



MAIR050000200903

**Report on the Investigation of Collision  
between  
“CMB Biwa” and “Lu Ri Yu 1608”  
on May 5<sup>th</sup>, 2009**



Shandong MSA

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# **Glossary of Abbreviations and Acronyms**

AIS - Automatic Identification System

COLREG - International Regulations for Prevention Collisions at Sea

GPS - Global Positioning System

IMO - International Maritime Organization

SOLAS - Safety of Life at Sea Convention

VHF - Very High Frequency

SVDR- Simplified Voyage Data Recorder

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## **1. Summary**

### **1.1 Outline of the Accident**

At about 0056hrs on May 5<sup>th</sup>, 2009, CMB BIWA(shorted as BIWA at below), belonging to BOCIMAR INTERNATIONAL NV, loaded with 52006 ton of coal, sailing from Indonesia to RIZHAO Port, collided with fishing boat under work LU RI YU 1608 (shorted as fishing boat 1608 at below), which belonged to GUO JIANGKAI in village Zhan'er Zi of TAOLAO County in DONGGANG area of RIZHAO, at No.5 anchorage of ShiJiu port area in RIZHAO Port, resulting in a casualty of two dead, three missing and two injured, and a severe damage to the hull of the fishing boat, which could be listed as a serious sea accident.

### **1.2 Investigation into the Accident**

An investigation group by SHANDONG MSA on May 5<sup>th</sup>, which immediately carried out the investigation and evidence gathering.

Via questioning the captain of BIWA, the duty officer, BA on duty, the survivors of fishing boat 1608 and the witnesses, and inquiring into the related navigation records together with the VDR and AIS records, and surveying the scene, the investigation group has got 7 copies of the questioning records,

40 copies of the materials related to the vessels and crew involved, one copy of the VDR data, two copies of the survey report at the scene and one copy of the underwater investigation report.

## **2. Ship particulars**

### **2.1 General Information of the Vessels**

#### **2.1.1 BIWA**



NAME	CMB BIWA	NATIONALITY / PORT OF REGISTRY	BELGIUM/Antwerp
TYPE	BULK CARRIER	HULL MATERIAL	STEEL
CALL SIGN	ONED	IMO NO.	9267417
GROSS TONNAGE	29963	NET TONNAGE	18486
DEAD WEIGHT	53505 ton	OVERAL LENGTH	189.94 m
MOLDED BEAM	32.26 m	MOLDED DEPTH	17.30m
ENGINE TYPE	MITSUI-MAN B & W SIESEL ENGINE 6550MC-C	ENGINE POWER	9840KW
DESIGNE D SPEED	14 Kn.	CLASSIFICATI ON SOCIETY	ABS
No. of TANKS	5	AVERAGE LOAD LINE	12.30m
DATE OF BUILDIN G	2002	BUILDING PLACE	JAPAN

### 2.1.2 Fishing Vessel 1608

NAME	LU RI YU 1608	PORT OF REGISTRY	QINGDAO
TYPE	FISHING BOAT WITH TRAWLS	HULL MATERIAL	STEEL
CALL SIGN	BTDS	No. of REGISTRY CERTIFICATE	YD020J080546
GROSS TONNAGE	77	OVERALL LENGTH	25.58 m
BREADTH MOLDED	5.30 m	DEPTH MOLDED	2.20 m
ENGINE POWER	140.0KW	DESIGNED DRAFT	1.70 m
NET TONNAGE	25	BUILDING YARD	BUILDING YARD OF WENDENG
BUILDING DATE	June 18 <sup>th</sup> , 2008	No. of WATERTIGHT BULKHEAD	6

## 2.2 General Information of the Vessels' Survey

### 2.2.1 BIWA

The cargo ship safety equipment certificate, cargo ship safety construction certificate, cargo ship safety radio certificate, minimum safety manning certificate, IOPP certificate, IAPP

certificate, and international load line certificate of the vessel are issued by the country of registration and are all valid. The annual survey of the vessel was carried out in Turkey on Nov. 27<sup>th</sup>, 2008. All of the certificates required for BIWA are full and valid

