading may be relative to true north (true heading) or magnetic north (magnetic heading)
14	knots	unit of speed equal to one nautical mile (1.852 km) per hour
15	KW	Kilowatt
16	L.T.local timeM/E	Main Engine
17	3/O	3rd Officer
18	2/O	2ndOfficer
19	C/O	Chief Officer
20	O(s)OW	Officer(s) on the watch
21	SMS	Safety management system
22	SOLAS	Convention for the Safety of Life at Sea 1974, as amended
23	STCW	International Convention on Standards of Training, Certification and Watchkeeping for seafarers
24	UTC	Universal co-ordinated time
25	VDR	Voyage Data Recorder
26	VHF	Very high frequency (radio)

1. Executive Summary

On the 13th of December 2013, at approximately 02:42 (L.T.), the Liberian registered Oil Tanker "Aliakmon" grounded on the East Coast of Syros island (Greece), at position Lat: 37° 24.869 N, Long: 024° 58.095 E. At the time of the marine casualty, the wind was NNE, with wind force 7-8 bfrs, good visibility, sea state was rough and it was still dark.

On the 10th of December 2013, M/T "Aliakmon" departed, in ballast condition, from the port of Port Said in Egypt, heading to Syros Island (Greece) for a scheduled dry docking at Neorion Syros shipyard.

The vessel grounded on a rocky edge of shoals. Following the grounding, the vessel was inspected by divers and found deformed without any cracks. Upon that, on the same day, M/T Aliakmon was refloated with the assistance of three tugboats and was towed to Syros shipyard.

HBMCI launched a safety investigation into aforementioned marine accident. The HBMCI investigation identified issues that led to the described accident. These issues will be described in the content of this report.

Following the actions taken by the vessel's Company, no safety recommendations were issued.

2.1 Ship particulars

Vessel's name:	Aliakmon
Type of vessel:	Oil Tanker
Flag:	Liberia
Port of registry:	Monrovia
IMO number:	9323962
Call sign:	A8HS5
DOC company:	Pleiades Shipping Agents
IMO company no. (DOC):	0084171
Year built:	2006
Shipyard:	Sumitomo Heavy Industries / Yokosuka - China
Classification society:	Lloyds Register of Shipping
Length overall:	213.354 m
Breadth overall:	32.26 m
Gross tonnage:	35.711
Deadweight:	61.284
Main Engine max. output:	10.010 kW
Hull material:	Steel

2.2 Voyage Particulars

Port of departure:	Port Said, Egypt
Port of arrival:	Syros, Greece
Type of voyage:	International
Cargo information:	Ballast Condition
Safe Manning:	13
Manning:	23

2.3 Weather data

Wind (direction-speed):	NNE – 8/9 bfrs
Sea state:	Rough
Visibility:	Good
Light/dark:	Dark
Current:	Unknown

2.4 Marine Casualty information

Type of marine incident :	Grounding
IMO Classification:	Serious marine casualty
Date, time:	13 December 2013 at 02:42
Location:	East coast of Syros island (Greece)
Position:	37° 24.869 N – 022° 28,37 E
Ship's voyage segment:	Anchored
Place on board:	Fore section & bottom - structural damages
Human factor data:	Yes
Consequences to individuals:	No injuries
Consequences to environment:	No pollution
Consequences to property:	No damages

