Australian Government
Australian Transport Safety Bureau

Serious injury to crew on board *Happy Buccaneer*

Port Hedland, Western Australia | 23 February 2015

Investigation

ATSB Transport Safety Report
Marine Occurrence Investigation
318-MO-2015-001
Final – 23 June 2015

Cover photo: Australian Maritime Safety Authority (AMSA)

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

Addendum

Page	Change	Date

The occurrence

A limited-scope, fact-gathering investigation into this occurrence was conducted in order to produce this short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.

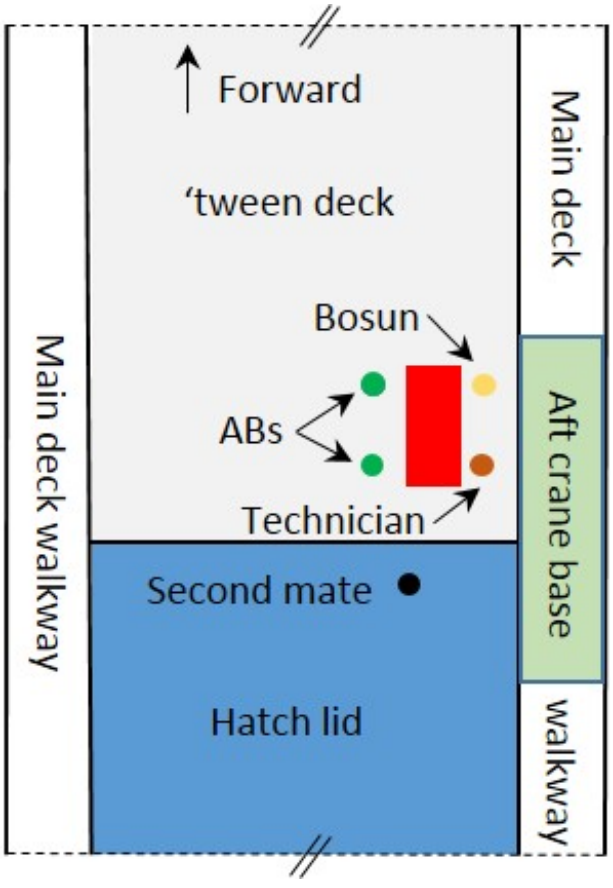
What happened

At 1455 (Western Standard Time) on 16 February 2015, *Happy Buccaneer* (cover) berthed at the Roy Hill Wharf, Port Hedland, which was under construction. On board were 47 modules for the wharf, with individual weights of up to 931 t. The larger modules could take up to 24 hours to lift off the ship and place into position on the wharf pilings.

At 1235 on 22 February, the fifth module had been placed in position. Later that afternoon, the ship was moved along the wharf, in preparation for a lift the next day and, at 1800, work for the day was stopped.

At 0600 on 23 February, the crew was tasked by the chief mate with clearing an area for stacking hatch covers in order to gain access to the next module. The work involved moving packs of load spreaders[1] from on top of the hatch covers to the 'tween deck.[2]

Figure 1: Positions of the crew.



Source: Australian Transport Safety Bureau (ATSB)

At 0630, after a tool box talk,[3] the crew started the work. Working with the second mate on deck were two able-bodied seamen (AB) tasked with hooking up the packs of load spreaders. The boatswain (bosun), the ship's technician and two Abs were on the 'tween deck (Figure 1), to position the packs and remove the sling hooks. All crew involved in the moving of the load spreaders had performed this task before and were familiar with the operation.

The second mate was operating the crane's[4] 25 t auxiliary hook using a wireless remote control unit. The remote allowed him to move around the area to maintain a good line of sight while lifting from the deck, and to move to the edge of the hatch opening when lowering the packs.

By about 0900, two packs of load spreaders had been moved and the third pack had been lowered to the 'tween deck. The two ABs removed their hooks and left the chain slings hanging against

---

1 For placing under very heavy loads, the steel load spreaders measured 4.0 x 1.2 x 0.3 m and weighed 2.4 t.

2 A 'tween deck is a fixed or moveable deck between the hold floor and the hatch cover.

3 A safety focussed discussion, undertaken by a work team before starting work, to cover key elements of the task and the risks involved.

4 A Huisman-Itrec, 700 t heavy lift, mast crane, which does not have an operator's cabin.

the side of the pack. They then moved clear, towards the centre of the hold.

The technician was having difficulty removing the sling hook on his corner so the bosun went to assist him. Once the sling hook had been freed, they began walking forward between the load spreaders and the side of the hold. As they walked, the bosun signalled to the second mate to raise the hook.

When the technician and the bosun were about half way along the side of load spreaders, the two ABs saw the topmost load spreader lift up and start to slide off the top of the pack. They shouted warnings to the second mate and the two men, however, there was not enough time for either of the men to move clear and they were both struck by the load spreader as it slid towards them.

