



HELLENIC REPUBLIC



HELLENIC BUREAU FOR MARINE CASUALTIES INVESTIGATION

**MARINE CASUALTY SAFETY INVESTIGATION REPORT
13/2013**

**Grounding and foundering of General Cargo Stella
18 nm W of Karpathos Island - Greece**



November 2016

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Foreword

The Hellenic Bureau for Marine Casualties Investigations 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 it 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 the 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 apprehend the sequence of events occurred on the 21 September 2014 that 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 refer to local time (UTC +2) unless otherwise stated.

Under the aforementioned framework HBMCI has conducted a safety investigation into the foundering of General Cargo vessel Stella, under Sierra Leone Flag, IMO 6727296 that occurred on 02 November 2013, 18 nm west of Karpathos Island, Greece resulting in the loss of her Master.

This report is based on data acquired by interviews and collection of evidence by the parties involved in the marine incident. No electronic evidence could be obtained in order to support the sequence of events leading to the marine casualty.

Correspondence with Stella owners/managers could not be established.

Glossary of Abbreviations and Acronyms

1.	AB	Able seaman
2.	AIS	Automatic Identification System
3.	Bfrs	Beaufort (measurement unit of wind force)
4.	COC	Certificate of Competency
5.	gt	gross tonnage
6.	HCG	Hellenic Coast Guard
7.	IMO	International Maritime Organization
8.	ISM	International Management Code for the safe operation of ships and for pollution prevention
9.	kts	knots (nautical miles per hour)
10.	Lat, Long	Latitude, Longitude
11.	LT	local time
12.	m	meters
13.	ft	foot
14.	nm	nautical mile (1852 m)
15.	OOW	Officer of the Watch
16.	RO	Recognized Organization. An organization which meets the relevant conditions set forth by respective international legislation and has been authorized by the flag State Administration to provide the necessary statutory services and certification to ships entitled to fly its flag
17.	SOLAS	Convention for the Safety of Life at Sea 1974, as applied
18.	UTC	Universal Coordinated Time
19.	VDR	Voyage Data Recorder

1. Executive Summary

M/V Stella was a general cargo freighter that by the time of the marine accident was trading in the Mediterranean Sea.

On 31 October 2013 Stella was reported to have sailed from Aliaga, Turkey heading for Cyprus.

At 0320 on 02 November 2013, Piraeus Joint Rescue Coordination Center was alerted after receiving an EPIRB emergency signal that had been transmitted from Stella following her grounding on a shoal reef and rapid foundering, in position 35° 52', 08 N - 026° 50', 02 E that is 0.6 nm E of Astakida Islet.

Based on crew reports at the night of the marine casualty the Chief Mate was on the watch while Stella was approaching the NE sea area of Astakida Islet.

At approximately 0230 she grounded on a shoal reef, dozens of meters NE of the Islet's coastline, causing a crack of about 1 m length on her hull that resulted in water ingress into the cargo hold. The Master and crew were alerted. It was reported that minutes after the grounding the Master maneuvered astern and she immediately started listing to starboard.

The Master was last seen on the bridge broadcasting a Mayday distress signal in voice through VHF.

Stella was finally sunk almost 30 to 40 minutes after the grounding incident.

A search and rescue operation was immediately launched by the Hellenic Coast Guard S&R Operational Center and nearby vessels were alerted and instructed to engage in the undergoing searches while two patrol vessels as well as one helicopter of the Hellenic Coast Guard were deployed on scene. The Local Coast Guard Authority of Karpathos also instructed local fishing boats to proceed to the sea area of Astakida Islet.

At approximately 0500, Stella's life raft with 5 of her crew members was spotted by the HCG Helicopter and 30 minutes later was approached by the fishing boat Alexandros. The rescued crew members were recovered by the HCG Helicopter and were transferred to Rhodes Island. They reported that Stella had sunk after hitting on a shoal reef, very close to Astakida NE coastline and five out of the six crew members abandoned her and boarded the life raft while the Master was missing.

The S&R operations continued for the next three days however the Master was not found.

On 11 November 2013, a body was found at Santorini Island NE shoreline and following DNA tests it was identified that it was the body of Stella's missing Master.

2. Factual Information

2.1 Particulars of Stella

Name of Vessel	STELLA
Call Sign	9LD2545
Flag State	Sierra Leone
Port & no of Registry	Freetown
IMO Number	6727296
Ownership	Balmoral Services Co. - Marshall Islands
Type of Vessel	General Cargo
Classification Society	International Register of Shipping
Year built	1967
Shipyard	N.V. Scheepswerf Appingedam, Holland v/h A. Apol C.V
Construction	Steel
LOA (Length over all)	29.50m
Breadth (extreme)	7 m
Depth	3.1m
Deadweight	284
Gross tonnage	199
Net Tonnage	98
Engine	One diesel engine Caterpillar Tractor Co. 1x343TA
Document of Compliance	Not required
Safety Management Cert	Not required
Last Port State Control inspection	10-10-2013 Piraeus PSC Office

2.2 Voyage Particulars

Vessel's name	Stella
Port of departure	Aliaga anchorage - Turkey
Port of arrival	Unspecified port in Cyprus
Type of voyage	Mediterranean Sea
Cargo information	In ballast
Manning	06 during last voyage
Minimum safe manning	05

