सत्यमेव जयते
भारत सरकार / GOVERNMENT OF INDIA
पत्तन, पोत परिवहन और जलमार्ग मंत्रालय
MINISTRY OF PORTS, SHIPPING AND WATERWAYS
नौवहन महानिदेशालय, मुंबई
DIRECTORATE GENERAL OF SHIPPING, MUMBAI

F. No.25-19012/4/2024-NT-DGS Date: 31.07.2024

Ref. No. Nautical Wing/Casualty Branch/02/2024

DGS Circular – 23 of 2024

Sub.: Safety Measures to be followed by personnel on entry into enclosed spaces following Recent Incidents at Indian Ports–reg.

This circular is issued considering two unfortunate incidents that occurred recently at Indian Ports resulting in tragic loss of two stevedores and one excavator-operator onboard the vessels. Both the casualties occurred due to entry of personnel into the cargo hold which was in closed condition and not checked for atmosphere suitability prior entry. The incidents occurred as the personnel entered through the booby hatches, however, in one of the incidents, there was a lack of adequate marking for the cargo space they served.

Figure 1: No: 5 Booby hatch with lashing wire (number not marked) – Incident 1

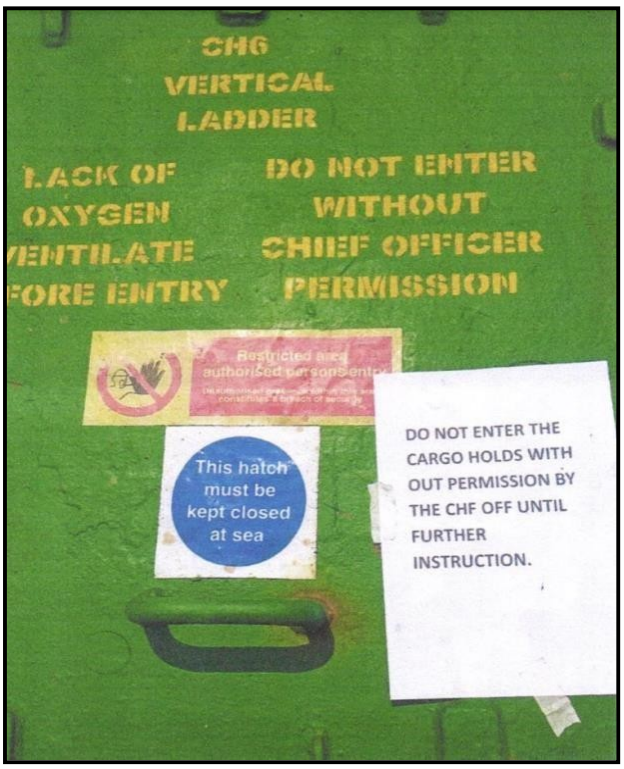

Figure 2: Notices outside the booby hatch (Incident 2)