3. Narrative

M/T Aliakmon had sailed with 23 crewmembers from Port Said (Egypt) on 10th December 2013, in ballast condition, heading to Syros (Greece) in order to go for dry docking at Neorion Syros Shipyard, which had been scheduled for the 13th of December 2013. On 13th of December 2013 the 2/O had taken over the navigational watch (00:00 – 04:00), while the Master was still on the bridge. At approximately 00:41 the vessel anchored by her starboard anchor (six shackles in the water) at position 37° 25.10 N, 024° 58.40 E, awaiting for daylight to enter the shipyard. After having dropped anchor, the M/E was stopped and her deballasting operation – in order to reduce her displacement according to the request of the Shipyard – was commenced by the C/O. The Master ordered the " Minimum Standby" of the Engine, which meant that the Main Engine would have to be ready for maneuvering within 10 minutes, if requested. Due to the weather conditions and the fact that a deballasting operation was about to start by the C/O, the Master also ordered the 2/O to call him immediately if any hazardous condition was detected. At approximately 00:45 the Master left the bridge after he had confirmed that the anchor had been securely dropped and the vessel was kept inside her calculated anchoring circle. At approximately 02:00 weather conditions deteriorated with NNE gusts up to 18 m/sec. One A/B's on duty was instructed to check the status of the anchor. The A/B reported that the anchor was constantly heavily tight. At 02:09 the OOW realized that the vessel was dragging her anchor and he informed the Master. In parallel the OOW informed the E/R to start up the M/E for departure. The Master arrived on the bridge at 02:10 and took over the control. The C/O was instructed to cease de-ballasting operations. At 02:19 the engine was ready and the Master started to make movements in order to direct the vessel to the open sea. The vessel was still dragging on her anchor. At 02:44 M/T "Aliakmon" grounded by her port side at position Lat: 37 24.87 N and Long: 024 58.09 E. The engine was ordered to stop and at the same time the emergency alarm was sounded. No injury and no marine pollution were reported. Following the grounding, inspections and soundings in engine room, ballast tanks and bunker tanks as well as the visual inspections of the waters surrounding the vessel were carried out. No evidence of water ingress or other damage was found. At 09:50 the vessel, with the assistance of tug boats, was clear from the grounding position and headed to the Neorion shipyard for the scheduled dry-docking.

3.1 Description of the vessel

Aliakmon was a 35,711 G.T. M/T built in Sumitomo Heavy Industries (Japan), in 2006. The vessel was registered in Monrovia (Liberia) and classed by Lloyds Register. Aliakmon was owned by Jilian Navigation L.t.d. and operated by Pleiades Shipping Agents S.A. The vessel had an overall length of 213.354 m and a moulded depth of 18.50 m. Propulsive power was provided by one (01) STX MAN B & W diesel engine. At the time of the accident all navigational equipment was operational.

3.2 The crew

Aliakmon was operating under a crew complement of 23 seafarers including the Master, all of Russian nationality. The working language was Russian.

The vessel had three (03) navigating officers, the two (02) 2/O's and the 3/O, who shared navigational watches equally, under a 4 On –8 Off watch pattern, while at sea.

The Master, aged 50, was a Russian national, fully certified for his rank. He had 6 years experience with this company. He had 9 days on board and his familiarization was completed on the 10th of December 2013. He signed on Aliakmon on the 5th of December 2013.

The 2/O (OOW), aged 30, was a Russian national, fully certified for his rank. He had 4 years experience in this rank and also 4 years on this type of tankers. All of the years with the company he had served on sister vessels and had also completed a contract on Aliakmon in the past. He had joined Aliakmon on the 10th of July 2013. He was performing the 12:00-04:00 / 00:00 – 04:00 OOW at sea.

The Chief Engineer, aged 47, was a Russian national, fully certified for his rank. He had signed on Aliakmon on 10th August 2013. His experience in his rank was 4 years.

The 3rd Engineer, aged 34, was also a Russian national, fully certified for his rank. He had served on sister vessels for the last 6 years. He had signed on the 4th of December 2013.

3.3 The voyage and Watchkeeping schedule

Aliakmon departed from Port Said (Egypt) on the 10th of December 2013 in ballast condition. The passage plan from Port Said to Syros was prepared by the 2/O and signed by the Master, the C/O and the other two O(s)OW, according to the company's SMS procedures.

Aliakmon, while at sea, was navigating under a navigational pattern of three watches performed by the 3/O (0800-1200/2000-2400), the 2/O (0000-0400/1200-1600) and the 2/O (0400-0800/1600-2000). Each navigational watch also consisted of an A/B as a Look out, according to relevant International Regulations and vessel's SMS. Respectively, on the E/R three watches were performed.