2.3 Marine casualty information

Vessel's name	Stella
Type of casualty	Very serious
Date and time	2 November 2013 at 0230 LT
Position	Lat: 35° 52'.4 N / Long: 026° 50'.2 E
Location	0.6 nm E of Astakida Islet (17 nm W of Karpathos north end, SE Aegean Sea)
External environment	NW winds 4 Bfrs / sea state moderate visibility very good - night time
Ship operation	On passage - navigation
Voyage segment	En route to Cyprus
Consequences (to individuals, environment, property)	Loss of the Master Crack of approximately 1 m of length on bottom shell plating Strb side/water ingress /sinking / total loss Self dissolved oil slick - approximately 500m length, 10-20m width

2.4 Emergency response

Authorities & services involved - S & R Units

Hellenic Coast Guard Search & Rescue Coordination Center → Coast Guard Officers

Search & Rescue

- 1 Coast Guard Helicopter
- 2 Coast Guard Patrol Boats
- 4 near-by fishing boats
- 3 near-by cargo vessels

3. Narrative

The evolution of the events during the marine accident is based on crew's interviews as well as documents and reports. Stella was not required to be equipped with VDR and no electronic evidence were available from other electronic sources as according to her tonnage (less than 300gt) she was not required to be equipped with AIS system.

3.1 General Cargo Stella

General cargo Stella was built in 1967, in Holland. She was a single hold freighter geared with one derrick and was engaged in coastal trading (Figure 1).



Figure 1. M/V Stella (photo source marine traffic taken under the name Stenland).

Based on available data, after her delivery date she was initially named "Gullfjell" flying the flag of Norway. In 1973 she was renamed to "Gullsand" and in 1985 to "Beth Annja" while in 1986 under the same flag she was renamed to "Stenland".

In 2010, she was operating under the "Safe fleet Maritime Co." based in Syrian Arab Republic.

On 01 May 2012, Stella, that was still under her former name "Stenland" was arrested by the Competent Greek Authorities, in Argolis Gulf (figure 3) for conducting improper trading as she was carrying smuggled goods (tobacco). Stella was order to call at Kilada fishing port (figure 2) and on the following days she was ceased at Piraeus port.

By that time she was flying the flag of Comoros and was registered in Moroni Registrar.



Figure 2. Stella berthed in the port of Kilada located in Argolis Gulf after she was arrested under her former name Stenland (photo source marine traffic taken on 02-05-2012).

Based on the collected documents during the investigation process, on August 8th, 2013 she was renamed to Stella under Sierra Leone flag and she entered the Class of the International Register of Shipping Classification Society.

More specifically Stella was provided with a new set of provisional Statutory Certificates that were valid for a short term of six months, as shown in below table:

Provisional Certificate	Date of issue	Valid	Annotation/conditions
Registry	08/08/2013	07/02/2014	Owners: Balmoral Services Co. located in Majuro, Marshall Islands
Minimum Safe Manning	08/08/2013	07/02/2014	Master - Deck Officer - Look out AB - Engine Officer - Watch Engine rating
Radio Station License	08/08/2013	07/02/2014	For sea Areas A1 and A2 at least one deck officer holder of GOC

On 09 October 2013, Stella was subjected to an initial survey by International Register of Shipping at Salamis port due to the change of her flag.

The survey report that was completed, recorded that: *“Surveys completed with satisfactory results and fresh certificates were issued till 13/11/2013 where the vessel was to be submitted to dry dock for full surveys as well as applicable repairs especially iwo Strb Side aft of poop deck where a buckling has been observed.”*

Following the survey, the following listed certificates that were obtained during the safety investigation, were issued on the same day:

Provisional Certificate	Date of issue	Valid	Annotation/conditions
Interim Certificate of Classification	09/10/2013	13/10/2013	Restricted trading Area of East Mediterranean
Cargo Ship Safety Certificate	09/10/2013	13/10/2013	Life saving appliances and equipment of lifeboats for 5 persons
International Load Line Certificate	09/10/2013	13/10/2013	Navigation trading area A1 (GMDSS)
International Tonnage Certificate	09/10/2013	Until 5 months	Trading area: Coastal voyages in Mediterranean, Black Sea ports

On 10 October 2013, a “more detailed inspection” was carried out by Piraeus PSC Office identifying 9 deficiencies in total that were rectified prior to her departure.

3.2 Stella voyage from Greece to Turkey

Based on information collected during the investigation process, on 10 October 2013, Stella sailed from Piraeus Anchorage and headed to Turkey (figure 3). Five crew members were recruited 10 days before her departure by a Shipping Agent that was appointed by the reported Owners, in order to navigate Stella to Turkey and deliver her to new crew that was scheduled to man her .

During the passages from Greece to Turkey no problems were reported apart from the fact that a fuse of the radar was off however it was replaced by a spare one.

At the night time, on 12 October 2013, she was reported to have arrived in the Gulf of Aliaga. On the next day, the crew that was recruited in Greece signed off and six new crew members signed on. Crew change over was reported to have lasted for one hour.

