BSAFE

INCIDENT CASE STUDY

No.11 | SEPTEMBER 2021

SERIOUS INJURY WHILE SECURING CONTAINERS

THE *BOSTON TRADER*, A 9,528GT MULTIPURPOSE DRY CARGO SHIP BUILT IN 2004 (FIGURE 1), WAS MOORED IN THE PORT OF ORAN, ALGERIA. WHILE THE CREW WERE SECURING THE CONTAINERS LOADED ON DECK, A SEAFARER WAS HIT ON THE FOOT BY THE LOWER END OF A FALLING LASHING BAR, WHICH RESULTED IN A SERIOUS INJURY AND A TOE BEING AMPUTATED.

FIGURE 1 THE *BOSTON TRADER*
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

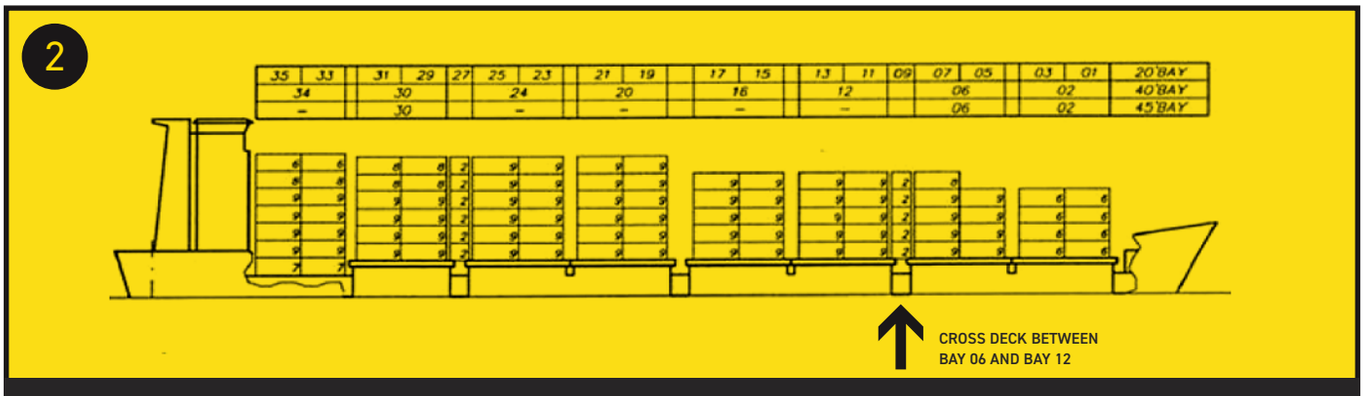

FIGURE 2 LOCATION OF THE INCIDENT: CROSS DECK BETWEEN BAY 06 AND BAY 12
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

WHAT HAPPENED

The *BOSTON TRADER* had been moored alongside the pier since 11 March 2019 and cargo operations were in progress. During the morning of 14 March 2019 the third officer (3/O), bosun (BSN) and two able bodied seamen (A/Bs) had been on watch since 0600. The BSN was keeping a watch on the ship's gangway, while one AB (AB1) was securing the containers loaded on deck and another (AB2) was on the pier checking and sealing containers about to be loaded. The weather was clear and the sea was calm with no swell being observed.

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WHAT HAPPENED (CONTINUED)

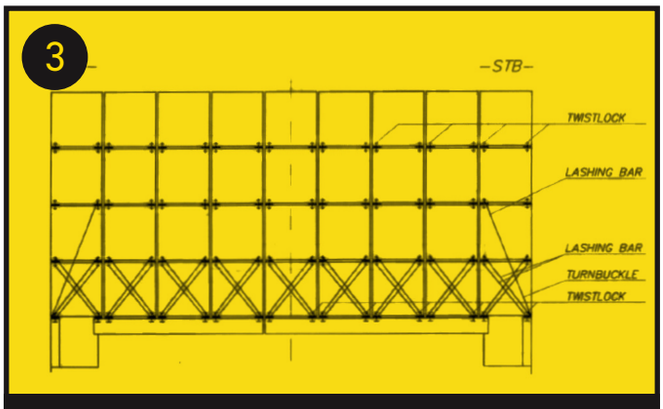

FIGURE 3 CONTAINER STOWAGE AND LASHING PLAN – BAY 06
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

FIGURE 4 HOOKING A LASHING BAR INTO A CORNER FITTING
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

The containers loaded on deck were secured in accordance with the Cargo Securing Manual, which required the containers stowed on the hatch cover of No. 2 cargo hold (Bay 06), in the vicinity of where the accident occurred **(FIGURE 2)**, to be secured as shown in **FIGURE 3**.