### **2.2.2 Fishing boat 1608**

The fishing boat registry certificate of the vessel is issued by Shandong Fishing Port Supervising Bureau, Qingdao Branch, on July 11<sup>th</sup>, 2008, which is valid till July 10<sup>th</sup>, 2013; The fishing vessel survey certificate is issued by Shandong Fishing Vessel Survey Administration, Qingdao Branch, on April 6<sup>th</sup>, 2008; The fishing License is issued by Shandong Ocean and Fishing Bureau on August 12<sup>th</sup>, 2008. The fishing vessel safety certificate, fishing vessel tonnage certificate and the fishing vessel load line certificate are all valid.

All of the certificates required for 1608 are full and valid

### **2.3 PSC History**

On Jan.14<sup>th</sup>, 2009, BIWA went through a PSC inspection with a history of no deficiency.

## **2.4 Manning Information**

### **2.4.1 Manning Information of BIWA**

There are 21 crew members on BIWA for this voyage, including 10 in deck department and 8 in engine department, which meets the requirement of the minimum safety manning certificate, and all of the crew certificates are valid.

### **2.4.2 Manning Information of Fishing Vessel 1608**

There are seven crews on board for this voyage. The manning of 1608 meets the requirement of Ocean Fishing Permission of People's Republic of China.

## **2.5 Information of the Companies**

### **2.5.1 Company of BIWA**

Ship's Owner: Bocimar International N.V. Address: Garlachekaai 20 B-2000, Antwerp, Belgium.

Ship's Manage and Operator: Anglo-Eastern (Antwerp) N.V. Address: Euwbeslaan 14 2610 Wilrijk, Belgium. The company got its DOC issued by FEDERAL PUBLIC SERVICE Mobility and Transport Administration of Maritime Transport on Jan. 1<sup>st</sup>, 2009 in Antwerp with the number: NO.002/2005, which is valid till May 16<sup>th</sup>, 2010.

BIWA got its SMC certificate issued by the flag state on

Jan. 1<sup>st</sup>, 2009 with the No.167, which is valid till Sep. 27<sup>th</sup>, 2011.

### **2.5.2 Fishing Vessel 1608**

Fishing vessel 1608 belongs to MR.GUO in ZHANZI ER CUN village in TAOLUO County in DONGGANG district of RIZHAO.

## **3. Environmental conditions**

### **3.1 Weather and Sea Conditions**

Wind Direction and Force: wind westerly force 2;

Visibility: 6 to 7 N miles;

Course and speed: course south-easterly, speed 0.6 to 0.8 Kn.

Wave: swell south, magnitude of wave:0.5m;

Temperature: about 15°C, clear;

The low tide came at 2047hrs on May 4<sup>th</sup>, 1.39m; the high tide came at 2047 hrs on May 4<sup>th</sup>, 3.89m.

### **3.2 Navigation Conditions**

The accident happened at the southwest of No.5 anchorage of ShiJiu port area in RIZHAO Port, where every vessel has to pass and has a high traffic density.

## **4. Analysis**

The fundamental elements mainly got from the AIS data of BIWA, SVDR data and the relevant navigation records, the statements of the crew from both vessels and the captain of the tug fishing vessel LURIYU 1607, together with the investigation and underwater probe, which form the basis for the evidence analysis.

### **4.1 Time of Collision**

Both the statements of the captain of BIWA , the officer on duty and the captain of fishing boat 1607 and the SVDR data records of BIWA and AIS records from RIZHAO MSA show that the time of collision is 0056hrs on May 5<sup>th</sup>. Therefore, the report takes the time of collision as at 0056 hrs on May 5<sup>th</sup>, 2009.