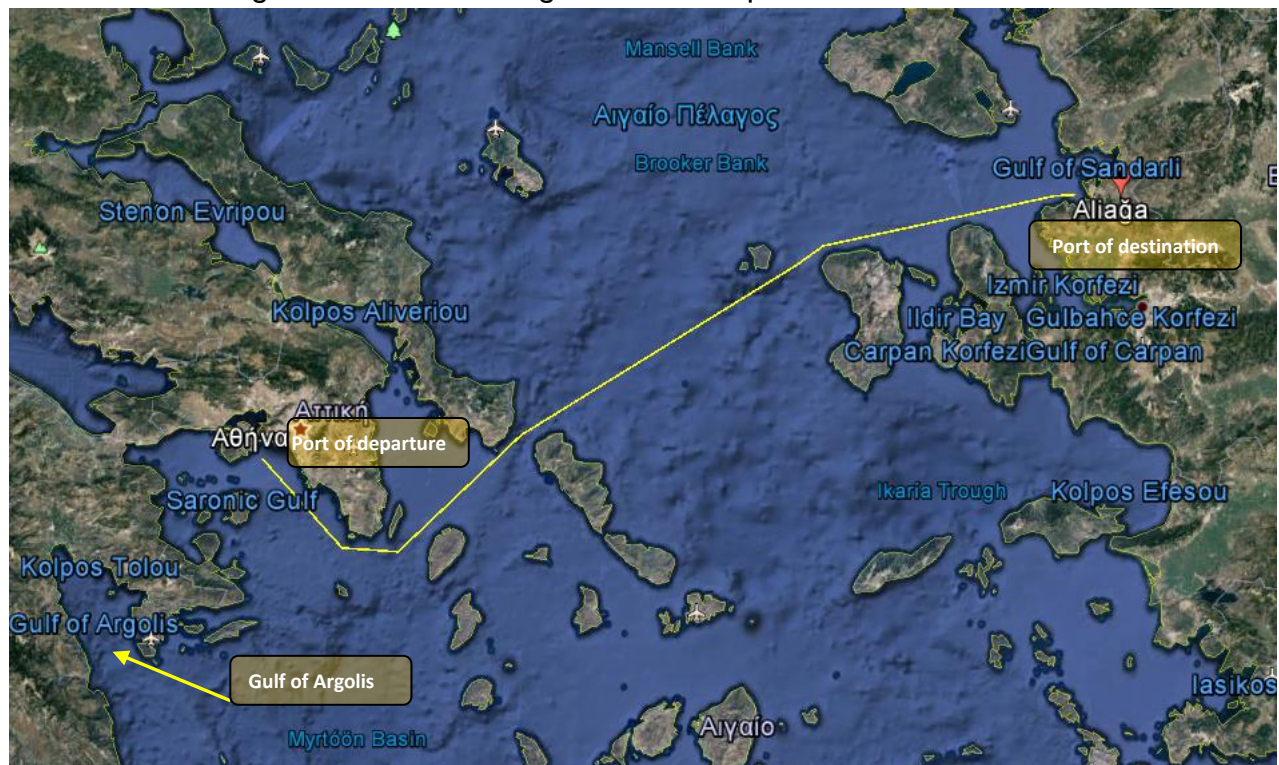


Figure 3. Stella voyage from Piraeus, Greece to Aliaga, Turkey as conducted according to information obtained during the investigation process and depicted on Google Earth maps. Gulf of Argolis is also shown where Stella, under her former name Stenland, was arrested in May 2012.

3.3 Voyage from Turkey to Cyprus

According to crew interview information, Stella remained at Aliaga anchorage until October, 31st when she departed in ballast condition for Cyprus. However, the exact next port of call had not been notified to the Master and a general instruction had been given to head towards Cyprus.

As already stated, no information was able to be obtained for Stella voyage plan and the passages followed towards the Island of Cyprus, located in the Eastern Mediterranean Sea.

However, under the main principals for voyage planning deriving from good seamanship

as well as from respective legislation pursuant to IMO Res. 893 (21) “Guidelines for voyage planning”, the appropriate and properly voyage planning that was indicatively plotted on Google Earth Maps is shown in the following figure 4.

A quick check on the drafted courses that had to be navigated in relation to Stella sinking position evinces that Stella was navigating more than 50nm southwesterly of the appropriate passage she had to navigate.

More specifically, instead of following courses projected between the Turkish coastline and the Greek Islands as depicted below in figure 4, Stella was evident that on the day of the marine casualty was navigating with southerly course towards the sea area west of Karpathos Island without any apparent reasoning, as it was emerged through the crew interview process.

It was furthermore reported during the interview process that after having departed from Aliaga she headed towards the North sea area of Chios Island and continued southerly, navigating west of the island’s coastline, practically making a round in relation to the courses she reasonably had to follow, that is between Chios Island and Turkey.

