

附件 3



The Safety Investigation Report into the Crew Fatality  
onboard Dry Cargo Ship  
***M/V EN KAI***  
during Berthing Operation in Japan  
on 11 January, 2011

Maritime Safety Administration, P.R.China  
[www.msa.gov.cn](http://www.msa.gov.cn)  
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# 1. Summary of the Accident

## 1.1 Summary of the Accident

At about 1005 hrs on 11 January 2011 (all times in this report refer to the local time) when the China registered dry cargo ship M/V EN KAI owned by Fujian Anda Shipping Co., Ltd. (the Company) was berthing at the Funabashi Port of Japan with cold rolled steels in quantity of 3,271MT loaded on board from Shanghai to Japan, the Bosun was hit and hurt by the bouncing head spring on the bow. The Bosun was subsequently sent to hospital but deceased despite of the emergent treatment.

## 1.2 Investigation

M/V EN KAI arrived at Shanghai Port on 24 January 2011. Two investigators were dispatched by China Maritime Safety Administration (China MSA) to proceed to Shanghai for an investigation and inquiry into the situations of the accident. The following documents were reserved: 8 sets of Inquiry Notes, 16 copies of Ship Certificates, one Crewmembers List, a piece of Accident Report on Bosun's Death on board M/V EN KAI, 9 copies of Crewmembers Certificates, 7 copies of Company SMS documents, 1 copy of Emergency Communication Records, 1 copy of Record Book of Engine Telegraph, 2 sets of Crewmembers Performance Assessment Form, 1 copy of Windlass Operation Manual, Mooring Winch Operation Manual, Winch Specification and Unmooring Operation Requirements, 2 copies of Master and C/O Pre-post Training Records, and one Charter Party.

# 2. Factual information

## 2.1 Ship Particulars

Name of Vessel	: EN KAI	Flag	: China
Port of Registry	: Quanzhou	Call Sign	: BVBH5
IMO No.	: 9396036	Type of Vessel	: Dry Cargo Ship
Hull Material	: Steel		
L.O.A.	: 89 M	L.P.P.	: 82.8 M
Moulded Breadth	: 15 M	Moulded Depth	: 6.7 M
Gross Tonnage	: 2,653	Net Tonnage	: 1,426

Light Displacement : 1,468  
DWT/ Summer Draft : 3,885 MT / 5.25 M  
Type and No. of Main Engine : 6DKM-26 Power : 1618 KW x 1  
Type and No. of Generator : Cummins Power : 100 KW x 3  
Vessel Owners/Operators/Managers: Fujian Anda Shipping Co., Ltd.  
Address of Vessel Owners/Operators/Managers: Antougangwan Road, Dongyuan Town,  
Hui'an County, Fujian Province, China

## 2.2 Crewmembers Information

As investigated, 16 crewmembers were manned onboard M/V EN KAI during the voyage which is in conformity with the requirement of the minimum safety manning of 12 crewmembers.

Master: 55 years old, holding the Master Certificate for the Class Ships of/above 3000 GRT issued by MSA Liaoning on 6 December 2006

C/O: 58 year old, holding the Chief Officer Certificate for Ships of 500-3000 GRT restricted to near-sea, coastal and offshore navigation zones issued by MSA Guangxi on 27 November 2007

Bosun: 39 years old, holding Certificate of Duty A.B. for Ships of/above 500 GRT issued by MSA Fujian on 23 March 2006

## 2.3 Construction and Survey information of M/V EN KAI

M/V EN KAI was built by Fujian Southeast Shipyard with keel laid on 30 December 2004 and delivery on 15 September 2006.

After China Classification Society survey on 8 November 2006, M/V EN KAI obtained the Classification Certificate with date of expiry on 14 September 2011.

## 2.4 PSC and FSC Inspection

2.4.1 On 22 June 2010, M/V EN KAI was found with 8 defects by the PSC inspection in Hong Kong, three of which were required to be rectified before sailing and the rest five defects should be rectified within 14 days.

