



Report of investigation into the
fatal accident of an Able-Bodied
Seaman on board Hong Kong
registered bulk carrier *Tuo Fu 8*
on 10 June 2014



Purpose of Investigation

This incident is investigated in accordance with the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (the Casualty Investigation Code) adopted by IMO Resolution MSC 255(84).

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department, in pursuant to the Merchant Shipping Ordinance Cap. 281, the Merchant Shipping (Safety) Ordinance (Cap. 369), the Shipping and Port Control Ordinance (Cap. 313), or the Merchant Shipping (Local Vessels) Ordinance (Cap. 548), as appropriate, is to determine the circumstances and the causes of the incident with the aim of improving the safety of life at sea and avoiding similar incident in future.

The conclusions drawn in this report aim to identify the different factors contributing to the incident. They are 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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1 Summary

- 1.1 At about 1030 (GMT + 5) on 10 June 2014, while the Hong Kong registered bulk carrier vessel *Tuo Fu 8* was in the approximate position of 12°40S 67°42E in the Indian Ocean, en-route to Brazil, an Able-Bodied seaman (the “AB”) fell to his death during cargo hold cleansing work.
- 1.2 The AB was assigned, as a member of the team, to cleanse the upper part of the port side wall in No.1 cargo hold. When he was working aloft, he wore a safety belt anchored to the steel vertical ladder fitted on the side wall of the cargo hold. After having finished the cleansing work assigned to him, he climbed down the steel vertical ladder and stayed at the top of the hopper plate. He needed to wait for the other crew members to bring a portable aluminum ladder for him to climb down to the bottom of the cargo hold.
- 1.3 While he was waiting, the AB slipped on the hopper plate towards the bottom of the cargo hold and further slid about three meters on the surface of the bottom of the cargo hold before stopping. His safety helmet had flown off and his head knocked against the bottom of the cargo hold when he was falling down. At that moment, he was unconscious but could still breathe.
- 1.4 He was sent to the ship hospital on a stretcher. Upon the advice by a doctor at shore, first aid treatment was applied to the AB. Later that day and before the vessel could reach the nearest port, the AB was declared dead on board.
- 1.5 At the time of the accident, the weather was cloudy with southeasterly breeze. The sea condition was calm and the visibility was good. The vessel was sailing without severe rolling and pitching.
- 1.6 Investigation into the accident revealed the main contributing factors to the accident were:
 - a) The AB detached and did not anchor his safety belt to any strong point (the vertical ladder) when he was staying at the top of the hopper plate, which was about 4 meters above the bottom of the cargo;
 - b) The AB lost his balance and slipped while staying at the top of the hopper plate; the hopper plate was an acutely inclining surface and probably was wetted by washing water during cargo hold cleansing; and
 - c) The AB’s safety helmet had flown off and his head knocked against the bottom of the cargo hold when he was falling down.
 - d) No senior officer to supervise the operation.

2. Description of the Vessel

2.1 Particulars of *Tuo Fu 8*

Port of Registry	:	Hong Kong
IMO No.	:	9649249
Official No.	:	HK- 3735
Call Sign	:	VRLP9
Classification Society	:	Registro Italiano Navale
Type of Ship	:	Bulk Carrier
Year of Built	:	2013
Ship Manager	:	Tuofu Shipping Management Ltd.
Length	:	225.5 metres
Breadth	:	32.26 metres
Depth	:	20.05 metres
Gross Tonnage	:	44,315
Net Tonnage	:	27,890
Dead Weight	:	81,720.5 tonnes
Engine Power	:	9,800 kW
No. of Crew	:	25



Fig. 1 *Tuo Fu 8*

Tuo Fu 8 is a seven-hold bulk carrier built by Taizhou Catic Shipbuilding Heavy Ind. Ltd, Jiangsu, China in 2011. She was powered by a five-cylinder marine diesel engine, Qingdao Qiyao Wartsila (China) 5RT-flex58T, capable of developing engine power of 9,800 kW. The vessel was owned by Yifu Shipping Ltd, China and managed by Tuofu Shipping Management Ltd.