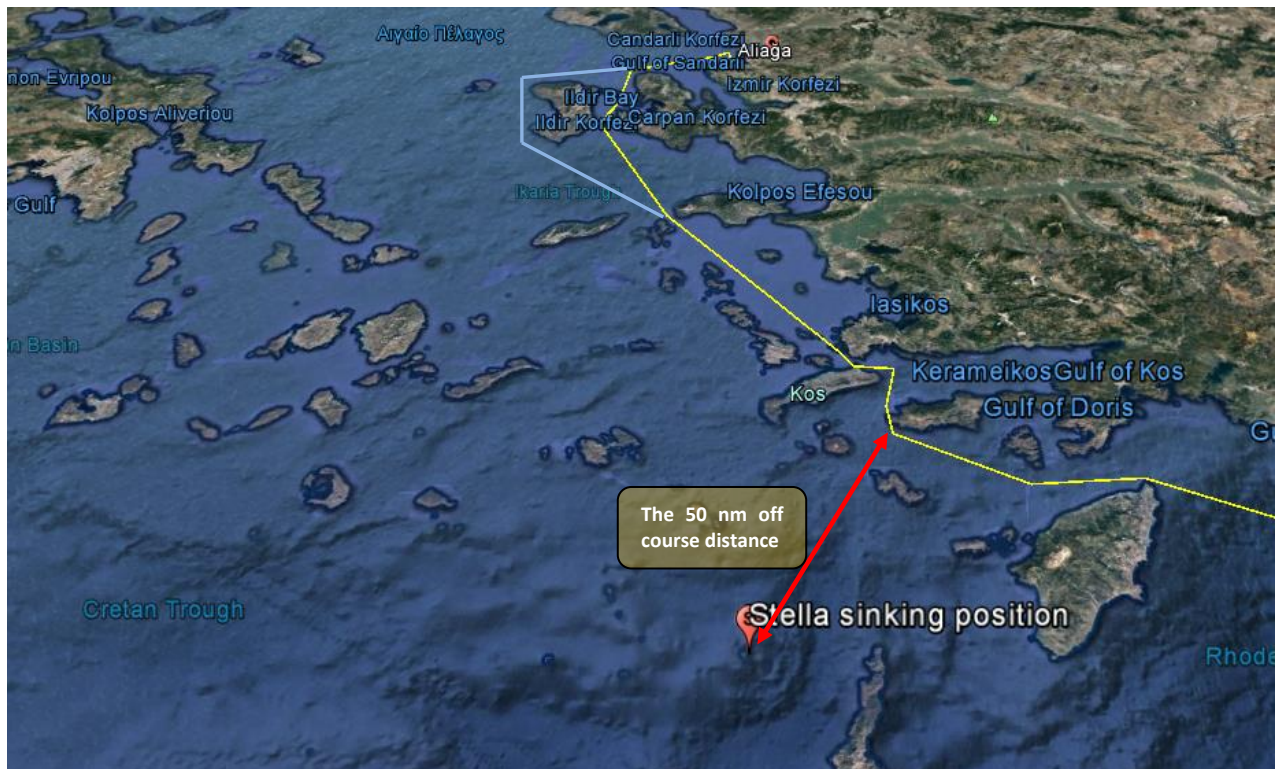


Figure 4. Stella indicated and appropriate passage planning in yellow line from Aliaga Gulf, Turkey towards Cyprus. The blue line represents the reported courses that were actually followed. Sinking position also demonstrates the distance off the appropriate passage she had to follow.

3.4 The occurrence

As no electronic evidence was available to support the sequence of events that led to occurrence and Stella’s total loss, the information presented is only based on crew statements.

The Chief Mate reported to have taken over the watch from the Master at midnight. By that time Stella was navigating at approximately 7 knots keeping a course close to 197°.

He also reported that his watch was quiet as the weather conditions were good and there

was no marine traffic.

The voyage plan was also stated that had been prepared by the Master and had been plotted on nautical paper charts and GPS.

The exact orders for the navigation during Chief Mate's watch as well as passage plan instructions could not be extracted. According to Chief Mate's statement he intended to sail southerly and probably to alter Stella's course at the south end of Karpathos Island and head towards Cyprus.

Stella course was reported to had been monitored on an hourly basis by plotting data positions on the paper chart that were extracted from the GPS.

At approximately 0200, Stella was reported to have been navigated 3.5nm off the N part of Astakida Islet, running at 7 knots and keeping a course of approximately 197°.

At Approximately 0230, the Chief Mate stated that he felt a vibration noise denoting that Stella impacted on a solid object without him originally realizing what exactly had happened.

He immediately called the Master and activated the emergency general alarm and further set the engine lever to stop position. He then turned on the headlight and strikingly enough he saw that Stella had been grounded on a shoal reef with her starboard side. During the interview process he reported that he had seen nothing of the land Stella was heading to.

Soon after, the Master entered the bridge and reversed the engine in his effort to remove Stella from the grounding spot despite the fact that by that time the Chief Engineer that was on the bridge advised him not to remove the ship from the grounding position as there was high risk of foundering due to water ingress.

At the same time the rest of the crew members had mustered on the bridge. The Master ordered the Chief Mate and the AB to go on deck and assess the damage.

The Chief Mate rushed his way on deck and reported that a crack was spotted on the bottom of the cargo hold starboard section of approximately 1 m of length.

More specifically, it was observed that the bottom was holed and the double bottom tanks were penetrated causing a crack to the cargo hold plating as indicatively shown in following figure 5 & 6.

