



**Report of investigation  
into the fatal accident of the bosun  
on board Hong Kong registered  
bulk carrier “*BBG Bright*”  
at Praia Mole anchorage, Brazil  
on 1 October 2017**



**The Hong Kong Special Administrative Region  
Marine Department  
Marine Accident Investigation Section**

## **Purpose of Investigation**

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department is to determine the circumstances and the causes of the incident with the aim of enhancing the safety of life at sea and avoiding similar incidents in future.

It is not intended to apportion blame or liability towards any particular organization or individual except so far as necessary to achieve the said purpose.

The MAISSPB has no involvement in any prosecution or disciplinary action that may be taken by the Marine Department resulting from this incident.

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## Summary

On 1 October 2017 between 1945 hours and 2000 hours, a fatal accident happened on board the Hong Kong registered bulk carrier *BBG Bright (the vessel)* which anchored at the No. 3 anchorage of Praia Mole, Brazil. While the bosun was walking up the stairway between A deck and B deck with both his hands holding a set of music audio system, he fell down from the stairway and hit his head seriously to his death. At the material time, the weather was bad with north-east wind force 6 to 7 and wave height of 3 to 3.5 metres. *The vessel* rolled moderately with sudden and heavy rolling intermittently.

The investigation identified that:

- (a) the bosun might lose his balance and fell down from the stairway due to a sudden and heavy rolling of *the vessel* and/or under the effect of alcohol; and
- (b) the bosun was lack of safety awareness. He used both hands to hold the three-piece music audio system and did not leave a hand free to hold the handrail when walking up the stairway.

## 1. Description of the vessel

Ship name	:	<i>BBG Bright</i> (Figure 1)
Flag	:	Hong Kong, China
Port of registry	:	Hong Kong
IMO number	:	9598177
Type	:	Bulk Carrier
Year built, shipyard	:	2012, Qingdao Beihai Shipbuilding Heavy Industry Co., Ltd., China
Gross tonnage	:	44,373
Net tonnage	:	27,546
Summer deadweight	:	82,042.6 metric tonnes
Length overall	:	229.00 metres
Breadth	:	32.26 metres
Engine power, type	:	9760 kW, MAN B&W 5S60MC-C8
Classification society	:	Lloyd's Register
Registered owner	:	Bright BBG Shipping Limited
Management company	:	An Shun International Ship Management Limited



Figure 1     *the vessel*

## **2. Sources of evidence**

- 2.1 The statements of the master and the able bodied seamen of *the vessel*.
- 2.2 The management company of *the vessel*.
- 2.3 The P&I Club survey report.
- 2.4 The Cadaveric Examination Report.
- 2.5 The Investigation Report prepared by the Brazilian Navy.

### 3. Outline of events

(All times are local time, UTC - 3 hours.)

- 3.1 On 19 September 2017, *the vessel* departed Hay Point, Australia and arrived at the port of Praia Mole, Brazil at 0506 hours on 25 September 2017. *The vessel* anchored at the No. 3 anchorage of Praia Mole awaiting to berth on 17 October 2017.
- 3.2 At 1700 hours on 1 October 2017, the crew had their dinner in the mess room on A Deck.
- 3.3 At 1800 hours, most of the crew finished their dinner and returned to their cabins. The bosun and an able bodied seaman (AB1) stayed behind and listened to music from the music audio system owned by the bosun.
- 3.4 At about 1945 hours, AB1 left the mess room for duty watch. Before he left, he saw the bosun packing up the music audio system which consisted of two speakers and one tuner. He then asked the bosun if his assistance was required. The bosun responded that he could carry the music audio system back to his cabin by himself and AB1 left the mess room.
- 3.5 At 2000 hours, another able bodied seaman (AB2) left his cabin on C Deck to go down to the mess room on A Deck. On B Deck, AB2 saw the bosun lying with his head in a pool of blood on A Deck (Figure 2). He went down the stairway and patted on the bosun's shoulder but the bosun did not show any response.
- 3.6 AB2 then went to a third able bodied seaman's (AB3) cabin on B Deck and requested him to attend to the accident scene. AB2 further reported the accident to the master and the chief officer who were in the wheelhouse and chief officer's cabin respectively. The chief officer and AB2 then went to the accident scene.
- 3.7 After receiving the report of the accident, the master instructed the crew to give first aid to the bosun. He then informed the local agent to arrange emergency medical evacuation of the bosun. The P&I (Protection and Indemnity) Club and the management company were also notified.
- 3.8 At 2245 hours, a rescue boat arrived by the side of *the vessel*. At 2310 hours, the bosun was transferred to the rescue boat. The second officer accompanied him and the rescue boat left at 2320 hours.