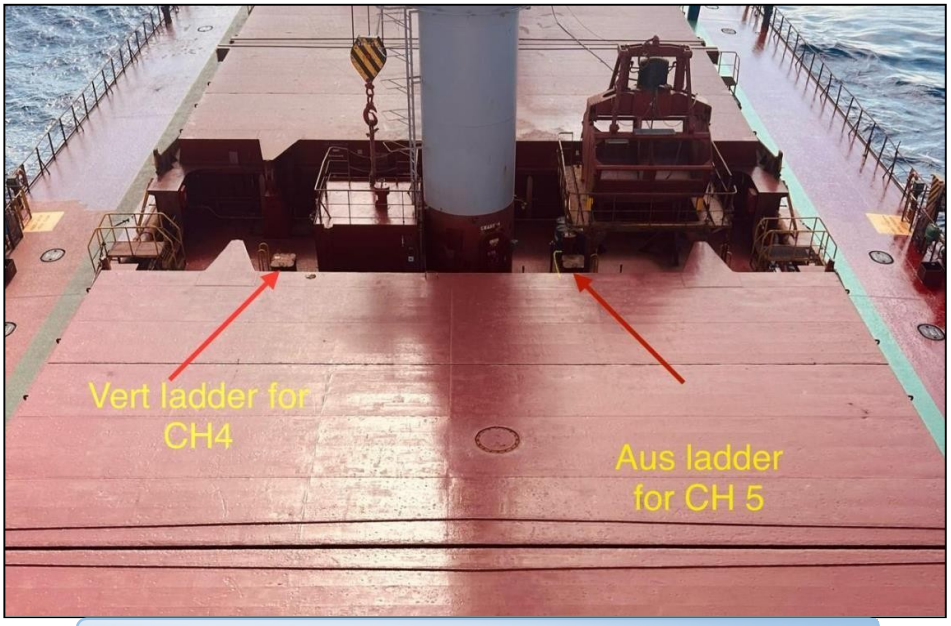

Figure 3: Representative image of booby hatch on a bulk carrier

What Happened

Incident No.1

1. The vessel arrived at an Indian port (alongside jetty) for discharging Indonesian Thermal coal in bulk using shore cranes. Discharging operation commenced from Cargo holds 2 and 6 at 0430 hours.
2. Around 1110 hrs. LT the ship's duty AB noticed that the bobby hatch of No. 5 was open, despite being secured with a seizing wire. He found two people lying down and immediately informed the Bosun and the duty officer. The rescue operation commenced at 1114 hrs. and by 1120 hrs. the 1st casualty was removed from the No. 5 cargo hold followed by the second stevedore at 1128 hrs. Both the casualties were unconscious and unresponsive.
3. The casualties were shifted to shore hospital in ambulance where one stevedore was declared dead on arrival and the second person passed away while undergoing treatment.

Incident No.2

1. The vessel loaded with coal arrived at an Indian Port for unloading.
2. The stevedore personnel were engaged for the purposes of cleaning of Hatch # 4 shift around 22:00 Hrs. on 21-04-2024. The stevedore person did not return or reported back to office after completion of his duty.
3. He was found unconscious in the restricted and closed manhole of cargo hold No # 4 at Australian ladder upper section at 0650 hrs. on 23/04/2024.

4. The shipboard first aid team reached the accident area with all precautions for providing oxygen mask to save the victim, however there was no pulse and reaction realized.

5. An ambulance, fire team and Port authorities and Police team arrived to take the casualty to the Hospital and carry out investigation.

6. The deceased Stevedore person's body was handed over to the family after carrying out postmortem by the local authorities.

Why it happened

Incident No1.

1. The cargo hold bobby hatches were found painted and the stenciling of hold numbers missing. It was also observed that the bobby hatches of the hold were padlocked and some of them were wire lashed. The present incident hold found to be wire lashed with seizing wire.
2. Even though they were wire lashed, the shore gang opened it by themselves and entered the wrong bobby hatch which is in between # 5 and # 6 holding without informing the ship staff.
3. Without realizing and without taking any precautions, the stevedores entered the wrong bobby hatch of the #5 Australian ladder enclosed space where the atmosphere was oxygen deficient and rich in methane.
4. The vessel had completely enclosed Australian ladders in the hold. Design of completely enclosed Australian ladders had access on top from the deck and opening at the bottom. This design solved the problem of keeping the Australian ladder safe and secure and minimized the accumulation of cargo residues. But one dangerous situation that was left behind was the filling up of toxic gases of the cargo inside the tunnel.
5. Hatch covers were opened prior to discharging cargoes in a cargo hold and as a result, toxic gases in the cargo hold slowly get diluted/dissipated with the atmosphere naturally due to more surface area. But the gases in the tunnel do not get diluted like that even though the bobby hatch cover is open from the top. The toxic gases in the tunnel will get diluted and oxygen content will increase only when the bottom opening of the tunnel is well clear of the cargoes i.e. towards the completion of the discharge.

Incident No.2

1. The incident occurred as the victim entered Hold No. 4 for cleaning by the vertical ladder which was right but tried to exit from sealed Australian ladder without permission of the Chief Officer.
2. Without realizing and without taking any precautions, the stevedore person entered the hold no # 4 Australian ladder enclosed space where the atmosphere was oxygen deficient and rich in methane. Enclosed nature of Australian ladders makes them more difficult for personnel to escape from in the event of an accident. The absence of proper access points and ventilation

further exacerbates the risks associated with entering enclosed spaces, turning routine tasks into potential death traps.

