



Report of Investigation
into the Fatal Incident on
board General Cargo Vessel
“J Real” at Suao, Taiwan
on 21 January 2005



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

Purpose of Investigation

This incident is investigated, and published in accordance with the IMO Code for the Investigation of Marine Casualties and Incidents promulgated under IMO Assembly Resolution A.849(20). 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 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.

1. Factual Information

1.1 Description of m.v. "*J Real*"

Port of Registry:	Hong Kong
Type of Vessel:	General Cargo
Official Number:	HK-0989
IMO number:	9010058
Gross Tonnage:	7,090
Deadweight:	10,058 tonnes
Type of Ship:	General Cargo Ship
Propulsion Power:	2,575 kW
Length:	110.02m
Breadth:	19.20m
Mould depth:	13.70m
Class:	Nippon Kaiji Kyokai (NKK)



Fig. 1: Photo of m.v. "*J. Real*"

2. Summary

- 2.1 At about 1156 local time on 21 January 2005, m.v. "*J Real*" was berthed alongside at berth No. 10 of the port of Suao, Taiwan for loading cargo. At about 1515, the cargo work was postponed due to raining. The crew members started to close all hatch covers.
- 2.2 After the rear part of the No. 2 hatch covers had been closed, the Bosun stood on the top of it for signalling the closing operation of the forward part of No. 2 hatch covers. While the forward part of No. 2 hatch covers were on the way of closing, the rear part of the hatch covers that the Bosun was standing on suddenly slid backward to the open position. As a result, the Bosun was crushed between the foldable hatch covers. He was immediately rescued and sent to hospital for medical treatment. However, he was certified dead in hospital later on.
- 2.3 The investigation has established the main cause of the accident was the lack of safety awareness of the crew members that they did not observe the safety procedures from the Safety Management System (SMS) for the closing of the hatch covers.

3. Description of the MacGREGOR hatch covers

3.1 The forward and rear parts of the hatch covers consisted of five and four pontoons respectively. The pontoons were extended longitudinally across the hatch with rollers which rest on the hatch coaming. The covers were opened by pulling them to the forward and after ends of the hatch where they tipped automatically into the vertical position. The estimated weight of each pontoon was 1.5 tonnes. The pontoons were linked up by steel chains, allowing opening or closing to be operated in a continuous action. A winch was used for pulling the operation steel wire. After closing, the covers fitted with interlocks and rubber packing so that when the covers were wedged down, water tightness could be maintained. (See Fig. 2 below)