2.4.2 On 27 June 2010, M/V EN KAI was found with 10 deficiencies by the FSC inspection in Zhangjiagang Port, eight of which were required to be rectified before

departure and the remaining two defects should be rectified within 14 days. Among the 10 deficiencies, one deficiency was found as “some crewmembers were not familiar with the duty of emergency response”.

2.4.3 On 30 August 2010, M/V EN KAI was found with 5 deficiencies by the FSC inspection in the Quanzhou Port, China, all of which should be rectified before departure.

2.4.4 On 21 October 2011, M/V EN KAI was found with no deficiency by the PSC inspection in the Port of Moji, Japan.

2.4.5 On 26 October 2011, M/V EN KAI was found with 2 deficiencies by the World Expo special safety inspection at Shanghai Port, both of which were required to be rectified before sailing.

## 2.5 Shipping Company

### 2.5.1 Company Information

Fujian Anda Shipping Co., Ltd (hereinafter referred to as “the Company”) was established in November 1992 as a liability limited company, mainly engaging in international (including HK and Macau) and domestic cargo transportation. The Company was issued the Document of Compliance after pass the initial audit by China Maritime Safety Administration in June 2002 and now manages six vessels in different types.

### 2.5.2 Emergency Response of the Company

At 1016 hrs of 11 January 2011, the duty office of the Shipping Department of Fujian Anda Shipping Co., Ltd. was reported by the Master of M/V EN KAI via telephone that the Bosun was hit by the bouncing head spring onto deck into coma.

At 1018 hrs, the manager of Shipping Department instructed the Master to keep smooth communications with the Company and promptly report the latest updated information of rescue and treatment of the injured. At the same time, the Manager of Shipping Department immediately reported the accident to the general manager and Designated Personnel, initiated the emergency response procedures, and immediately called in the emergency response group members.

At 1019 hrs, the emergency response group members were in position and established a team of emergency response. The team commanded to immediately contact the subagent in Japan for gathering the development of medical rescue and asked the agent in Japan to assign representative to proceed to the Port of Funabashi in a task of assisting with the Bosun’s treatment.

At 1022 hrs, the Master of M/V EN KAI reported to the Company that the injured crewmember regained consciousness, and the rescue team from Funabashi Port Medical Center was expected to arrive at the terminal at about 1025 hrs.

At 1024 hrs, the response team instructed the Master to nurse the injured carefully, arrange crewmembers to specially look after him, and save the life regardless of cost; required the Master to report the course of accident to the Company and prepared for the accident investigation. At the same time, the team instructed the agent in Japan to make all efforts to engage in the rescue and save crewmember's life.

At 1025 hrs, the team allocated duties as follows: to inquire with the medical professionals for the rescue of the injured crewmember and prepare to report the accident to the administrative authority as per the accident reporting procedures; to report the accident to the P&I insurers and ask the insurers to offer necessary assistance; to notify the family members of the injured crewmember of the basic accident information; and to keep closely communication with the Master and the agent in Japan and collect the timely rescue information of the injured.

At 1218 hrs, having learnt the crewmember's death, the Headquarter immediately assigned the following work to the relevant departments: Shipping Department to contact the agent in Japan to deal with the subsequent arrangement of the death incident such as body preservation; Personnel Department to inform the family members of the crewmember and deal with the aftermath of the death; Shipping Department to advise the P&I insurers to prepare for relevant insurance claim issues; and to set up the Accident Investigation Team to carry out the investigation and the reporting as per relevant regulations.

### **3. Rescue**

At about 1005 hrs on 11 January 2011, the Bosun was hit down by the head spring. The Master immediately contacted the agent at Funabashi Port of Japan to arrange for medical rescue.

At 1015 hrs, all fastened.

At 1026 hrs, the ambulance arrived alongside the vessel and rescue was carried out.

At about 1050 hrs, the rescue team took the injured to the hospital.