### **4.2 Position of Collision**

Since the time collision is taken as at 0056 hrs on May 5<sup>th</sup>, 2009, referring to the SVDR and the AIS records from RIZHAO MSA, the report takes the position of collision as at 35°15'.2N, 119°46'.4E.

### **4.3 Collision Parts**

The starboard bow of BIWA collided with the starboard bow of fishing boat 1608, which is based on the following

evidence:

The statement of the captain of BIWA and the duty officer shows that the bow of BIWA collided with the starboard at the bow of fishing boat 1608, followed by that the right anchor of BIWA scratched the front derrick of the fishing boat 1608, and the upturned fishing boat collided with the portside of BIWA.

The investigation on spot shows that the bridge of fishing boat 1608 was severely damaged and a four-meter long steel tube was left on the right anchor of BIWA.

#### **4.4 Angle of Collision: Between 30° to 55°**

At the time of collision, fishing boat 1608 was turning to portside, while her heading was not clear. The report takes the angle of collision as 55° because BIWA turning to starboard side and fishing boat 1608 turning to port side were taken almost at the same time, and the turning angel was about 5° (heading from 295° to 300°). In consideration of the maneuvering ability and the size, the turning angel of fishing boat 1608 should be about 5° (heading from 180° to 175°).

The statement of the captain and second officer of BIWA shows that the starboard side at the bow of fishing boat 1608 collided with the bow starboard of BIWA. And the captain eye-measured the angel of collision is about 30°.

The survey of the collision parts of the vessels shows that the collision angel was in consistent with the angel that we

calculated.

Therefore, the report takes the angle of collision as between 30° to 55° (see file 9).

## **5. Narrative**

The outline of the accident was based on the statement of the crew involved and the witnesses, the AIS record, vessel's record and SVDR record of BIWA.

### **5.1 BIWA**

On Apr. 27<sup>th</sup>, BIWA, loaded with 52006 tons of coal, left from Indonesia to RIZHAO port, with the fore draft of 12.25m and aft draft 12.47m when left the port.

At 2345hrs on May 4<sup>th</sup>, position: 35°10'.1N, 120°04'.5E, course 270°, speed 14.3kn. The engine room was informed to stand by engine, at the time of which the captain, second officer and an AB was on the bridge. The captain was in charge of the vessel; the second officer was the assistant and the AB was steering. Two radars were on, north-up, relative-motion off-center display. The radar which was at the left side of the bridge was connected to SVDR at a range of 6 N miles. The right radar interchanged between 3 N miles and 1.5 N miles alternatively.

At 0000hrs on May 5<sup>th</sup>, position 35°10'.2N, 120°00'.0E,

course 291°, speed 13.7kn. main engine ready.

At 0006hrs, the vessel was informed to go to No.1 anchorage of RIZHAO port.

At 0009hrs, position 35°11'.0N, 119°57'.7E, course 291°, speed 14 kn., to avoid the fishing boats, the course was changed to 295°.

At 0022hrs, position 35°12'.3N, 119°54'.3E, course 295°, speed 14 kn.

From 0025hrs to 0030hrs, the left radar was at 6 N miles and 12 N miles alternatively and was fixed at 6 N miles.

At 0030hrs, position 35°13'.1N, 119°52'.3E, changed to hand steering when found a lot of fishing boats.

At 0035hrs, position 35°13'.5N, 119°51'.0E, course 290°, speed 13.0 kn.

At 0045hrs, position 35°14'. 3N, 119°48'.8E, course 294°, main engine revolution 85 RPM, changed to power-driven sailing, speed was reduced to 11.4 kn., several fishing boats were found in front.

At 0048hrs, position 35°14'.6N, 119°48'.2E, course 300°, speed 11.1kn. Three fishing boats were found approaching at 5° to 10° starboard. The closest one was about 1 N mile away and the other two fishing vessels with very bright light, which were close to each other ( later proved to be fishing boat 1608 and its 对拖船“1607”渔

船) , were about 2 N miles away.