3 Sources of Evidence

3.1 The statements from master and crew of the *Vessel*

3.2 Report of investigation conducted by the management company of *Tou Fu 8*.

4 Outline of Events

(All times were local time GMT + 5 unless otherwise stated)

- 4.1 After having finished discharging coal cargo in India on 31 May 2014, the Hong Kong registered bulk carrier vessel *Tuo Fu 8* departed from the port under ballast condition and sailed to Brazil for loading grain cargo. All cargo holds were required to be cleansed during the voyage to Brazil. On 1 June 2014, a safety briefing was held to remind crewmembers engaging in the cargo holds cleansing of the relevant safety issues. Risk assessment was conducted and the report was submitted to the ship management company.
- 4.2 From 2 June 2014 to 9 June 2014, coal residue was removed from all cargo holds and then the cargo holds were washed with water. However, the level of cleanliness of the cargo holds, particularly in the upper part of side walls, was still not satisfactory. They needed to be further mopped with rags.
- 4.3 On 10 June 2014, when the vessel was in the Indian Ocean in the approximate position 12°40S 67°42E, the weather was cloudy with southeasterly breeze. The sea condition was calm and the visibility was good. As the weather condition on that day was similar to that on 1 June 2014, the Master decided that the risk assessment report made on 1 June 2014 remained valid.
- 4.4 At 0745 on 10 June 2014, a pre-work meeting was carried out. It was chaired by the chief officer and attended by the Bosun, three Able-Bodied seamen, one ordinary seaman (OS) and one deck cadet (CDT). The safety procedure for working aloft was discussed. The chief officer assigned the Bosun as the person in charge of the work and was responsible to ensure good conditions of all required tools and personal safety protection equipment.
- 4.5 At about 0800, they prepared the required tools and personal safety protection equipment and started the work in No.1 cargo hold at about 0830. The port side wall of that cargo hold was to be cleaned first. The Bosun and the three AB were each assigned to clean a section of the side wall.
- 4.6 One by one, they climbed a portable aluminum ladder to reach the top of the hopper plate, thence they continue to climb the vertical ladders (Figure 2 and 3) to reach the upper part of the side wall. There were four such vertical ladders on the side wall. The OS and the CDT were at the bottom of the cargo hold responsible for shifting and securing the portable aluminum ladder for the Bosun and the Able-Bodied seamen.