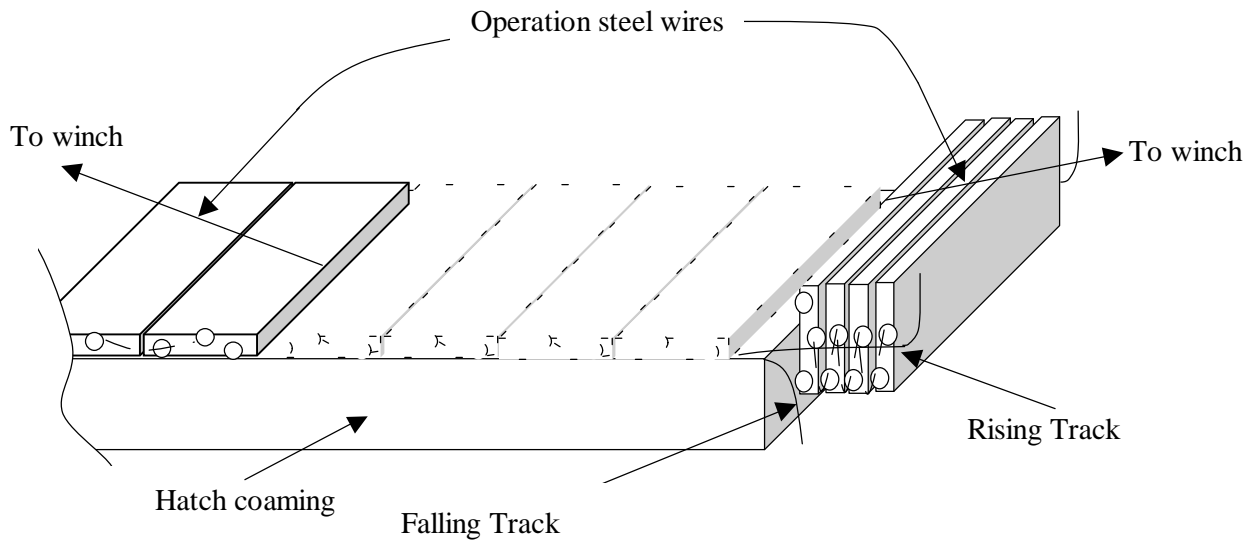
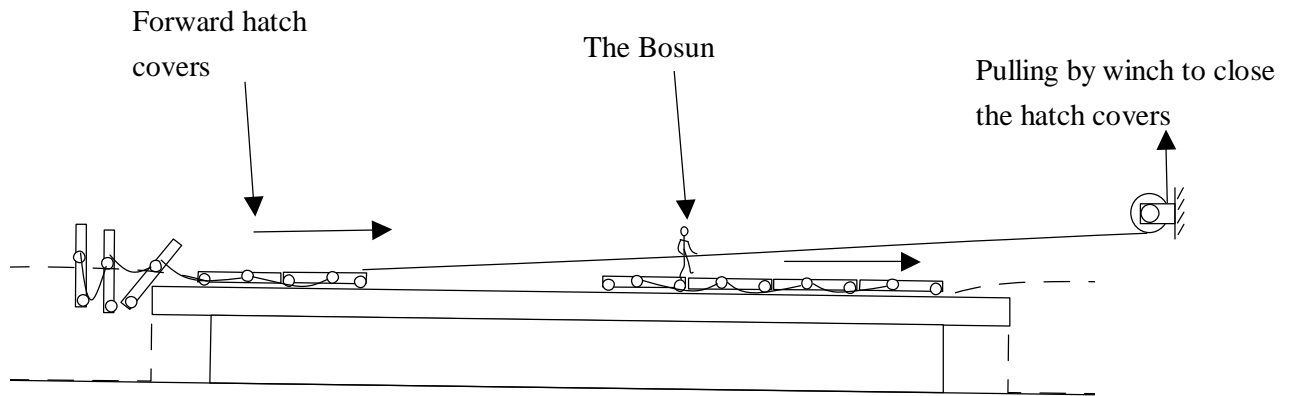


Fig. 2: The MacGREGOR hatch covers.

4. Outline of events

- 4.1 M.V. “*J. Real*” arrived at berth No. 10 of the port of Suao, Taiwan for loading cargo at 1156 on 21 January 2005. The vessel was fitted with two cargo holds.
- 4.2 At about 1500, the crew members opened the cargo holds for cargo loading. However, at 1515, the cargo work could not be started due to raining. The crew members started to close all the hatch covers in order to keep the cargo holds dry.
- 4.3 At 1625, after closing the rear part of No. 2 hatch covers, it was found that the hatch covers was slightly misaligned that the pin stopper could not be inserted to the hatch coaming to secure the hatch covers in position. Therefore the crew members secured the hatch covers temporarily with a steel wire. They then started to close the forward hatch covers of the No. 2 cargo hold while the Bosun stood on the rear part of the hatch covers to signal the operation to the winch operator. (See fig. 3 for details)
- 4.4 While closing the forward part of the hatch covers, the steel wire for securing the rear part of hatch covers was broken and the pontoons started to slide backwards. The Bosun tried to get off from the hatch covers, however, the hatch covers was moving fast and the Bosun was trapped and crushed between the foldable hatch covers. (See fig. 4 for details)
- 4.5 After the accident, the crew members immediately used a hydraulic jack to open the gap between the foldable hatch covers and took the Bosun out. At 1710, an ambulance arrived and the Bosun was sent to hospital for medical treatment. However, he was certified dead at 1753 in a hospital on the same day.