3.9 At 0112 hours on 2 October 2017, the bosun received emergency treatment in a local hospital and was declared dead at 0122 hours.



Figure 2 The bosun lying on A deck with his head in a pool of blood



#### **4. Analysis**

##### **Certification and experience**

- 4.1 *The vessel* was manned by a total of 23 crew including the master. The statutory trading certificates of *the vessel* were valid and in order.
- 4.2 The master, chief officer and second officer held appropriate licences of the Deck Officers issued by the Marine Department, Hong Kong, China. All of them had served in their capacities for at least two years and for the company for more than 15 months.
- 4.3 The bosun had a total sea going experience in the capacity of bosun for more than 10 years. He served as a bosun on board *the vessel* for about one year and joined the management company in 2015.
- 4.4 There were no abnormalities noted with regard to certification and experience of crew concerned.

##### **Working hours and alcohol abuse**

- 4.5 According to the report issued by the Department of Public Security and Social Defense, Brazil, the bosun's blood alcohol concentration was 22 decigrams per litre (2200 milligrams per litre) which was about 0.22%. The maximum allowable blood alcohol concentration as stated in the company policy was 0.04% applicable to all crew at any time onboard. It is apparent that the bosun had taken alcoholic drink in the excess of the allowable limit at the dinner time and it might be one of the contributory factors to the accident.
- 4.6 There was no evidence showing that the bosun had suffered from fatigue at work or drug abuse.

##### **Weather conditions**

- 4.7 The weather was bad with northeasterly wind force 6 to 7 with gusts. The wave height was about 3 to 3.5 metres. Under the adverse weather, *the vessel* rolled moderately with sudden and heavy rolling intermittently. The rolling of *the vessel* might cause the bosun to lose his balance while he was walking up the stairway with both of his hands holding the music audio system. It is considered that the weather could be another contributory factor to this accident.

### Cause of death

- 4.8 According to the cadaveric examination report issued by the Vitoria Coroner's Department, Brazil, the cause of death of the bosun was cranio-encephalic trauma. Occipital blunt lesion cut to the right skull was found by an external examination; haemorrhage and cerebral edema were found by an internal examination of the corpse of the bosun. It was reasonable to deduce from the above results of the cadaveric examination report that the bosun's injury was made by the robust edge of the speaker of the music audio system.

### Stairway construction

- 4.9 The configuration of the stairways connecting each deck was the same and met the requirements of the *Fire Safety Systems Code* (FSS Code) under the *International Convention for the Safety of Life at Sea*. The inclination angle of the stairway was approximately 47° which is permitted by the FSS Code of not greater than 50°. The dimensions of each step of the stairway was 23 cm (height) and 23 cm (depth). Anti-slippery straps were adhered on each step of the stairway. Railing and handrail were installed on both sides of the stairway (Figure 3).



Figure 3 The stairway

### The music audio system

- 4.10 The bosun's music audio system consisted of one tuner (Figure 4) and two speakers (Figure 5). Each speaker and the tuner weighted 1.3 kg and 3.7 kg respectively. The dimensions of the tuner were 25.5 cm (width) x 17 cm (height) x 26.6 cm (depth) and that of the speaker were 21 cm (width) x 11 cm (height) x 11 cm (depth).
- 4.11 It is apparent that the bosun needed both hands to carry the three-piece audio system with a total weight of 6.3 kg. He put himself in difficulty and at risk when walking up the stairway with the bulky music audio system when *the vessel* was subject to sudden and heavy rolling intermittently at any time.