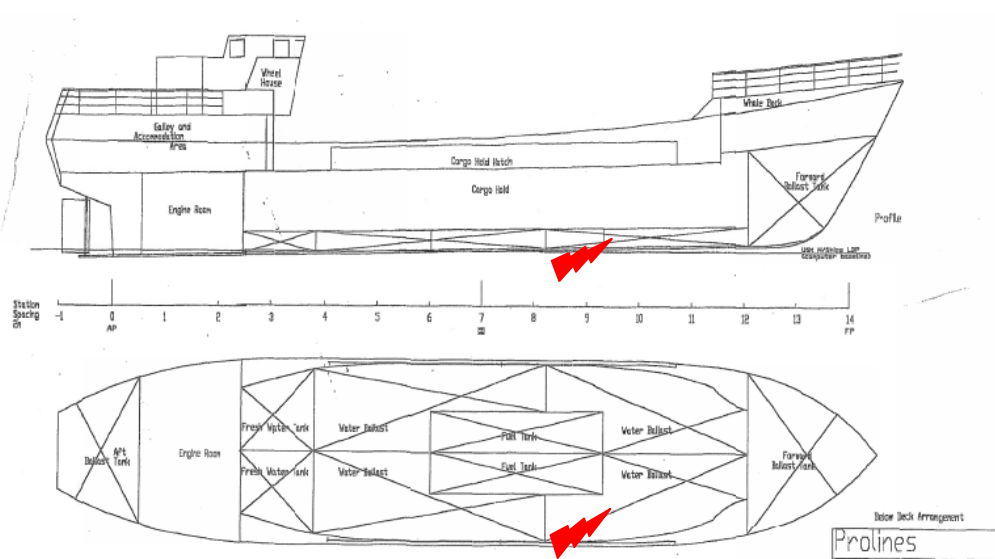


Figure 5. Stella drawing indicatively showing the damaged bottom section as reported



Figure 6. Stella in dry dock, located in the Adriatic Sea. The starboard bottom section that was reported to have been damaged and holed (photo source marine traffic taken on 08-03-2012).

After Stella was refloated, the Chief Mate noticed that she had listed to starboard by 2° and soon after by 5° that was rapidly increasing.

Consequently, the Chief Mate realizing the difficult situation Stella was encountering, he told the Master that it was meaningless to stay on board and suggested to abandon her. The Master ordered his crew to put on their life jackets and to prepare the life raft for abandoning the ship, as the life boat that was secured at the port side was not practically an option to be launched since Stella was progressively listing to starboard (figure 7).



Figure 7. Stella in Bijela dry-dock, located in the Adriatic Sea. The life boat is shown at her port side (photo source marine traffic taken on 05-03-2012 under the name Stenland).

Soon after the life raft was launched into the sea and the rope ladder was set. The Chief Engineer was reported to have been the first one to climb down and to get in the life raft. The AB, the 2nd Engineer and the Cook followed while the Chief Mate was the last one to board it.

According to statements, by that time the Master was seen on the bridge, holding his life jacket and a portable VHF while in parallel he was broadcasting a Mayday distress signal in voice through VHF.

Shortly afterwards, Stella listed heavily to starboard and capsized. It was reported that the crew approached the capsized vessel casting about the Master, by calling his name and even by hitting on Stella's bottom, however they received no response.

Immediately after, the crew on the life raft managed to pull away from Stella as they realized that she was about to sink.

According to crew statements Stella was finally sunk almost 30 to 40 minutes after the grounding incident that is at approximately from 0300 to 0310. It was further reported that the crew on board the life raft made every effort to stay close to the casualty scene awaiting the rescue units, as no communication device was taken during the abandonment from Stella.

3.5 Emergency response - search & rescue operations

At 0310 the Search & Rescue Coordination Center of the Hellenic Coast Guard, received a distress call from Stella's EPIRB (Emergency Position Indicating Radio Beacon).

A large-scale Search & Rescue operation was immediately launched and Hellenic Coast Guard S&R boats were deployed on casualty scene.

One Hellenic Coast Guard helicopter was also mobilized and was engaged in the operation.

The Search & Rescue Coordination Center broadcasted the Mayday relay message and established communication with near-by vessels. The Local Coast Guard Authority of Karpathos communicated with fishing boats operating at the area and instructed them to proceed to the casualty scene.

At approximately 0500, Stella's life raft with 5 of her crew members was spotted by the HCG Helicopter and 30 minutes later was approached by the fishing boat Alexandros (figure 8).

The five rescued crew members were hoisted on the Helicopter and were transferred to Rhodes Island.



Figure 8. Stella's rescued crew in the life raft by the time it was approached by the fishing boat Alexandros. The HCG Helicopter is shown on top of the photo (source fishing boat skipper).

During the next hours, a Coast Guard patrol boat found Stella's EPIRB as well as a life jacket marked with her name and port of registry.

The Search and Rescue Operation continued for the next three days following the casualty date, searching for the missing Master nevertheless he was not found.

During November 2013, the competent Ministry of Georgia contracted a Salvage Company for conducting underwater surveys and searches aiming to recover the missing Master in case he had been trapped in the sank vessel. A salvage tug was dispatched on the area concerned equipped with modern sonar. However and despite the fact that the operation was conducted by experts for almost 7 days and was localized within the sea area Stella was reported to have sunk, the wreck could not be tracked down.