Remarks: the Vessel trimmed with 2 m by stern

Fig. 3: Scene of the accident

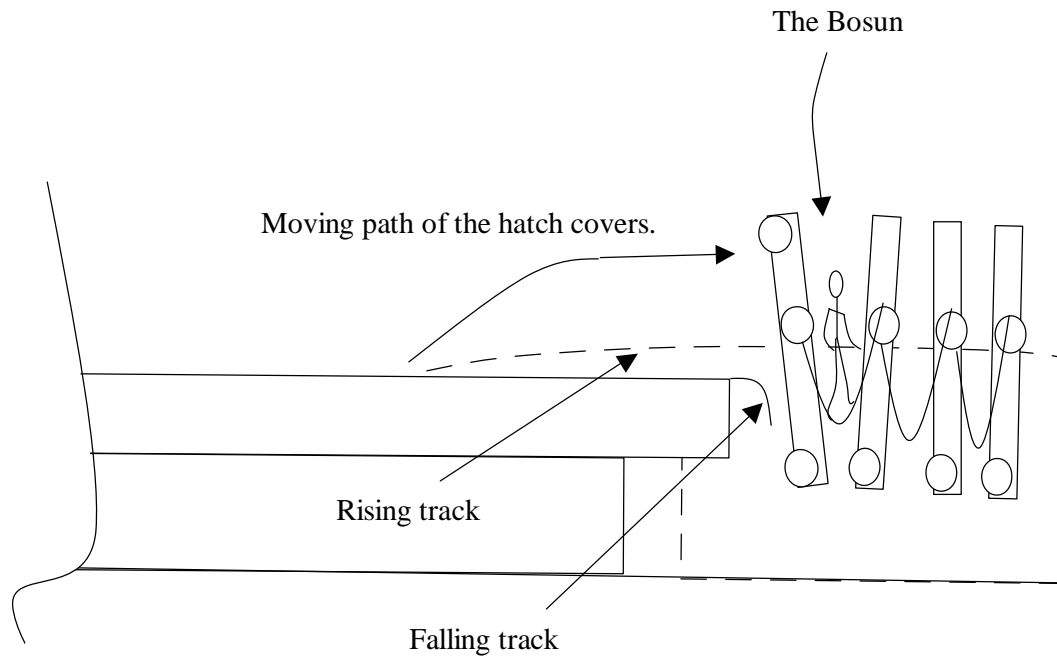


Fig. 4: The Bosun was trapped and crushed between the foldable hatch covers.

5 Findings and Analysis

Working Experience of the Deceased

- 5.1 The Bosun had been working with the company as a deck rating for over twenty years. He was promoted to Bosun in 2003.

The pin stopper assemblies for hatch covers

- 5.2 The first pontoon of the hatch covers had two pin stopper assemblies for locking the hatch covers at its close position and preventing any movement of the hatch covers. However, during the closing of the rear part of the No. 2 hatch covers, the crew members found that the pin stopper could not be inserted due to misalignment. So they used a steel wire to temporarily secure the hatch covers instead. (Please refer fig. 5 for details).