At about 1115 hrs, the rescue team arrived at Funabashi Port Medical Center.

At about 1120, the subagent in Japan informed the Shipping Company that the Bosun was seriously injured and Funabashi Port Medical Center was about to carry out surgery operation.

At 1210 hrs, the Bosun was declared deceased despite the surgery.

## **4. Time, Place and Weather Conditions of the Accident**

**4.1 Time of Accident Occurrence:** About 1005 hrs on 11 January 2011

4.1.1 According to the record in the Deck Log Book and the Inquiry Notes of the Crewmembers, the accident occurred at about 1005 hrs (JST).

**4.2 Place of Accident:** Central Terminal, Funabashi-shi, Chiba-ken, Japan

**4.3 Weather Conditions:** Northerly wind in force of 3 bft

According to the Japan Meteorological Agency weather forecast provided by JTSA, it was northerly wind in 3 bft at Funabashi Port on the day of accident occurrence.

## **5. Accident Loss**

The accident caused the death of the Bosun of M/V EN KAI.

## **6. Narrative of Accident**

At 1600 hrs of 6 January 2011, M/V EN KAI sailed to Funabashi Port, Japan with 3271 tons of rolled steels loaded in Shanghai Baosteel .

At 0805 hrs of 11 January 2011, the vessel arrived at the anchorage of Funabashi Port, Japan, and dropped 4 shackles of the starboard anchor into waters. The anchorage position was 35°35'.2N 139°58'.1E.

At 0855 hrs, the vessel began to weigh up the anchor.

At 0900 hrs, the anchor was aweigh. The vessel proceeded to the Berth A of South Jetty,

Funabashi Central Terminal for berthing.

At 0945 hrs, the vessel arrived at the berth, dropped the starboard anchors and was to berth the port side alongside the terminal. The C/O, Bosun and two A.B. were on duty on the bow. The Bosun was in charge of the windlass and the C/O was giving instructions..

At 1002 hrs, first line ashore. The mooring winch suddenly stopped working. The Bosun proceeded to the main deck pump room to eliminate the malfunction from the starboard windlass by passage of the portside forecastle handrail.

At 1005 hrs, the Master adjusted the vessel's position by engine astern. The bow was 7-8 meters from the jetty and the aft about 20 meters. When the bow mooring winch resumed work and the head spring fastened, the spring was directly rolled backward by the winch through the portside mooring hawse without going through the front guide pulley (details refer to the enclosure—Simulated Layout of Head Spring. The Master used hard starboard at dead slow ahead and the head spring was instantly tensioned and hitched on the steel plate corner of the mooring winch's base. Under the force of engine ahead, the tensioned spring slid out of the corner and bounced, knocked down the Bosun who was passing by the portside rail to return to the forecastle from the pump room.

## **7. Analysis on the Causes of Accident**

### **7.1 Poor communication between the bridge and the bow/stern and the Master's improper operation**

The Master used engine ahead without communicating with the C/O and the 2/O who were on the bow/stern to confirm the condition of the fore/aft rope, as the result of which the head spring rapidly slid out and bounced up under the sudden force and knocked the Bosun down.

### **7.2 Violation of line ashore operation requirements, resulting in the rope bouncing up under the sudden force and thus knocking the Bosun down to death.**

According to the regulations of the Company's SMS documents on the instructions of mooring and departure, the C/O and 2/O should frequently report the situation of waters at bow and stern, the rope and the anchor to the Master. Although the rope had gone through the spring mooring hawse as in the normal way before the accident occurred, the rope eased off was not long enough and the spring was pulled out from the spring guiding pulley as the mooring winch was suddenly powered off. Under such circumstance, the C/O neither predicted the danger that the rope might bounce, nor reported the rope condition to the bridge, as the result of which the rope bounced up to the abnormal

working position under the sudden pull and knocked down the Bosun who was passing by that area.

7.3 Unexpected power-off of the bow mooring winch and the Bosun's returning to the forecastle from the inboard side berthing alongside the jetty after power resumed.