On 30 November 2013, a body was found at "Apothikes", located at the southeast coasts of Santorini Island, approximately 70nm west-northwesterly from the casualty position. On 07 February 2014, according to DNA tests conducted by the Forensic Agency the body was identified as the missing Master of Stella.

3.6 HBMCI Safety Investigation

The Hellenic Bureau for Marine Casualties Investigation, following Stella foundering, launched a safety investigation on the grounds of the respective provisions of Directive 2009/18/EC, as incorporated in national legislation by Law 4033/2011 (Government Gazette A' 264) and IMO Casualty Investigation Code.

Although HBMCI had immediately notified all interested parties involved in the marine casualty, however no communication with the Owners could be established post to the incident.

On 5 November 2013, Stella's rescued crew members arrived in Piraeus and were invited by HBMCI to facilitate to the conduct of the safety investigation.

The interviews took place on the same day at HBMCI premises. Due to the fact that all the interviewees could not communicate in English, the interview process was assisted by Officials of the Georgian Consulate.

As already stated, correspondence with the Owners of Stella could not be established despite the efforts of the investigation team to communicate with them on the available contact details. The Owners representative that was tracked down to have been appointed by them in order to recruit the crew in Greece was not able to provide any contact details.

In view of the above and taking into consideration that:

- in 2012, Stella was arrested by the Greek Competent Authorities for illegal trading;
- the alleged Owners abandoned her and her crew following her loss;
- the interview process indentified that she was not navigating under a specific voyage plan, while the reasons Stella navigated off the appropriate passage could not be supported by the navigational Officer;
- Stella was in parallel listed as a vessel of interest for the Greek Competent Authorities fighting against smuggling; while;
- Stella was not navigating under the safety rules foreseen under her Cargo Ship Safety Certificate that provided safety appliances for 5 crew members although prior to her last voyage 6 seafarers were recruited;

the analysis of the examined case was limited and safety recommendations were not addressed to Owners/Managers as correspondence could not be established.

4. Analysis

The analysis of the examined marine casualty aims to identify and determine the factors and causes which contributed to the occurrence, taking into account the sequence of events and the collection of the investigation information and data focusing both on specific points of the temporal evolution of them, as well as on the root causes in order to draw useful conclusions leading to safety recommendations.

Nonetheless the information obtained from several sources denoted that certain events that led to the marine accident as well as contributing factors were outside the respective legal framework that governs the safe operation and management of vessels under applicable Rules and Regulations, as well as to legal trading.

On above grounds, the analysis of the marine casualty was only focused on specific identified factors that led to conclusions however safety recommendations were not produced and not addressed to parties involved as the alleged Owners could not be contacted and it was reported that Stella was listed as a vessel of interest for the Competent Greek Authorities fighting against smuggling.

4.1 Stella crew

4.1.1 The Master

According to information collected the Master was 40 years of age. He was a holder of COC Certificate that was endorsed by the Maritime Administration of Sierra Leone and was capable to serve as Master on Ships of 3000 GT or more. He was also a holder of a GMDSS operator Certificate. Both endorsements were issued on 10 September 2013. He had joined Stella on 13 October 2013 in Turkey together with the rest of the crew.

4.1.2 The Chief Mate

The Chief Mate aged 39 was a holder of COC, recording that he was capable of performing duties as an Officer in charge of the navigational watch. It was endorsed by Sierra Leone Maritime Administration on 01 November 2013 that is one day before the marine casualty and valid until 31 January 2014.

According to information obtained during the interview process he had graduated from a Naval Institute in Batumi, Georgia, in 1994. He had been employed on small cargo coastal ships as 2nd Officer and Chief Mate.

He was a friend of the Master and he was recruited by him. He joined Stella on 13 October 2013 in Aliaga, Turkey together with the Master and the rest of the crew and he was performing the 1200-1800/2400-0600 bridge watch.

4.1.3 The Chief Engineer

The Chief Engineer was 36 years of age. It was reported that he had served on various types of cargo vessels for almost seven years.

He had a COC recording that he was capable for carrying out duties as an Officer in charge of engine watch on ships powered with engines of 750 KW or more. His COC was endorsed by the Maritime Administration of Sierra Leone, issued on 01 November 2013 and valid until 31 January 2014.

He joined Stella on 13 October 2013 in Aliaga, Turkey together with the Master and the rest of the crew and he was performing the 1800-2400/0600-1200 engine watch.

4.1.4 The 2nd Engineer

The 2nd Engineer, aged 41, was a holder of a COC recording that he was able to perform engine watches on ships powered with engines of 750 KW or more. His COC was endorsed by the Maritime Administration of Sierra Leone, issued on 01 November 2013 and valid until 31 January 2014.

It was reported that he was recruited by the Master and that he had 10 years experience on small cargo vessels.

He joined Stella on 13 October 2013 in Aliaga, Turkey together with the Master and the rest of the crew and he was performing the 1200-1800/2400-0600 engine watch.

4.2 Manning and personnel

Stella crew complement was consisted of the Master, the Chief Mate, the Chief Engineer, the 2nd Engineer, one AB and one Cook. Her manning was in compliance with the requirements of her Flag, pursuant to SOLAS/Chapter V/ Regulation 14.2, as applied, that provided 5 crew members in total, including the Master while the Cook was counting in excess of her Minimum Safe Manning provisions.