3.3.1. The 2/O's watch (00:00 – 04:00)

The 2/O was performing the 00:00-04:00 navigational watch. On the 13th of December 2013 the 2/O had taken over the navigational watch (00:00 – 04:00), while the Master was still on the bridge. At approximately 00:41 the vessel anchored by her starboard anchor (six shackles in the water) at position 37° 25.10 N, 024° 58.40 E, awaiting the daylight to enter to the shipyard. The Master also ordered for a "Minimum Standby" of the Engine, which meant that the Main Engine should be ready for use within 10 minutes, if requested. Furthermore, due to the weather conditions and the fact that a deballasting operation was about to start by the C/O, the Master also ordered the OOW to call him immediately if any hazardous condition was detected. At approximately 02:00 weather conditions deteriorated with NNE gusts up to 18 m/sec. One of the duty A/B's was instructed to check the status of the anchor. The A/B reported that the anchor was constantly heavily tight. At 02:09 the OOW realized that the vessel was dragging her anchor and he immediately informed the Master.

3.4 The grounding

At approximately 02:09 the OOW, apprehended the risky situation and called the Master on the wheelhouse. The Master came on the wheelhouse approximately after one (01) minute. The E/R was informed to start up the M/E for departure. The Master ordered the C/E to go to the E/R to start the M/E. He also ordered the C/O, who was at the Cargo Control room, to stop the deballasting operation and finally he instructed the Bosun to go to the forecastle deck. The Master ordered for the heaving of the anchor which started at approximately 02:15. The M/E was ready, five (05) minutes later and Master started maneuvering the vessel to clear from the hazardous condition. The vessel was still dragging on her anchor despite the fact that the engine was running at full ahead.

However, the vessel was already too close to the coast. The prevailing wind kept pushing her towards the coast, whereas the freeboard had been increased by the deballasting operation and the propeller immersion had been decreased. The combination of the above mentioned resulted to the poor maneuvering capability of the vessel and the imminent grounding, at position 37° 24'.869 N, 024° 58.095 E at 00:42. At 02:45 the engine was ordered to stop as soon as the grounding was realized. At 02:55 the crew was mustered and actions as per relevant contingency plans started.

3.5 Emergency Response Actions

3.5.1 Emergency Response Actions by Aliakmon

Immediately after the grounding, the Master sounded the emergency alarm and he informed the local Coastguard Authority. The Master ordered the Chief Engineer and Chief Officer respectively, to inspect and take soundings from all bunker/ballast tanks, cargo holds bilges and to check for leakages or water ingress as well as to check and verify if marine pollution had occurred. In parallel, the Master informed the Company's DPA and reported the grounding with the information available at the time. No injuries or health problems of crew were reported.

3.5.2 Hellenic Coast Guard Response Actions

The local Hellenic Coast Guard Authority of Syros was informed immediately after the grounding. The Master of the vessel was officially instructed by the Coast Guard Authority, to take all precautionary actions in order to maintain the vessel afloat, to prevent marine pollution and was urged to make all necessary arrangements for the refloating and removal of the vessel.

3.6 Salvage Operations - refloating

After the grounding, two tugs arrived in the sea area for assistance and a Local Pilot who had been ordered by the Company boarded the vessel in order to provide consultation to the Master. The tug boats made visual inspections around the vessel and took depth soundings. They confirmed that there was no leakage or discharge from the vessel. Furthermore, two divers had been appointed by the Local Coast Guard Authority to conduct an underwater inspection. It was reported that the vessel was resting with her port side against rocks without any signs of serious damage to the hull. Later on, a second Pilot boarded the vessel and a plan for pulling the vessel away from the stranding position was prepared and submitted to the Local Coast Guard Authority for approval.

At approximately 09:40 on the 13th of December 2013 the operation of moving the vessel away from the stranding position commenced by using three tugboats. At 09:50 the vessel was clear from the stranding position and headed to the Neorion shipyard for the scheduled dry-docking as previously mentioned.