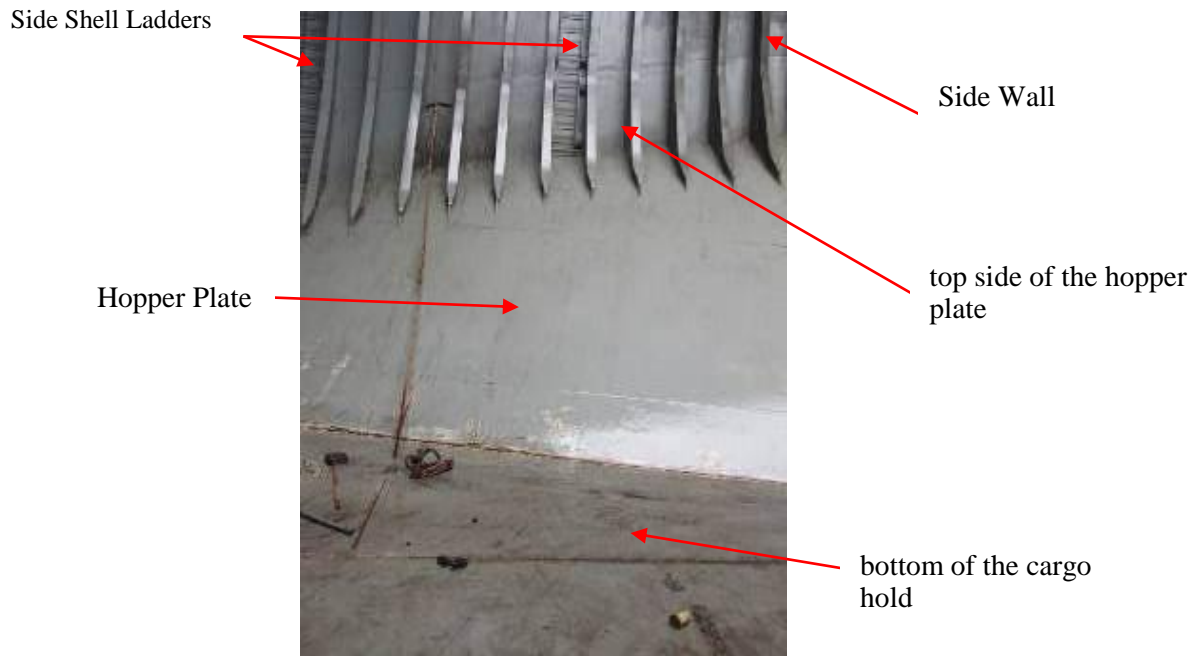


Fig.2 No.1 Cargo Hold, port side

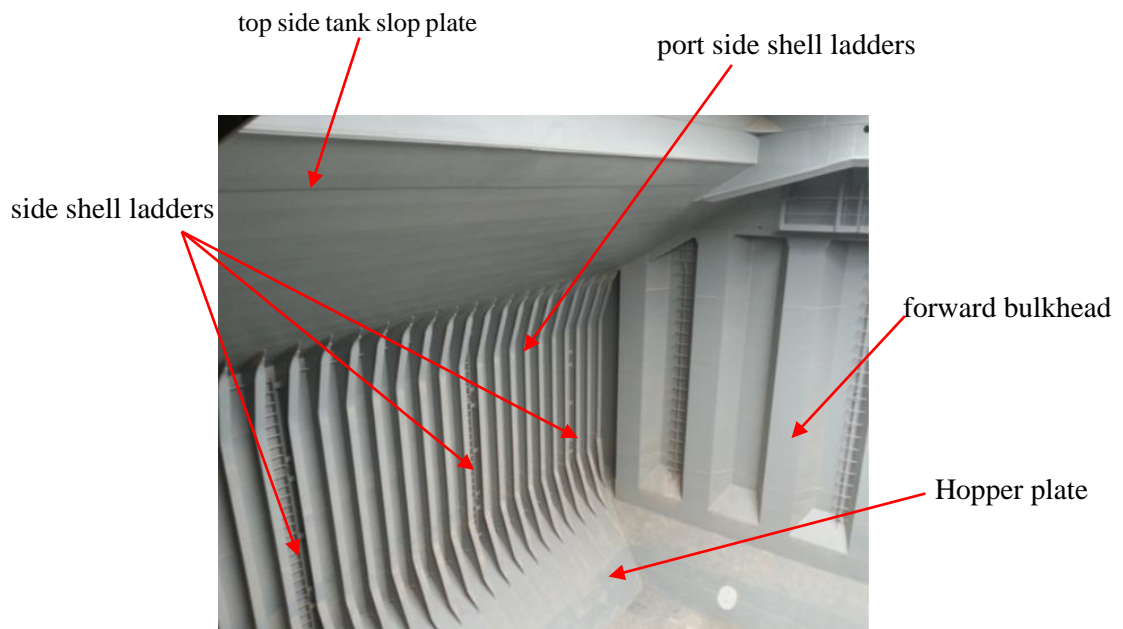


Fig. 3 No.1 cargo hold port side

4.7 Each crewmember moved up and down along the vertical ladder for cleansing the side wall at different heights. When they stopped at a position for cleansing, each of them would secure the bosun chair with shackle link and the safety belt (Fig. 4) to the vertical ladder. During the cleanse, they sat down on the bosun chairs and used the extension rods fitted with rags to mop the wall. If the dirt on the wall could not be removed by mopping, they would request the OS and CDT to wet the surface with a high pressure water hose.

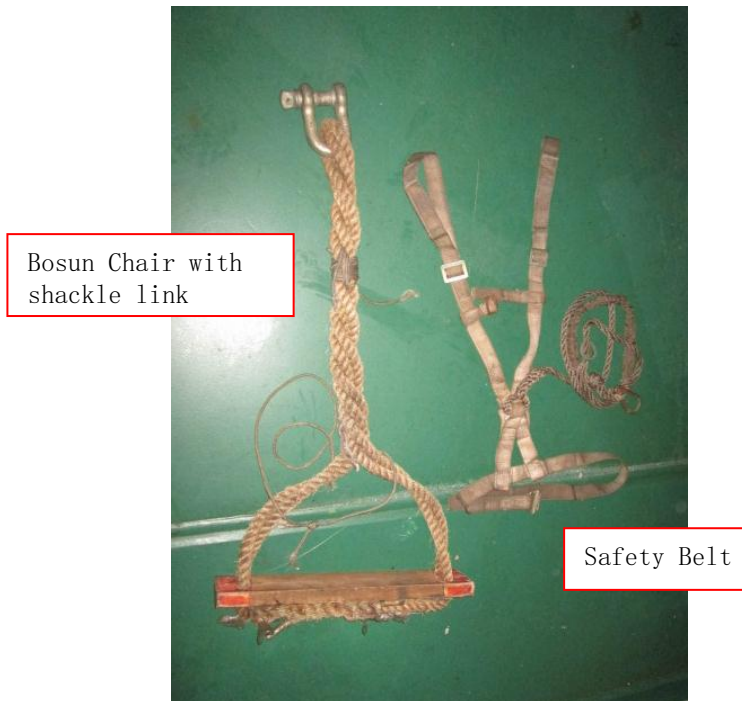


Fig. 4 Bosun chair and safety belt

4.8 At about 1030, the AB (the deceased) had finished his work and came down from the top of the hopper plate waiting for the OS and the CDT to take the portable aluminum ladder for him. At that position, the AB was about 4 meters from the bottom of the cargo hold.