At 0051hrs, position 35°14'.8N, 119°47'.6E, speed 10.7 kn., altered to portside 290°.

At 0052hrs, position 35°14'.1N, 119°47'.1E, course 290°, speed 10.6 kn. The closest fishing boat overtook BIWA by the starboard. Meanwhile, fishing boat 1608 and 1607 were 1 N mile away about 10° at the starboard.

At 0054hrs, position 35°15'.0N, 119°47'.0E, course 290°, speed 10.5 kn., about 0.7 N mile away from fishing boat 1608 and 1607, which were 10° at the starboard of BIWA. BIWA manoeuvred five short blasts.

At 0056hrs, position 35°15'.2N, 119°46'.4E, speed 10.5knt., course 290°. The nearby fishing boat 1607” turned to portside and overtook the BIWA at 0.1 to 0.5 n mile of the starboard.

After the captain of BIWA ordered to turn to starboard, it was found that fishing boat 1608 began to turned to portside, for which the captain of BIWA then ordered to avoid collision by hard-a-starboard. The bow of BIWA collided with the bow starboard of fishing boat 1608 and BIWA stopped engine immediately.

At 0057hrs, the vessel turned on the deck lights and the no under-command light. At 0115hrs, the vessel turned off SVDR and stored the data in SVDR.

At 0120hrs, the vessel left the scene for No. 1 anchorage.

At 0254hrs, the vessel moored at 35°19'.1N、 119°38'.4E of No.1 anchorage.

## **5.2 Fishing Boat 1608 and 1607**

On April 30<sup>th</sup>, 2009, fishing boat “1608” and her partner “1607” left ShiJiu port for fishing in the way of towing. Fishing boat “1608” was responsible for the coordination of the two vessels. The two vessels were parallel in a distance of 180m. The towing net was about 460m long.

At about 2345hrs on May 4<sup>th</sup>, 1608 laced line. The captain was steering at the bridge, and all others were sorting out fish in the cargo-hold. The deck lights, navigational lights. And the upper-green lower-white signal lights were on.

At about 0015hrs on May 5<sup>th</sup>, fishing boat 1607 throw nets. The course of the two vessels was 180°, the speed was about 3 to 4 kn. The deck lights, navigational lights. And the upper-green lower-white signal lights of 1607 were on.

At about 0040hrs, the captain of 1607 observed BIWA which was eastern to it, was proceeding to west. At about 0045hrs, the captain of 1607 contacted with fishing boat 1608 for the last time through radio telephone on the boat, and informed its chief officer that a big vessel was approaching.

When fishing boat 1607 was about 0.1 nautical mile away from BIWA, it turned to port side and overtook BIWA through the starboard side. At about 0056hrs, the captain of 1608

observed that fishing boat 1608 collided with BIWA during turned to port side. The captain ordered to cut the net and call the fishing boats nearby for immediate rescue.

## 6. Search and Rescue

After received the accident report at 0140hrs on May 5<sup>th</sup>, Search and Rescue Center of Shandong Province immediately launched the Search and Rescue Plan, organized and coordinated the maritime administration, the port authority, and the fishing administration to carry out the rescue all together. Professional search and rescue helicopter was sent on the same day. Through the great effort of various parties, two fishermen were rescued.

## 7. Consequence

The accident resulted in a casualty of two deaths, three missing and two injured on board of fishing boat 1608, the hull at the starboard of which was dented and the bridge was severely damaged.

At the starboard hawse hole of BIWA, there was a small area that had been scratched and some paint lost.

## **8. Causes**

### **8.1 Reference of the Analysis**

The causes analysis of the accident were mainly based on the following data: the SVDR data of BIWA, AIS record of RIZHAO MSA, and the relevant navigational log, the statement of the crew involved on BIWA, the survivors of fishing boat 1608 and the captain of fishing boat 1607, and the investigation on the spot.