4. Analysis

The analysis of the examined marine casualty aims to identify the factors and causes that contributed to the marine casualty and to prevent further marine casualties or incidents from occurring in the future, taking into account the sequence of events and the collection of information during the investigation process.

4.1 Risk Assessment

The International Safety Management Code (ISM Code-SOLAS 74), as applied in Chapter. 1.2.2 & 1.2.2.2 states that: “The Safety Management objectives of the Company should inter alia assess all identified risks to its ships, personnel and the environment and to establish appropriate safeguards”.

Even though the ISM Code does not provide any further explicit reference apart from the above general requirement, risk assessment or risk analysis is fundamental for the compliance with most of the Code’s clauses. It is to be noted that although there is not an exact formal definition of risk, IMO defines it as: “The combination of the frequency and the severity of the consequence”.

The vessel’s Managing Company’s SMS comprised in the SMS Manual the risk assessment procedure, for anchoring operations. During the investigation process, the relevant Risk Assessment form was not presented, since it was not carried out prior to vessel’s arrival at Syros anchorage.

Considering the aforementioned, it is inferred that the risk assessment had not carried out as appropriate. Thereafter, risks associated with the anchoring procedure of Aliakmon had not been thoroughly identified and discussed and relevant risk control measures were not effective enough to mitigate the risks.

The failure to apply risk control measures already provided by a proper risk assessment procedure is considered to have been a contributing factor in the examined marine casualty.

4.2 Main Navigational Aids

4.2.1 Navigational Charts

Paper charts were the primary means of navigation on board Aliakmon. The navigational Chart No. 1041 (Nisos Naxos to Vrachoi Kalogeroi) was used during the approach of the anchorage area.
During the interview process and according to evidence collection, this was the only available chart onboard the vessel to approach Syros anchorage. As it derived from the interview process and the examination of the afore mentioned chart, no positions were marked after the vessel’s anchoring in order to check vessel’s drifting, until the grounding.
Furthermore, the Company’s SMS didn’t provide any requirements for position fixes to be placed at regural intervals on the map when the vessel is anchored.
The failure to apply requirements for position fixing when vessel was anchored is considered to have been a contributing factor in the examined marine casualty.

4.2.2 Radars

Aliakmon was equipped with two radar devices, one X-Band and one S-Band. The "X" band, providing a higher resolution and a clear image because of its higher frequency, was mostly operating during day or night time under good weather conditions, usually at open sea and at 12nm range scale. The "S" band Radar, operating at 3 GHz, was mostly used during night time or under restricted visibility due to rain and fog and in coastal passages or congested waters.

The installed radars on board Aliakmon were both featuring standard ARPA utilities including the “Guard Zones” function. Guard zones function offers the ability to the operator to customize zones acting as a shield to the vessel. When utilizing this function and if the unit receives radar returns inside the guard zone or a target enters the guard zone, visual and audible alarm are activated to alert the OOW in order to take actions as appropriate. Yet, it is noted that guard zones should not in any way be construed as the sole means for detecting the risk of collision or grounding possibilities.

Guard zones could be an additional safeguard for a vessel's safe navigation to avoid the risk of collision or grounding. During the interview process it was also verified by the VDR analysis that, although all the duty Officers were aware of the radar's said utility, they were not using it.
The 2/O didn't utilize the guard zone feature during his watch as an additional safety measure, that could have possibly prevented the casualty.
The omission of the 2/O to set the alarm guard zone utility on the operating Radar is considered to have been a contributing factor in the marine accident.

