

KYPIAKH



ΔΗΜΟΚΡΑΤΙΑ

REPUBLIC

OF CYPRUS

DEPARTMENT OF MERCHANT SHIPPING  
MINISTRY OF COMMUNICATIONS AND WORKS

# MARINE ACCIDENT REPORT

Collision between

**“CORVUS J”** and **“BALTIC ACE”**

in the North Sea on 5 December 2012

92A/2012

1043/2013

The sole objective of this investigation is to prevent future accidents and malfunctions. This investigation does is not meant to ascertain fault, liability or claims.

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## **1.SUMMARY**

On 5.12.2012 container ship CORVUS J, registered in Cyprus, collided with the car carrier BALTIC ACE, in the North Sea, 39 nautical miles southwest of Rotterdam, a sea area of dense traffic. As a result, the Baltic Ace listed and sank in 15 minutes and 11 members of her crew lost their lives in the sea while 13 were rescued, 5 were recovered dead and 6 remain missing. The accident raised, among other issues, the issue of the vulnerability of car-carrier ships, allowed by current IMO regulations to have compartment arrangement of patterns similar to that of the Baltic Ace.

An investigation of the accident was also carried out by the Bahamas Maritime Authority, where the BALTIC ACE was registered.

## **2.FACTUAL INFORMATION**

### **Ships particulars**

The particulars of the two ships are shown in table 2.1 :

|                          | CORVUS J   | BALTIC ACE   |
|--------------------------|--|--|
| Flag/register            | Cyprus   | The Bahamas  |
| Identification           | IMO 9262895  | IMO 9386213  |
| Main dimensions :        |  |  |
| Length overall           | 134,06   | 147,93   |
| Beam                     | 19,40  | 25,03  |
| Depth                    | 9,45   | 11,80  |
| Draft (summer full load) | 7,30   | 7,90   |
| Gross tonnage            | 6370   | 23498  |
| Deadweight               | 8370   | 7787   |
| Year of build            | 2002   | 2007   |
| Management               | Jungerhans Maritime Services GmbH<br>C& Co. KG, Haren-Ems, Germany | Stamco Ship Management Company<br>Limited, Piraeus, Greece                         |
| Construction             | Container ship   | Ro-Ro car carrier with 8 fully enclosed<br>cargo decks of total capacity 2132 cars |

Table 2.1 : Ships particulars

### **Certification**

The ships certificates, including Class certificates, and crew certificates of each ship were valid and as required by the Conventions. Manning documents were satisfied.

### 3.NARRATIVE

On 4.12.2012 m/v CORVUS J departed from Grangemouth, Scotland, with a crew of 12 and a cargo of 73 containers. The port of destination was Antwerp and her drafts were 4,5m forward and 6,0m aft. On 5.12.2014 at almost 6pm the ship was approaching the Steenbank Pilot station where a pilot was to board the vessel. At that time the speed was 12,5 knots and had come in a crossing situation with m/v BALTIC ACE and m/v ICE POINT, both sailing from the Southwest direction.



Picture 3.1 : The CORVUS J after the damage

The BALTIC ACE departed from Zeebrugge at 2pm on 5.12.2012 with a crew of 24 and a cargo of 1417 vehicles with destination Kotka, Finland. Her drafts were 7,00m forward and 7,50m aft. At 5.50pm the vessel was in a Northeast course at a speed of 19 knots.



### Picture 3.2 : The BALTIC ACE

At 6.09pm the Corvus J had a minor turn to starboard. The Officer on watch (OOW) the Baltic Ace called the OOW on the Corvus J by using the VHF radio and tried to confirm about Corvus J intentions. He acknowledged that the Baltic Ace was to alter her course a little to port and the OOW on the Corvus J confirmed. At 6.11pm the Baltic Ace changed course by 10 degrees port. With this motion the OOW tried to increase the distance between the two ships. In the mean time, Corvus J turned a little more to starboard.

The Baltic Ace OOW called again the Corvus J. They agreed that the Baltic Ace would turn a little more to port.

The following conversations were recorded:

#### At 6.10 pm

Baltic Ace: “Sir, I see you alter course”.

Corvus J: “Ok, because I passing one vessel crossing my bow...ok, thank you very much.”

#### At 6.11 pm

Baltic Ace: “Sir, I see you alter course to starboard now, yes?”

Corvus J: “Just now, I will keep this course because another vessel crossing my stern...she going behind me...it will be possible (changing course little bit?)...and we change when we ...because ...after he passing my stern”

Baltic Ace: “Ok, then I go more to port”

Corvus J: Ok, thank you very much”

#### At 6.13 pm

Baltic Ace: “Yes Sir, you keep your course like that?”

Unknown: “Yes, I...”.