While the containers were being loaded, AB1 was positioned on the cross-deck between Bay 06 and Bay 12. The containers loaded on the third tier of the outboard ends had to be secured using a long lashing bar and tightened with a turnbuckle connected to it. The height of the long lashing bar was 5.07m and it was estimated to weigh more than 20kg.

The person securing the containers would usually have to step onto the hatch cover, using it as a pedestal, to hook the lashing bar into the corner fitting of the container **(FIGURE 4)**. Once hooked, the lashing bar would have to be brought diagonally across to be connected to the turnbuckle, which would then be screwed down to tighten the securing arrangement **(FIGURE 5)**.

A 40ft container was loaded in Bay 06 on the third tier, towards the outboard end of the starboard side of the ship. In order to secure it, AB1 stepped onto the hatch cover of cargo hold No. 2 and hooked up a long lashing bar into the corner fitting of the container. While holding the hooked-up lashing bar with one hand, he then stepped down from the hatch cover onto the cross deck in order to lift the turnbuckle with the other hand.

At this point the lashing bar slipped out from the container socket and fell vertically down onto his right foot. The bottom end of the lashing bar **(FIGURE 6)** cut through the safety footwear **(FIGURE 7)** and injured his foot.

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WHAT HAPPENED (CONTINUED)

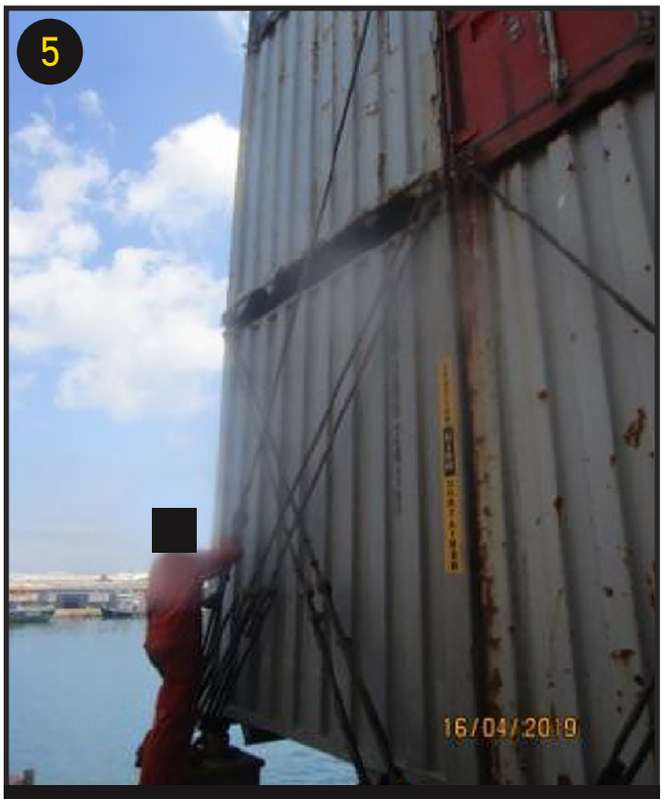

FIGURE 5 CONNECTING A LASHING BAR TO A TURNBUCKLE
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

The chief officer (C/O), along with the BSN, arrived at the location at 0851 and carried AB1 into the accommodation. The master informed the local agent of the accident and requested for emergency medical assistance, while the crew tried to stop the bleeding.

At 0858 the agent, along with the local port authorities and a medical team, arrived on board. The medical team immediately transferred AB1 to a hospital ashore where he underwent surgery with one toe being amputated. Two days after the surgery the injured AB was discharged from the hospital and repatriated.

The ship manning was in excess of the requirements of the Minimum Safe Manning Certificate. The injured AB had joined the ship three months earlier in December 2019. He had 19 years of seagoing experience, serving 14 of them at the rank of AB.