4.3. Master's Standing and Night Orders

The Night Orders are a supplement to the Standing Orders that come into force as the Master proceeds to take rest during the night. The Standing Orders are in force at all times whereas the Night Orders add specific points to the Standing Orders. The Master writes his orders every night to the Night Order Book, with specific regard related to the existing conditions. The O(s)OW should check the Night Order Book for the Master's specific orders and sign it. Master's Standing orders had been issued on board and signed by all O(s)OW. Supplementary night orders had also been issued for the voyage from Port Said to Syros which specifically stated the following:

1. Please comply with Master Standing Orders.

2. Continuously observe position by using all appropriate means in order to avoid drifting.

3. Check control distances and bearings.

4. Call Master and Duty Engineer in case of wind force above 15m/sec (29 knots) or anchor dragging.

5. Call Master if found any drift at anchor or drift another vessel.

6. Call Master if anything abnormal.

As it derived from interview process and from the VDR analysis the OOW realized that the weather deteriorated at 02:00, with wind force up to 18 m/sec but he didn't call immediately the Master as he was instructed by the afore mentioned Night Orders. At 02:09 the OOW realized that the vessel was dragging her anchor and then he called the Master. Soon after he informed the E/R to prepare the engines for departure without making clear that the vessel was dragging her anchor. It is not clear why the OOW took the decision to notify the Master with this 9 minutes delay, although as per No. 4 night order there was reason for alerting the Master at once, it could be attributed to his confidence that he could initially handle the situation, while he had not yet assessed the fact that the vessel was drifting from her position and the risk of grounding had emerged.
However, if the OOW had notified the Master at 02:00, he could have had more time prompt for actions in order to avoid the grounding.

The omission of the OOW to follow Master's Night Orders Book with regard to the existing environmental conditions is considered as a contributing factor to the examined marine casualty.

5. Actions Taken
5.1 Actions Taken by the Company of Aliakmon

According to information provided by the vessel's managers during the consultation period of the draft investigation report, following measures were taken:

- Damages to the hull were permanently repaired.
- Company's SMS has been updated to require vessels to be supported by tugs whenever a ballast / loading condition is required outside the limits set forth in MARPOL Ch. 4, Reg 18, par. 2.1 to par 2.3.
- Company's SMS has been updated to require vessels to submit the risk assessment to the main office for approval prior to being allowed to deballast the vessel in a condition outside the limits set forth in MARPOL Ch. 4, Reg 18, par. 2.1 to par 2.3.
- Company's SMS drill scenarios have been enriched with the addition of an emergency departure drill where notifications between the bridge and the ECR are to be tested monthly.
- Company's SMS and the corresponding anchoring checklist was updated to require an alarm to be set on ship's radar for the swinging/anchoring circle.
- Company's SMS was updated to require position fixes to be taken every 15min when the vessel is anchored.
- Company's SMS was updated to require the Captains assuming command on a ship programmed to be dry-docked to undergo simulator training on a light ballast condition under various weather conditions.
- Company's policy on navigational audits intervals was altered to require each captain to be audited once per contract instead of each ship being audited every six months.
- This incident along with lessons learned was circulated to the fleet.
- This incident was added to the in-office training agenda for the senior officers.
- This case was presented and analyzed during the next company's safety forum (30-01-2014).

The following conclusions, safety measures and safety recommendations should not under any circumstances be taken as a presumption of blame or liability.
The juxtaposition of these should not be considered as an order of priority or importance.

6. Conclusions

6.1 No thorough Risk assessment had been conducted prior to the anchorage (par. 4.1).

6.2 The OOW chose not to entirely follow Master's night orders (par. 4.3).

6.3 The Master wasn't notified on time that the vessel dragged anchor (par. 4.3).

6.4 No alarm was set on the Radar to monitor vessel's swinging circle (par. 4.2.2.).

6.5 Company's SMS didn't provide specific guidelines to require position fixes to be taken in regural intervals, when the vessel is anchored (par. 4.2.1.).

7. Safety Recommendations

In view of the actions taken, no recommendations are made in this report.

Published by the Hellenic Bureau for Marine Casualties Investigation (HBMCI), under the provisions of the article 16 of Law 4033/2011 (Government Gazette A΄ 264), as applied.
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and is uploaded on the website of HBMCI (see below)
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