Nevertheless, according to the notation on the "Cargo Ship Safety Certificate" issued on 09 October 2013 by her Class:

"The life saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance of the Code (Code of Safety for Cargo Ships of Less than 500 Gross Tonnage) for a total number of 5 persons".

Considering the above it was emerged that by the time the marine accident occurred Stella crew complement in number (06) was in excess of the Minimum Safe Manning Standards required by her Flag, yet in contravention of the maximum number of persons that were permitted to be onboard while at sea.

Seeing the above, it was concluded that the Master as well as the Owners/Managers disregarded the provisions and conditions set out by her Class in relation to the efficient safety equipment for the provided number of crew members.

In view of the above it was deduced that Stella was not navigating under the safety rules foreseen by her Cargo Ship Safety Certificate and inductively her Class was not maintained.

4.3 Main navigational equipment & aids

Based on information obtained through the interview process by the Chief Mate, Stella was equipped with 1 Radar, 1 GPS Plotter, 1 electronic chart with GPS probably on a PC and 1 NAVTEX.

The respective Cargo Ship Safety Certificate issued by Stella's Class recorded the lifesaving equipment and general remarks regarding the condition of her hull, extinguishing appliances, navigational lights etc. without specific references to the navigational equipment and aids. Consequently, the reported navigational equipment

could not be verified as no relevant information could be sourced from the owners that did not reply to the correspondence addressed, or any other document.

It was further reported that Stella's Radar had a malfunction on her voyage from Greece to Turkey, while on the night of the marine accident the Chief Mate alleged that it was malfunctioning again and could not define Stella's exact position. Nevertheless he reported that he did not take any actions to use any other available means for safe navigation and foremost to inform the Master accordingly.

In view of the above it derived that at the time of the marine casualty the radar was not operative due to malfunction and the OOW could not utilize it.

4.4 Stella passage planning and execution

STCW 78, Chapter VIII/Part 2 "Voyage planning" sets out the general requirements for the obligation of the Masters to plan the intended voyage.

Additionally, SOLAS/Chapter V/Reg.34, as applied, determines the fundamental principles for "Safe navigation and avoidance of dangerous situations".

Aforementioned SOLAS Regulation also addresses the "Guidelines for voyage planning", that were established by IMO Assembly Resolution 893 (21), to be taken into account by Masters when developing the passage plan with the objective to safely and effectively navigate a vessel and to monitor the progress and execution of the planned routes.

In particular, aforementioned resolution conceives passage planning as a four phases' procedure, that is:

- **appraisal**, pertain to all information relevant to the contemplated voyage to be considered;
- **planning**, preparing the voyage plan on the basis of the fullest possible appraisal, covering the whole voyage from berth to berth.
- **execution**, the conduct of the passage in accordance with the plan or any changes made thereto.
- **monitoring**, the progress of the vessel in accordance with the voyage close and continuous control.

Based on evidence collected during the investigation process it was concluded that despite the fact that Stella voyage from Aliaga to Cyprus would project passages between the Turkish coastline and the Greek Islands of the eastern and southeastern Aegean Sea leading to passages towards east at open sea to the port of her destination in Cyprus, it was stated that she had navigated sea areas that did not deem to be appropriate in view of aforementioned legislation as well as of good seamanship (see figure 4).

Further the grounding and sinking positions, approximately 50nm off the suitable to her destination passage, denotes that Stella was navigating under no specific voyage plan that was in line with the alleged trading purposes.

Seeing the above it was deduced that the sea area Stella navigated could not be considered as a voyage segment that could be included in a passage plan towards Cyprus denoting that by the time of the marine casualty she was not conducting a passage in accordance with any voyage plan prepared thereto.

Taking into account the aforementioned it derived that the Master and Chief Mate of Stella disregarded the relevant fundamental provisions of SOLAS 74 and STCW 78 as applied for passage planning under the framework of proper trading activities.

4.5 The Chief Mate's navigational performance

4.5.1 Proper Look out

COLREGS '72, rule 5 requires that:

“Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision”.

STCW/Part A/Chapter VIII / Part 4-1 states that:

“13. The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the ship and for complying with the International Regulations for Preventing Collisions at Sea, 1972, as amended.”

Look out watch aspect is also regulated in followings par. 14 and 15 of aforementioned STCW Code, stating that:

“14. A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972, as amended and shall serve the purpose of:

- .1 maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment;*
- .2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and*
- .3 detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.*

15. The lookout must be able to give full attention to the keeping of a proper lookout and no other duties shall be undertaken or assigned which could interfere with that task.”

Taking into consideration the sequence of events that are based on interview information and led to the examined marine casualty, it is presumed that the Chief Mate failed to follow aforementioned watchkeeping principals.

4.5.2 Lack of knowledge and experience

The Chief Mate, as already stated was recruited by the Master and he had been employed on small cargo coastal ships as 2nd Officer and Chief Mate.

During the interview process it was identified that he was not given concrete instructions for the voyage under execution while it was presumed that his knowledge and experience in navigation was not satisfactory as the information provided considered to contain a number of generalities.