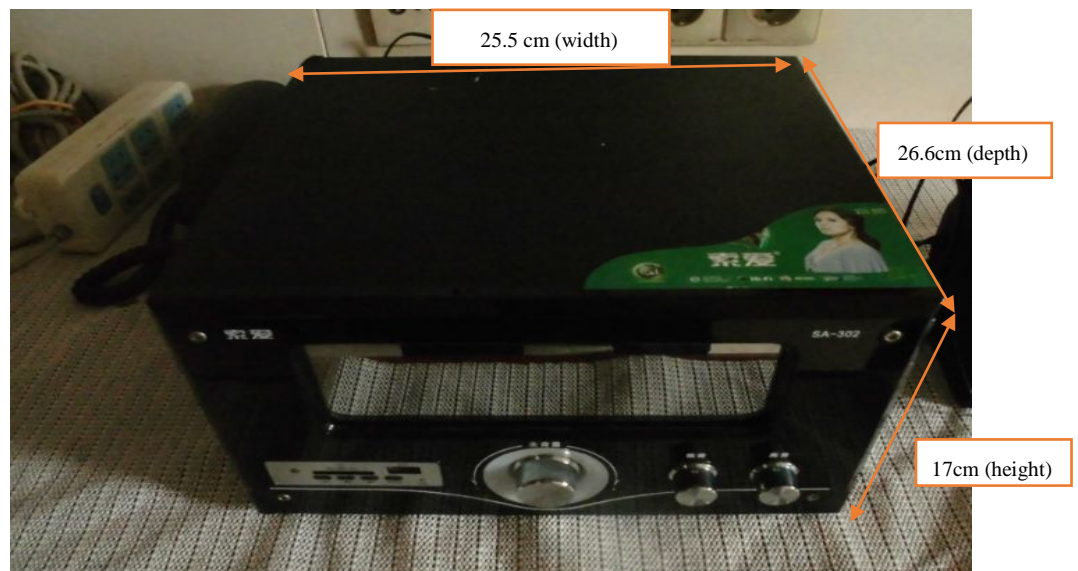


Figure 4 Tuner of the music audio system



Figure 5 Two speakers of the music audio system

### **Simulation of walking up the stairway with the music audio system**

- 4.12 A simulation was requested by the port State control (PSC) officers of Brazil after the accident (Figure 6). During the simulation, the chief officer carried the three-piece music audio system and walked up the stairway. While walking up the stairway, the Chief Officer was asked to come back. When he turned his body, he lost his balance. This test proved that always holding the handrails while walking up or down the stairway was crucial from safety point of view.



Figure 6 Simulation carried out during the PSC inspection

### **Possible causes of the accident**

- 4.13 Stairways on board ocean going ships are usually built at a steeper angle than those at ashore. As such, any person walking up or down the stairways should always use handrails to balance the body's movement.
- 4.14 At the time of the accident, *the vessel* was subject to moderate rolling with sudden and heavy rolling intermittently due to bad weather. With both his hands holding the music audio system, the bosun might have lost his balance due to a sudden and heavy rolling of *the vessel* and/or under the effect of alcohol, resulting in his fall from the stairway.

- 4.15 As shown in Figure 7, the tuner was at the galley door and a speaker (Speaker A) was in front of the bosun's body. Another speaker (Speaker B) was in front of bosun's face with a pool of blood around his head and the speaker. It could be deduced that when the bosun fell down, his head hit violently on the edge of Speaker B resulting in a head trauma with copious bleeding.