Picture 3.3 – Position of the collision

With the given speeds and courses the distance between the two ships was decreasing. The Baltic Ace OOW changed ship's control to hand steering and turned the rudder hard to port while the Corvus J OOW turned the rudder hard to port and set the propeller to full astern. At 6.15pm Corvus J collided with Baltic Ace at position 51 deg 51,9' North 002 deg 53,9' East.

The angle of collision between the two ships was estimated 45-90 degrees while the Baltic Ace was heading at 330 deg and Corvus J at 225 deg. The collision caused damage to both ships.

#### Corvus J after the collision

The Corvus J suffered damages on the bulbous bow, a store on the port side above the bulb and in the bow structure above the main deck.

The steering system of the ship was tested and found working properly. The navigation equipment and the navigation lights were also found working properly. The ship was provided with authorizations to proceed to yard where repairs were carried out.

#### The Baltic Ace after the collision

Water entered inside the Baltic Ace and the ship started listing to starboard. The Master ordered the crew to abandon the ship at 6.17pm. At 6.21pm a DSC distress was transmitted and the Master contacted the Netherlands Coastguard by VHF.

The crew of the Corvus J noticed that the lights of the Baltic Ace disappeared initially, returned in a short time but went off again.

From the drafts of the two ships (mentioned above) and the depth of the damage the Corvus J caused herself by penetrating the Baltic Ace it can be drawn that the large cargo spaces were opened to the sea between deck No.2, 7.25 m from the ship's base line to deck No.6, 17,70 m above base line. The Corvus J gave full astern after the collision, however the length of the damage can be equal or even greater than the Corvus J breadth at the frame where the damage extended (14,50 m). The opening to the sea is roughly  $(17,70-7,25) \times 14,50 = 152 \text{ m}^2$ .

The ship sank 15 minutes later, at 6.30 pm when she disappeared from all radar screens and lies with the starboard side on the seabed.

#### The weather and environment

At the time of the accident Wind was 7 Beaufort NNW.

The Sea State was rough and visibility moderate (5-8 nautical miles).

Sleet (occasionally).

Darkness (6.15 pm in the sea area between The Netherlands and The United Kingdom).

#### Search and Rescue

A Search and Rescue operation was initiated by the authorities of The Netherlands. The naval ship "Friesland" of The Netherlands and merchant ships "Panagia", "Caroline Essberger", "Martha Lena" and "Zeldenrust" participated together with helicopters.

The Corvus J also participated in the search and rescue operation. The damages did not affect her ability to navigate and none of the crew was injured. The Master called the Coastguard of The Netherlands and remained in the area until 6.12.2014 2.45 am when the ship was released.

The crew saw lifejacket lights in the sea. They found an empty lifeboat and a second lifeboat (the port side lifeboat) with one seaman inside, whom they rescued and brought on their ship.

Of the crew :

- 13 were rescued
- 5 were recovered dead
- 6 remained missing.

Of the rescued crew, one was rescued from the sea, one from the port lifeboat, by the crew of the Corvus J and 11 in 4 liferafts.

#### Loading of the Baltic Ace

The Company employed 7 ratings for navigation and deck duties including the care for lashings and openings. The investigation could not ascertain the following :

- Time of commencement of loading the first and last vehicles and whether loading was with intervals or continuous
- Whether shore personnel assisted in the loading and lashing of the vehicles
- Whether at the time of the accident the ramp door was open, partly open or closed watertight
- Whether vehicles were already lashed before departure from the port
- Where the 6 missing crew is. Were they all seen before abandonment

#### Car Carrier ship design and construction

Current IMO regulations allow the present design of ships carrying vehicles, without any transverse bulkhead between the collision bulkhead and a bulkhead on the other end of the hull. The hull is divided in horizontal compartments, supposed to close watertight during voyage.

#### The VDR

The data of the VDR of the Corvus J were saved and the VDR of the Baltic Ace was recovered. In the process of investigation the management company called a radio technician to download the saved data and later they doubted whether the data should be given to third parties. The data were finally submitted, at a later stage.

#### Alcohol

None of the persons on either ship was found under the influence of alcohol



## **4. ANALYSIS**

### **Crew and Manning**

At the time of the accident the bridge of the Corvus J was manned by an OOW while the Baltic Ace was manned by an OOW and the Deck Cadet as look-out.

STCW Code Chapter VIII Section A-VIII / 2 Part 3, 15 reads: «The Officer may be the sole look-out in daylight (provided weather, visibility, traffic density ...». The performance of watch with an OOW without the assistance of a Rating A increases the potential for accidents.