The accident happened between two underway power-driven vessels in the waters of the port with a good visibility. Therefore, it is applicable to the International Regulations for Preventing Collisions at Sea, 1972, the Laws of Traffic Safety at Sea of People's Republic of China, and some other international conventions.

### **8.2 Causes of the Accident**

BIWA did not follow the regulation of give-way vessel in the International Regulations for Preventing Collisions at Sea. When facing the close-quarters situation, it turned to starboard, trying to pass through the two fishing boats is the direct cause of the collision.

When obviously BIWA did not fulfill its give-way vessel obligations, and all vessels in a close-quarters situation, fishing

boat 1608 did not take avoiding actions in ample time, which is the indirect reason.

### **8.3 Negligence of Avoiding Actions**

#### **8.3.1 BIWA**

When sailing towards the waters of RIZHAO port, BIWA did not maintain a proper look-out by all available means appropriate, and did not maintain a continuous observation of fishing boats 1608 and 1607 at her starboard, nor did she make a full appraisal of the situation and of the risk of collision, which violates rule 5 and rule 7 in the International Regulations for Preventing Collisions at Sea, 1972.

When crossing with fishing boats 1608 and 1607 so as to involve risk of collision, BIWA did not take early and substantial action to keep well clear of fishing boats 1608 and 1607, which were restricted in her ability to maneuver. Thus, it violates rule 16 and rule 18 in the International Regulations for Preventing Collisions at Sea, 1972.

After overtook 1607 via her starboard side, BIWA took hard-a-starboard, trying to pass through the fishing vessel. This action violates the item a and item e in rule 8 in the International Regulations for Preventing Collisions at Sea, 1972.

When found there were fishing boats working in front, BIWA did not take any action to reduce her speed, but rather

keep a pretty high speed till collided with fishing boat 1608, which violates rule 6 in the International Regulations for Preventing Collisions at Sea, 1972.

After the collision, in the condition of no serious danger to herself, BIWA did not try to rescue the crew in danger, which violates the International Convention for Saving Life at Sea and rule 37 and rule 38 in the Law of Traffic Safety at Sea of People's Republic of China.

### **8.32. Fishing Boat 1608**

Fishing boat 1608 fished in the port area and impeded the safe navigation of other vessels, which violates rule 22 in the Law of Traffic Safety at Sea of People's Republic of China.

When it became apparent to her that the vessel required to keep out of the way was not taking appropriate action, fishing boat 1608 did not take action to avoid collision by her maneuver alone, but rather keep her speed and did not turn to the port side till less than one minute before the collision. Thus, it violates item ii in item a of rule 17 in the International Regulations for Preventing Collisions at Sea, 1972.

When fishing in the waters of the port area, the vessel did not use all available means appropriate to the prevailing circumstance and conditions to make full appraisal of the risk of collision. At 0045hrs, the captain of 1607 informed fishing boat 1608 that a big vessel approached from east to west. But fishing

boat 1608 kept her speed instead of take any action. The vessel did not take the prevailing circumstances and the difficult of maneuvering for fishing vessels under work into consideration, which violates item a of rule 7 in the International Regulations for Preventing Collisions at Sea, 1972.

## **9. Suggestions for Safety Management**

050000SR200905: The safety management company did not carry out the safety and pollution-prevention for BIWA sufficiently. Therefore, it is suggested that FEDERAL PUBLIC SERVICE Mobility and Transport Administration of Maritime Transport of Belgium shall give additional inspection for the safety management of Anglo-Eastern (Antwerp).

050000SR200906: It is suggested that RIZHAO MSA shall set a series of safety management measures in consideration of the port channels and the VTS , to further strengthen the supervision work.