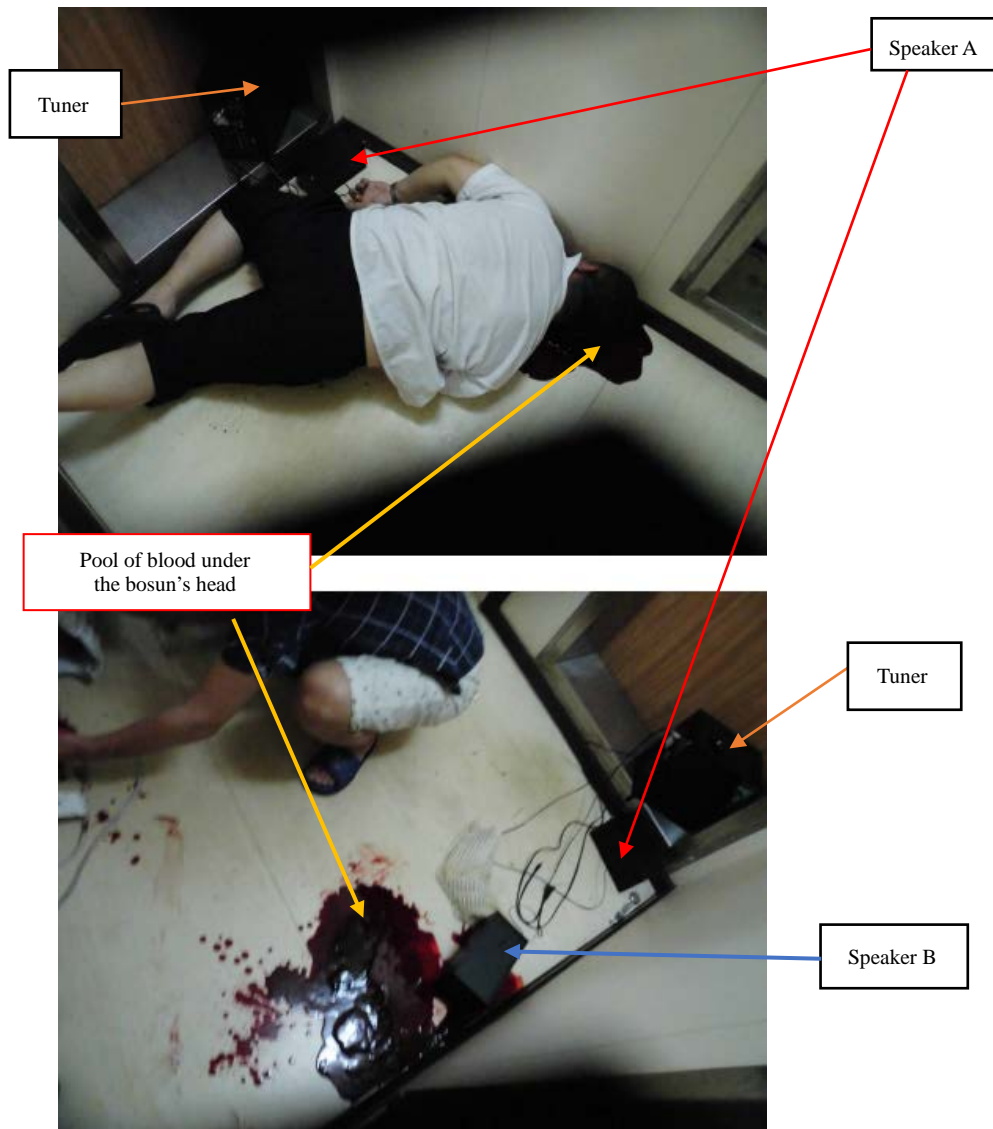


Figure 7 Accident scene

## **5. Conclusions**

- 5.1 On 1 October 2017 between 1945 hours to 2000 hours, a fatal accident happened on board *the vessel* at the No. 3 Anchorage of Praia Mole, Brazil.
- 5.2 At 2000 hours, the bosun was found lying unconsciously on A deck with his head in a pool of blood. He was taken to a local hospital for medical treatment by a rescue boat at about 2320 hours and was declared dead at 0122 hours on 2 October 2017.
- 5.3 The investigation had identified the following contributory factors in this accidents:
- (a) the bosun might have lost his balance and fell down from the stairway due to a sudden and heavy rolling of *the vessel* and/or under the effect of alcohol; and
  - (b) the bosun was lack of safety awareness. He used both hands to hold the three-piece music audio system and did not leave a hand free to hold the handrail when walking up the stairway.

## **6. Recommendations**

- 6.1 The management company of *the vessel* is recommended to issue notice/circular to draw the attention of their masters, officers and crew to the findings of the investigation and to remind them that:
- (a) they must take care of themselves when moving around the ship at all times;
  - (b) care should always be taken when walking up and down of stairways by holding handrail throughout the walk; and
  - (c) the company's alcohol policy should be strictly followed.
- 6.2 A Hong Kong Merchant Shipping Information Note should be issued to promulgate the lessons learnt from the accident.

**7. Submission**

- 7.1 The draft investigation report, in its entirety, had been sent to the management company and the master of *the vessel* and the Brazilian Navy for their comments.
- 7.2 At the end of the consultation period, the management company and the master of *the vessel* did not have comments on the contents of the draft report. The Brazilian Navy agreed to the text of the report.