On the day of the incident the injured AB had six hours of rest before resuming his duty at 0600, which met the relevant requirements. The investigation did not consider drugs or alcohol to have contributed to this incident.

FIGURE 6 THE BOTTOM END OF THE LASHING BAR
FIGURE 7 THE SAFETY SHOE OF THE INJURED SEAFARER
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

FIGURE 8 UPPER END (HOOK) OF THE LASHING BAR
SOURCE: INVESTIGATION REPORT 04/2020 BY TRANSPORT MALTA

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LESSONS LEARNED

THE FOLLOWING LESSONS LEARNED HAVE BEEN IDENTIFIED. THESE ARE BASED ON THE INFORMATION AVAILABLE IN THE INVESTIGATION REPORT AND ARE NOT INTENDED TO APPORTION BLAME ON THE INDIVIDUALS OR COMPANY INVOLVED:

- **RISK CONTROL MEASURES** The risk assessment available for the securing of containers required certain risk control measures to be put in place in order to minimise the associated risks. The investigation was of the view that some of these measures were not actually in place at the time of the incident. The missing control measures included correct PPE and sufficient personnel.

- **CORRECT APPLICATION OF PPE** The injured seafarer may have either worn his safety footwear improperly, or his foot may have slipped out at the time of the incident. Although he was wearing the right PPE and the correct size, the effectiveness of the safety shoes could have been compromised. The part of the shoe which was struck by the lashing bar did not match with the position where the injury was sustained, which occurred in the part of the foot usually well protected by the steel toecap.

- **SUFFICIENT PERSONNEL FOR THE SECURING OF CONTAINERS** Although the crew members believed that the securing of loaded containers could be carried out by only one person, taking into account the design of the lashing bar and the securing arrangements, the investigation found that at least two persons were required to secure the containers: one to hold the hooked up lashing bar and the other to connect it to the turnbuckle lying flat on the hatch cover. With just one person, securing the containers on the third tier would have increased the risk of injury when the lashing bar was being lifted.

- **SLIPPING OF THE LASHING BAR FROM THE CORNER FITTING** The upper end of the lashing bar is shown in FIGURE 8. The sockets of corner fittings into which lashing bars are hooked are oval in shape. A lashing bar, such as the one being used by the injured seafarer, was designed to slip easily into the socket of the container and to lock into the socket, once the bar is rotated diagonally across and connected to the turnbuckle. In view of this design, if the lashing bar is left suspended vertically, it may slip out from the socket of the corner fitting, especially if it is not hooked correctly.

- **FAMILIARISATION WITH LASHING ARRANGEMENTS AND PROCEDURES** There were no records of any of the crew members being familiarised with the container securing procedures and arrangements of the ship. However, the injured seafarer had joined the ship three months prior to the incident and the ship regularly called at the port of Oran, where the securing of containers was always carried out by the crew members. The investigation did not consider the lack of records to mean an actual lack of familiarisation.

CONTACT

For more information on this incident email lossprevention@tindallriley.com

THIS CASE STUDY IS DRAWN FROM THE INVESTIGATION REPORT PUBLISHED BY THE TRANSPORT MALTA MARINE SAFETY INVESTIGATION UNIT AT:
https://mtip.gov.mt/en/msiu/Documents/MV Boston Trader_Final Safety Investigation Report.pdf

THE PURPOSE OF THIS CASE STUDY IS TO SUPPORT AND ENCOURAGE REFLECTIVE LEARNING. THE DETAILS OF THE CASE STUDY MAY BE BASED ON, BUT NOT NECESSARILY IDENTICAL TO, FACTS RELATING TO AN ACTUAL INCIDENT. ANY LESSONS LEARNED OR COMMENTS ARE NOT INTENDED TO APPORTION BLAME ON THE INDIVIDUALS OR COMPANY INVOLVED. ANY SUGGESTED PRACTICES MAY NOT NECESSARILY BE THE ONLY WAY OF ADDRESSING THE LESSONS LEARNED, AND SHOULD ALWAYS BE SUBJECT TO THE REQUIREMENTS OF ANY APPLICABLE INTERNATIONAL OR NATIONAL REGULATIONS, AS WELL AS A COMPANY'S OWN PROCEDURES AND POLICIES.