# 10. Appendix:

## 10.1 Under water visual inspection report

SD-E-563

### UNDER WATER VISUAL INSPECTION REPORT

NO: RWP06A-E

No.:

Ship Name	CMB BIWA	Owner			
Operating Place	RIZHAO PORT	Inspection Time	10/5-2009	Instrument Model	UWS3020
<b>SEA-WEATHER CONDITIONS</b>					
Weather: <input type="checkbox"/> Sunny / <input checked="" type="checkbox"/> Cloudy / <input type="checkbox"/> Rainy / <input type="checkbox"/> Snowy Wave high: <u>2</u> Meters					
Visibility: <u>3</u> Meters Current Speed: <u>0.0</u> m/s Wind: <u>4</u> grades					
Water Depth: <u>17</u> Meters Operation Water Depth: <u>11.8</u> Meters					
SURVEY MEASURE: <input checked="" type="checkbox"/> Video Survey / <input type="checkbox"/> Photo Survey / <input checked="" type="checkbox"/> Visual Survey					
<b>Inspected Part and Result</b>					
<b>MAIN PROPELLER(S)</b>					
Number: <input checked="" type="checkbox"/> One / <input type="checkbox"/> Two / <input type="checkbox"/> Three Blades: <input type="checkbox"/> Three / <input checked="" type="checkbox"/> Four / <input type="checkbox"/> Five / <input type="checkbox"/> Six					
Blade Fastening: <input checked="" type="checkbox"/> Secure / <input type="checkbox"/> NA / <input type="checkbox"/> See Notes					
Tailshaft Wear Down Reading: <input type="checkbox"/> Yes / <input type="checkbox"/> No					
Upper: _____ mm Lower: _____ mm					
Coating System: <input checked="" type="checkbox"/> Intact / <input type="checkbox"/> Detachment / <input type="checkbox"/> Cold Flow					
Shield Entanglement: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted Removed: <input type="checkbox"/> Yes / <input type="checkbox"/> No					
Growth Type: <input type="checkbox"/> Clean / <input type="checkbox"/> Slime / <input type="checkbox"/> Grass / <input type="checkbox"/> Tube Worms / <input checked="" type="checkbox"/> Barnacles					
Damage on Propeller: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted Polished: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No					
Damage on shield: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted					
Description: <u>No damages was found on it, just a little barnacles.</u>					
<b>RUDDER(S)</b>					
Number: <input checked="" type="checkbox"/> One / <input type="checkbox"/> Two / <input type="checkbox"/> Three Fastening: <input checked="" type="checkbox"/> Secure / <input type="checkbox"/> Sighted					
Damage: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted Anodes: <u>10</u> % Depleted					
Rudder Pintle Reading: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No					
Upper Pintle: Fwd _____ mm Aft _____ mm; Lower Pintle: Fwd _____ mm Aft _____ mm					
<b>FLAT BOTTOM</b>					
Growth Type: <input checked="" type="checkbox"/> Clean / <input type="checkbox"/> Slime / <input type="checkbox"/> Grass / <input type="checkbox"/> Tube Worms / <input type="checkbox"/> Barnacles					
Coating System: <input checked="" type="checkbox"/> Intact / <input type="checkbox"/> fall off / <input type="checkbox"/> Cold Flow Damage: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted					
Description: <u>There is a little fishing net at the backward.</u>					
<b>VERTICAL SIDES</b>					
Growth Type: <input checked="" type="checkbox"/> Clean / <input type="checkbox"/> Slime / <input type="checkbox"/> Grass / <input type="checkbox"/> Tube Worms / <input type="checkbox"/> Barnacles					
Coating System: <input type="checkbox"/> Intact / <input checked="" type="checkbox"/> fall off / <input type="checkbox"/> Cold Flow Anodes: <u>10</u> % Depleted					
Damage: <input checked="" type="checkbox"/> None Sighted / <input type="checkbox"/> Sighted <u>slight</u>					
Description: <u>There is just some scratches on verticle side.</u>					

## 10.2 Diagram of collision