4.9 Suddenly, without any witness, the AB slipped on the hopper plate towards the bottom of the cargo hold and further slid about three meters on the bottom of the cargo hold before stopping. His safety helmet had flown off and his head knocked against the bottom of the cargo hold when he was falling down. At that moment, he was unconscious but could still breathe.

4.10 The AB was sent to the ship hospital on a stretcher. On the advice by a doctor at shore, first aid treatment was applied to the AB. Later that day and before the vessel could reach the nearest port, the AB was declared dead on board.

5. Analysis of Evidence

Manning

- 5.1 The vessel was manned by a total of 25 Chinese crewmembers.
- 5.2 The Master had served as a shipmaster for about 14 years. He possessed a Certificate of Competency issued by the People's Republic of China as a master on ships of 3000 GRT or more and a Class I License issued by the Hong Kong Marine Department valid until 21 June 2016. He signed on Tuo Fu 8 as a master on 19 March 2014.
- 5.3 The Chief Officer had served as a chief officer of ships for about 5 years. He possessed a Class 2 Certificate of Competency issued by the People's Republic of China on ships of 3000 GRT or more and a Class 2 License issued by the Hong Kong Marine Department valid until 28 September 2014. He signed on Tuo Fu 8 as a chief officer on 25 August 2013.
- 5.4 The Bosun held a Certificate of Competency at navigation support level issued by the People's Republic of China on 30 August 2010 valid until 7 June 2016. He had about 11 years of seagoing experience and worked for about 8 years in the capacity of a Bosun. He joined Tuo Fu 8 on 14 August 2013 as a Bosun.
- 5.5 The deceased AB joined Tuo Fu 8 on 19 March 2014 as an Able-Bodied seaman. He held a Certificate of Competency at navigation support level issued by the People's Republic of China on 7 June 2011, valid until 7 June 2016. He had about 7 years of working experience as an Able-Bodied seaman.

Fatigue, alcohol and drugs

- 5.6 There was no evidence to indicate that the deceased AB suffered from fatigue at work.
- 5.7 There was no evidence to indicate that the deceased AB was influenced by alcohol and drugs.

Weather and Sea Condition

- 5.8 At the time of the accident, the weather was cloudy with southeasterly breeze. The sea condition was calm and the visibility was good. The vessel was sailing without severe rolling and pitching.

Bosun chair and personal safety protection equipment

- 5.9 After the accident, it was found that the bosun chair and safety belt used by the

deceased AB were intact.

- 5.10 The deceased AB used safety helmet during the work but his safety helmet flew off when he was falling down from the top of the hopper plate.

The probable causes of the accident

- 5.11 The deceased AB wore the safety belt anchored to the vertical ladder when he was working aloft. However, after he had finished his work, came down and stayed at the top of the hopper plate while waiting for the OS and CDT, his safety belt was detached and was not anchored to the vertical ladder.
- 5.12 The top of the hopper plate joining the side wall of the cargo hold was an acutely inclining surface and probably was wetted by washing water during cargo hold cleansing. It was not safe for crew to stay at that position without using a safety belt.
- 5.13 It was highly probable that the deceased AB lost his balance and slopped while staying at the top of the hopper plate, which was about 4 meters above the bottom of the cargo hold, without using a safety belt. His safety helmet had flown off and his head knocked against the bottom of the cargo hold when he was falling down.
- 5.14 The Bosun was engaged in the cleansing of the side wall, however, no other senior officer was there to supervise the operation.

6. Conclusions

- 6.1 At about 1030 (GMT + 5) on 10 June 2014, while the Hong Kong registered bulk carrier vessel *Tuo Fu 8* was in the approximate position of 12°40S 67°42E in the Indian Ocean, en-route to Brazil, an Able-Bodied seaman (the “AB”) fell to his death during cargo hold cleansing work.
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 - d) No senior officer to supervise the operation.

7 Recommendations

- 7.1 A copy of the investigation report should be provided to the following parties informing them the findings of the accident investigation:
- a) the ship management company and the master of the *Tuo Fu 8*; and
 - b) the Shipping Division of the Marine Department.
- 7.2 The management company should issue a safety circular informing all masters, officers and crew of the lesson learnt from the accident and instruct them to use safety belts properly when working and/or staying at height.
- 7.3 A Merchant Shipping Information Note (MSIN) should be issued to promulgate the lessons learnt from this accident.

8 Submission

- 8.1 In the event that the conduct of any person or organization is commented in an accident investigation report, it is the policy of the Hong Kong Marine Department that a copy of the draft report be given to that person or organization so that they have the opportunity to rebut the criticism or offer evidence not previously available to the investigating officer.
- 8.2 The draft report was sent to the ship management company of the vessel Tuofu Shipping Management Ltd” and to the Master of *Tuo Fu 8* for their comments. No comment was received at the end of the consultation.