More than that, according to the information provided through the interview process, it was alleged that prior to the marine casualty, the radar was malfunctioning causing serious problems to Stella's fixing confirmation and to her safe navigation.

However, it was further emerged that neither he reported the radar's malfunction and the encountering situation to the Master, nor to the competent Flag and Coastal authorities.

In view of the above it is deduced that the Chief Mate did not performed his duties properly and failed to follow rules and regulations as he disregarded the responsibility to report the defect of the radar to the Master and to the appropriate Authorities for the purposes of avoiding a possible engagement in a marine accident or incident that would

endanger Stella's crew safety and would threaten the marine environment. Such a responsibility is in general arising and outlining by art. 17 "Reporting of incidents and accidents at sea" par 1 point (b) in conjunction with art. 19 "Measures relating to incidents or accidents at sea" par. 2 of EU Directive 2002/59, as applied as incorporated in national legislation by Presidential Decree 45/2005 at its latest version and broadly foreseen pursuant to SOLAS/Chapter I/Regulation 11 (c).

Moreover, it was reported that he did not take any additional measures in relation to Stella's safe navigation such as plotting her position on chart at frequent intervals for instance every 15 minutes.

Taking into consideration the aforementioned it is deduced that the Chief Mate's knowledge and experience in navigation were very limited.

4.7 Environmental Conditions

As already reported, the environmental conditions at the time prior to the marine casualty were reported to be good as following presented.

Sea state	Moderate
Wind	NW 4 Bfrs
Air temperature	12 ° C
Barometric pressure	1008 mb
Visibility	Very good

Taking into consideration the prevailing weather conditions during the night of the marine casualty it is assumed that the environmental conditions affected the Chief Mate awareness and consequently his watch performance.

4.8 Situational awareness¹

Situational awareness is considered a critical element for standard watch management and safe navigation, broadly involving human performance under the influence of environmental, personal, organizational and informational factors.

It is the accurate perception of factors and conditions that affect the vessel's safety during a specified period of time. Situational awareness is one of the elements included in STCW/Chapter II/Section "Table A-II/1" for the function: "Navigation at the operational level", related with the knowledge, understanding and proficiency of the navigational Officer.

The competency for the function is demonstrated through seagoing experience and training.

Based on the collected data, it was emerged that the prevailing navigational conditions in relation to external environment such as the lack of marine traffic and the very good weather conditions were not assessed by the Chief Mate and believably created a sense of complacency or relaxation.

Subsequently the self-situational awareness of the Navigation Officer was seriously reduced.

¹ **Situational awareness:** the perception of the elements in the external and internal environment, the understanding of their meaning and the projection of their status in the near future.

**The following conclusions should not be taken as a presumption of blame or liability under any circumstances.
The juxtaposition of these should not be considered with any order of priority or importance.**

5. Conclusions

(references denote respective parts of the analysis)

- 5.1** Stella was not navigating under the safety rules provided in the Cargo Ship Safety Certificate and inductively her Class was not maintained (§ 4.2).
- 5.2** The Master as well as the Owners/Managers disregarded the provisions and conditions set out by her Class in relation to the efficient safety equipment for the provided number of crew members on her voyage to Cyprus (§ 4.2).
- 5.3** The Chief Mate that was the OOW did not take any appropriate actions as well as to report the radar malfunctioning to the Master and to the Competent Coastal Authorities (§ 4.3).
- 5.4** Stella navigated sea areas did not deem to be appropriate in view of respective legislation (IMO Res. 893(21)) as well as of good seamanship and experience (§ 4.4).
- 5.5** Stella was navigating under no specific voyage plan that was in line with the alleged trading purposes (§ 4.4).
- 5.6** The Master and Chief Mate of Stella disregarded the relevant fundamental provisions of SOLAS 74 and STCW 78 as applied for passage planning under the framework of proper trading activities (§ 4.4).
- 5.7** The Chief Mate failed to follow watchkeeping principals as foreseen by COLREGS '72, rule 5 and STCW/Part A/Chapter VIII / Part 4-1 (§ 4.5.1).
- 5.8** The Chief Mate did not performed his duties properly and failed to follow rules and regulations disregarding the responsibility to report the defect of the radar to the Master and to the appropriate Authorities as outlined pursuant to reported provisions in respected analysis section (§ 4.5.2).
- 5.9** The Chief Mate's knowledge and experience in navigation was very limited (§ 4.5.2).
- 5.10** The good environmental conditions affected the Chief Mate awareness and consequently his watch performance (§ 4.7).
- 5.11** The prevailing navigational conditions in relation to external environment such as the lack of marine traffic and the very good weather conditions were not assessed by the Chief Mate and believably created a sense of complacency or relaxation (§ 4.8).
- 5.12** The self-situational awareness of the Navigation Officer was seriously reduced (§ 4.8).

6. Actions Taken

Stella was not required to operate under the provisions of International safety Management Code and consequently actions taken on behalf of the managers/ owners were not sought.

7. Safety Recommendations

Safety recommendations were not produced and not addressed to parties involved as the Owners could not be contacted and certain information and evidence led to the conclusion that by the time of the marine casualty Stella was not operating in compliance with relevant International Conventions and Instruments.

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Accident Investigation Report 13/2013

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