The crew on the vessels is shown in Table 4.1:

| <b>Deck</b>   | Master         | Chief Officer   | OOW Deck   | Boatswain       | Deck Rating A   | Deck Rating B | Deck cadet  | Cook  |
|---------------|----------------|-----------------|------------|-----------------|-----------------|---------------|-------------|-------|
| CORVUS J      | 1              | 1               | 1          | 1               | 4               | ---           | ---         | 1     |
| BALTIC ACE    | 1              | 1               | 3          | 1               | 3               | 2             | 2           | 1     |
| <b>Engine</b> | Chief Engineer | Second Engineer | OOW Engine | Engine Rating A | Engine Rating B | Engine cadet  | Electrician | Other |
| CORVUS J      | 1              | 1               | ---        | 1               | ---             | ---           | ---         | ---   |
| BALTIC ACE    | 1              | 1               | 2          | 2               | 1               | 1             | 1           | 1     |

Table 4.1 – Crew composition

The conversations between the two ships (between OOW of the same nationality) were poor and didn't help to avoid collision in bridges where advanced equipment provides reliable information.

If STCW made the watch with one Officer and a Rating A obligatory during darkness and other periods of poor visibility, this would ascertain a higher level of safety.

### **Loading and lashing of the vehicles on the Baltic Sea**

It remains unknown whether the 1417 vehicles in the Baltic Ace were lashed and secured at the time of the collision. It also remains unknown whether any openings between compartments were closed watertight. The accident occurred 4 hours after departure from the port of loading. In case a number of cars were unlashed or poorly secured, these cars would move as a result of the collision and cause even more list to the ship.

### **Car Carrier ship design and construction**

The ship listed rapidly and sank in just 15 minutes after the collision. Almost all of the measures provided by IMO regulations (emergency lighting, availability of lifeboats etc) diminished in less than 15 minutes in a ship of almost 150 m with 24 persons on board.

The Corvus J, a ship of conventional construction penetrated 4 watertight (in roughly a vertical direction) compartments of a ship, allowed by Convention to be as long as

almost the length of the hull. If the Baltic Ace is imagined as a cargo ship with the same dimensions (roughly 150x25x12 m) but with conventional internal construction, single hull, consisting of 5 watertight cargo holds separated by 4 watertight bulkheads, the penetration caused by the collision would be limited within only one compartment (one cargo hold) with very low possibility to penetrate two. The ship would remain afloat and all 11 seamen would remain on their ship.

Such a ship is supposed to have a single hull construction and would survive. Carriers are of double-hull construction, yet the Corvus J penetrated the double side structure of the Baltic Ace.

The bow and bulb of the Corvus J penetrated the hull of the Baltic Ace by roughly 5,5m across her breadth. The breadth of the ship was 25 m and the penetration of 5,5m is almost equal to  $\frac{1}{2}$  the vessel's half-breadth. The penetration varied between 5 and 8 times the breadth of the wing tanks which were built and supposed to absorb impacts and keep the cargo holds watertight.

### The VDR

An issue of the ownership of the data was raised.

According to IMO Resolution A.849 article 5.5 the State conducting the investigation should arrange for the read-out of the VDR. The IMO Casualty Investigation Code chapter 22.3 provides that VDR should be made available for downloading by the investigator or an appointed representative (this is a chapter of Part III Recommended practices – not mandatory).

According to Directive 2009/18/EC (investigation of marine accidents) article 8.4(d) the investigative bodies should have free access, copy and use of the VDR data.

The above provisions do not make it clear who is the owner of the data and do not make the data available to other interested parts and States. It should contribute to the distribution of information if it was made clear that although the Owner of the ship owns the recorder, the owner of the data is the Administration and the Administration reserves the right to make it available to all interested parties (other Administrations when more than one flag is engaged, coastal states, states of the nationality of the crew, relatives of the crew).

## **5.CONCLUSIONS**

### Manning and IMO

Making the manning of the navigation bridge with an Officer and a qualified Rating obligatory during darkness will contribute to a higher level of safety in navigation.

### Car Carrier ship design and construction and IMO

Measures to limit the vulnerability of the car carriers are necessary.

### VDR and IMO

The availability if VDR data is not ascertained to all interested parties.

### **Probable cause**

It is determined that the most probable cause of the accident is the failure of the Officers on Watch to understand each other's intentions. The provision of enormous amount of available information to the Officers and the poor manning of vessels allowed today, contributed the accident. The heavy loss of human life was unavoidable once the penetrated ship was not designed to survive in the specific scenario.

## **6.SAFETY RECOMMENDATIONS**

It is recommended that :

Cyprus Department of Merchant Shipping and The Bahamas Maritime Authority raise the following issues to IMO :

1. To raise the issue of the one-man bridge to IMO and suggest the manning of the bridge by at least one Officer and a Rating A during darkness.
2. To raise the issue of the vulnerability of the car-carriers to the IMO.
3. To raise the issue of the availability of contents of the Voyage Data Recorders to all interested parties and states.

## **7.APPENDICES**

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