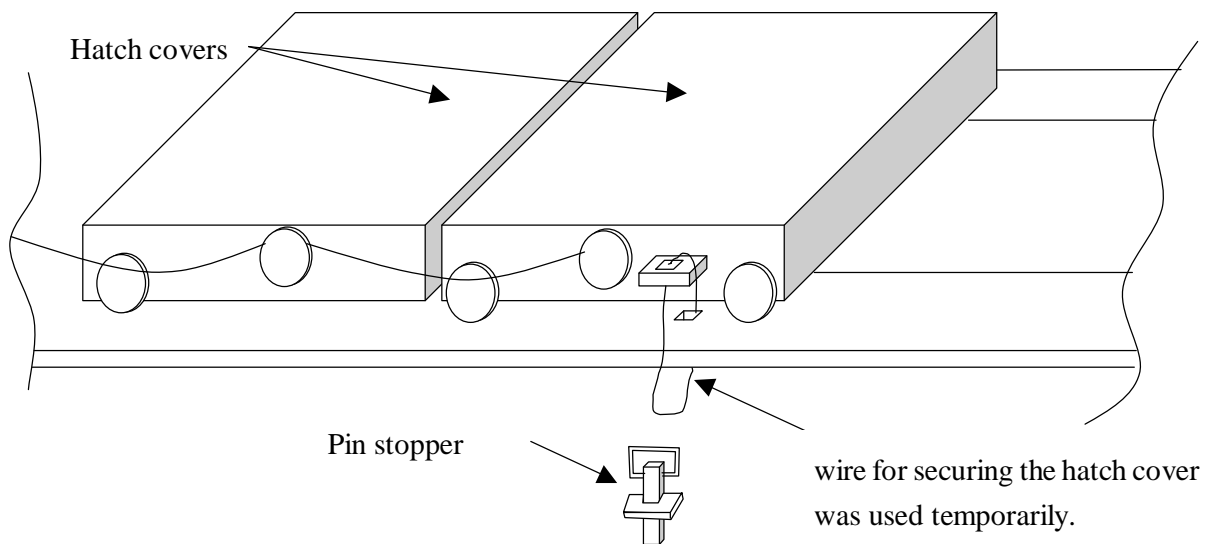


Fig. 5: Arrangement of the hatch covers and the pin stopper.

The effect of trim on the hatch covers

- 5.3 The forward draft and the aft draft of the Vessel was 3.1 m and 5.1 m respectively. With the 2 m trim by stern, the slope of the hatch was about 1 in 50 and the hatch covers would tend to move to the aft of the vessel. At the time of the accident, the forward part of the hatch cover was closing and

could cause vibrations to the hatch-coaming. Such vibrations may also trigger the rear part of the hatch covers which were not properly secured to slide backwards.

Safety awareness of the crew members

- 5.4 The crewmembers had used a steel wire rope instead of the proper stopper pin to secure the hatch covers to prevent the sliding movement of the covers. There was no information about the condition of the steel wire rope, however, the crew members described that the steel wire rope was thin and rusty. It appears that the wire rope was not strong enough to hold the great inertia of the moving hatch covers.
- 5.5 It was a poor working practice that crew members stood on the hatch covers for signalling to the winch operator. The Bosun climbed up to the top of the hatch covers for a better view in order to signal the winch operator. However, the views from the winch operator were unrestricted and it was not necessary for the Bosun to stand on the hatch covers for signalling to the winch operator.

Safety Management System (SMS)

- 5.6 Procedures for the hatch covers operations were established in the ship's Safety Management System (SMS). In the incident, the non-conformities were:

SMS requirements	Non-conformities ¹
Item 4 of S 2.6.2: Two safety pins or two wire ropes to be used to secure the hatch covers.	Only one thin and rusty wire was used to secure the hatch covers.
Item 1 of S 2.6.3: Trimming and list of the vessel was required to reduced to minimum.	The Vessel was 2 m trimmed by stern
Item 2 of S 2.6.3: No one was allowed to stand on top of hatch covers for signalling.	The Bosun was standing on top of the hatch covers for signalling

It appeared that the crewmembers did not observe the safety procedures for the closing of hatch covers.

¹ Non-conformity means an observation where objective evidence indicates the non-fulfilment of a specified requirement in the Safety Management System (SMS).

6. **Conclusions**

6.1 The investigation has identified the following direct causes and contributory factors of the fatal accident:

Direct causes:

- i) Single thin and rusty wire was used to secure the heavy hatch covers;
- ii) Operation of hatch covers without considering the vessel was at 2 m trimmed by stern; and
- iii) Crew member stationed on top of the hatch covers for signalling.

Contributory factors:

- i) Lack of safety awareness of crew members; and
- ii) Not to follow safety procedures for closing of hatch covers.

7. **Recommendations**

7.1 A copy of the report should be sent to the Master and the management company of the vessel drawing their attention on the findings of the accident and the lesson learnt there from this incident.

7.2 A Merchant Shipping Information Note should be issued to promulgate the lessons learnt from this incident, and to remind seafarers and stevedores to follow safety procedures for hatch covers operations.

8. **Submissions**

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 Marine Department to send a copy of the relevant part of the draft report to that person or organization for their comment.

8.2 The draft report was sent to the Master and the management company of the vessel, however there were no submissions received from them.