During the process of berthing with line ashore, the bow winch was suddenly powered off and the rope therefore failed to be released in a timely manner and had to be pulled off the spring from guide pulley manually. When the Bosun went down to the power room to restart the power and returned to the forecastle by the ladder of the inboard side, the rope bounced out and knocked him down.

## **8. Other problems discovered by the investigation**

### **8.1 Problems in Ship Management**

#### **8.1.1 Crewmembers' unfamiliarity with the Safety Management System**

The C/O of M/V EN KAI had long-term service onboard domestic trading ships before joining this vessel and was not familiar with the Safety Management System for International Navigation of the Company.

#### **8.1.2 Indisciplinary record of the Deck Log Book and Record Book of Engine Telegraph**

The Deck Log Book, Record Book of Engine Telegraph and other statutory record documents are incomplete or altered. Certain important issues such as the casualty accident caused by the ropes were not recorded in the Deck Log Book.

#### **8.1.3 Insufficient safety education and training and poor safety awareness**

As investigated, the new crewmembers had not accepted the pre-post training by the company before joining the vessel. Although they had attended the pre-post training after boarding the vessel, it was formalistic and could not reach the goal of making the crewmembers really familiar with their duties and responsibilities.

The Bosun was of poor safety awareness. In normal cases, the Bosun should have chosen the outboard side to go back to the forecabin after starting the winch. However, he was unaware of the danger of rope and went back by a shortcut via the inboard side. At that time, the rope bounced out and hit him down.

In normal cases, the Master should notify the C/O and the 2/O who were on duty on the fore/aft before using the engine. However, during the berthing of M/V “EN KAI”, the Master failed to timely notify the C/O and the 2/O before he used the engine, which exerted sudden force to the rope. Neither the Master nor the C/O was aware of the danger likely to occur.

## 8.2 Problems of the Shipping Company

8.2.1 According to the requirements in the SMS document on “Procedures Regarding the Employment and Assessment of Crewmembers”, the Company should carry out interviews, trainings and assessments to the prospectively employed Master and C/O. However, the C/O was employed by Fujian Anda Shipping Co., Ltd. merely via acquaintance’s introduction without going through strict training or assessment and the pre-post training of the crewmembers was formalistic.

8.2.2 The instruction of berthing/departing operations stipulated in the compulsory acknowledged document in SMS documents are not satisfactorily detailed.

## 8.3 Problems of Crewmembers’ Communication

The C/O of this vessel who comes from Guangxi province has a strong dialect accent when speaking mandarin, and his English is fairly poor. He had been an A.B. on a refrigerator vessel engaged in the foreign trading in Beihai City of Guangxi since 1972, was promoted to be 3/O in 1985 and 2/O in 1987. He has been serving as C/O since 1995 with the Chief Officer Certificate for Ships of 500-3000 GRT restricted to near-sea, coastal and offshore navigation zones and has been working onboard M/V EN KAI since 1 December 2010.

The Master who comes from Dalian City has difficulties in communication with the C/O, especially when the vessel was under berthing or departure operation, the Master could not fully understand what the C/O said if the C/O speaks a little fast over the walkie-talkie,.

## 9. Safety Recommendations

Fujian Anda Shipping Co., Ltd is recommended to as follows:

1. strengthen the crew training, especially the pre-post training to the newly recruited crewmembers, mainly focused on the familiarity of SMS documents, safety awareness, sense of risk and emergency response procedures;
2. further specify the procedural requirements of the vessel's berthing/departing in the compulsory acknowledged document in the SMS documents as per the specific situations of each vessel
3. strictly stick to the employment procedure of crewmembers in the recruitment and manning, strictly train and assess the crewmembers as per the requirement of the SMS documents.

Enclosure: Simulated Lay-out of the Head Spring of M/V EN KAI

# Enclosure

**Simulated Lay-out of the Head Spring of M/V EN KAI**