Fig 3: Australian Ladder with enclosed dome

Figure 4: Location of incident with the helmet of the deceased

The Preliminary Investigation by this Directorate has revealed certain gaps in safety measures which may have contributed to the casualties. To prevent recurrence of such incidents in future, stakeholders are urged to consider the following suggestions and amend their Safety Procedures in Ports and shipboard Safety Management Systems (SMS) accordingly:

1. **Access Control:** Vessels shall ensure that all enclosed and restricted spaces are not accessed by shore personnel unless duly authorized by the shipboard personnel. Booby hatches of unused Cargo holds should be kept closed and locked. Accesses to shore personnel to enclosed spaces are to be authorized and controlled by ships personnel. All accesses should remain adequately marked for identifying the spaces they serve, especially when maintenance has been done on them.

2. **Interface with Shore Personnel**: Vessel to ensure adequate interface with shore personnel working on board, where all aspects of cargo operations are to be discussed with port representatives and agreed upon in a defined check-off list.

3. **Medical Equipment:** Vessel to ensure that necessary medical equipment to be arranged at an easily accessible place on the main deck. The supervisor of Stevedore agency shall verify and confirm such arrangement. In one instance, the ship's crew, although able to give CPR, were

unable to use an oxygen resuscitator. Proper training of the ship's crew is to be imparted in this regard.

4. **Enclosed Space Entry Procedures:** Depending on the cargo to be loaded / discharged, port representative/stevedore during the opening meeting agrees that all enclosed space entry procedures are complied with prior to entry into any enclosed spaces. Further, it is to be ensured that the vessel makes available necessary medical equipment at an easily accessible place on the main deck. All such areas are to be identified adequately marked by the ship's staff.

5. **Briefing to Shore Gang:** Port shall provide adequate briefing to the shore gang about the nature of cargo, restricted areas, danger involved in the enclosed spaces, cargo loading/discharge plan, etc. and instruct shore gang to not enter any restricted or enclosed space unless authorized by vessels staff.

6. **Medical Services:** Ports shall ensure that sufficient medical services and emergency para-medical personnel are available in discharge / loading berths.

7. **Training of Port Workers:** The Port shall ensure that the stevedores and port workers are adequately qualified and trained about the hazards of enclosed spaces and hazards of cargoes.

8. **Updated List of Stevedores:** Port shall ensure that updated list of stevedores entering on board each vessel shall be maintained ashore with the contact details of next of kin etc.

These recommendations are applicable to all vessels at Indian ports and all Indian ports. Any non-compliance with these guidelines will attract appropriate action. All the ports are required to develop and implement the Standard Operating Procedure and Safety Protocols for the Stevedores strictly to avoid recurrence of such incidents in future.

This is issued with the approval of the Competent Authority.

(Capt. Harinder Singh)
Nautical Surveyor and DDG (Tech.)

To,

All Ports & stakeholders through DGS website

This Marine Notice reminds ship owners, operators, masters, crews, recognized organizations, port authorities on inherent dangers posed by enclosed spaces onboard and need for adequate training for shore personnel who are engaged on board by port stevedores.

Brief particulars of the incident referred in the circular

	Incident 1	Incident 2
Name of Ship	RUI NING 21	ULUSOY - 11
IMO No	9595694	9586411
Flag	China	Turkey
Type of Ship	Bulk Carrier	Bulk Carrier
Year built	2010	2011
Gross tonnage	40913	43717
Owners / Managers	--	--
Classification Society	--	--
Cargo	Thermal Coal	Thermal Coal
Location of incident	Krishnapatnam Port	Paradip Port
Weather conditions	Slight/Calm	Slight/Calm
Date of incident	01/03/2024	23/04/2024
Type	Very serious Marine casualty	Very serious Marine casualty
No. of fatalities	02	01
Injury	0	0
Age	21 & 33	32
Nationality	Indian	Indian
Personnel involved	Stevedore	Stevedore
Nature of incident	Enclosed space entry	Enclosed space entry
Location	Inside cargo hold (No.5)	Inside cargo hold (No.4)