On the bridge, the chief mate heard the loud noise of the load spreader falling. As he made his way to the 'tween deck he called the second mate on the radio and asked what had happened. When he got closer, he heard the cries of the injured men. He called the master, advised that there had been an accident and that medical assistance was required. The master asked the ship's agent, who was on board at the time, to arrange for medical assistance from ashore.

Figure 2: Fallen load spreader

Source: AMSA

When the chief mate arrived at the accident site, he saw the bosun and the technician lying in awkward positions on top of the load spreader (Figure 2). The technician's right leg was pinned under the load spreader and he had fractured both legs. The bosun was not trapped but had suffered fractures to his lower left leg. The chief mate updated the master as to the severity of the situation and began arranging first aid.

At about 0910, the first paramedics from McConnell Dowell, the company constructing the wharf, arrived. Shortly afterwards, other emergency service personnel from McConnell Dowell, the Fire and Emergency Service and St John Ambulance arrived.

The injured men were freed by the ship's crew with the assistance of shore personnel. Both were then stabilised and prepared for evacuation. At about 1005, the bosun was lifted ashore and taken to Port Hedland hospital. About 50 minutes later, the technician was lifted ashore and taken to the hospital.

Treatment for the leg fractures of both men required extensive orthopaedic surgery. The technician's right leg had to be amputated below the knee and he also had a fractured pelvis.

On 24 February, both men were transferred to a hospital in Perth. They continued to receive medical treatment there until they were well enough to travel home.

ATSB comment

The crew's usual practice was to lift the load spreaders as a pack of four by attaching the sling hooks to the bottom spreader. Timber was placed between each load spreader and the pack was not lashed or secured by any means as a single unit.

Figure 3: Hammerlock joining link

Source: AMSA

After releasing the chain hooks from the spreaders, the slings were left against the side of the pack. When raised, the chain hooks were dragged up the pack's side. In this instance, the hammerlock link (Figure 3), used to attach the sling's hook to the chain, probably caught on the lip of the topmost load spreader and lifted it to the point where it was able to slide sideways off the pack.

The crane's auxiliary hook winch was fitted with a soft start/stop feature to avoid shock loads. Therefore, when the remote control's lever was moved to the neutral position to stop the hook, it would take a few moments for the hook to slow and then stop. This feature meant the hook continued to lift the load spreader after the lever was placed in the stop position.

When the load spreader started sliding sideways, the bosun and technician were not clear of the pack. Further, their position between the pack and the side of the cargo hold restricted their ability to move away from the falling spreader.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Spliethoff's Bevrachtingskantoor

Spliethoff's Bevrachtingskantoor, *Happy Buccaneer*'s managers, advised that they have taken the following action to avoid a similar accident:

Additional (simulator) training and instruction will be given to crane operators with emphasis on:

- *Hook speed during simultaneous crane movements,* and that the crane shall not be moved until there has been clear communications by hand, radio or other method.
- Crane operators, banksmen (dogmen) and assisting crew should be aware of each other's location and movement of suspended loads.
- Rigging gear shall be guided until it is free of obstacles and equipment should be made safe for lifting prior to the lift.
- Lifts, formed of multiple loose items, will be combined and secured to form a single unit prior to lifting.

Safety message

Other than unintended falling / dropping, there are numerous other hazards associated with suspended load operations. Some of those hazards continue posing a serious injury risk even after the load is landed. Risks can be particularly high when the load comprises a number of unsecured components that can move as individual units. Lifting and handling procedures and practices should anticipate the hazards (through risk assessment) and be planned to minimise the associated risks.

The ATSB SafetyWatch program highlights the broad safety concerns that come from investigation findings and from the occurrence data reported by industry. Marine work practices are one of those safety concerns – www.atsb.gov.au/safetywatch/marine-work-practices.aspx

General details

Occurrence details

Date and time:	23 February 2015 – 0900 (UTC + 8)	
Occurrence category:	Accident	
Primary occurrence type:	Serious injury to two crew members	
Location:	Roy Hill Wharf, Port Hedland, Western Australia	
	Latitude: 20° 18.98' S	Longitude: 118° 34.40' E

Vessel details

Name:	*Happy Buccaneer*	Year built:	1984
IMO number:	8300389	Gross tonnage:	16,341
Flag:	Netherlands	Summer draught:	8.25 m
Classification society:	Lloyd's Register	Length overall:	145.90 m
Owner(s):	Happy Buccaneer Rederij, Netherlands	Moulded breadth:	28.30 m
Manager:	Spliethoff's Bevrachtingskantoor BV, Netherlands	Main engine(s):	2 x 6ZAL40 (3,825 kW each)

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Australian Transport Safety Bureau

Enquiries 1800 020 616
Notifications 1800 011 034
REPCON 1800 011 034
Web www.atsb.gov.au
Twitter @ATSBinfo
Email atsbinfo@atsb.gov.au

Investigation

ATSB Transport Safety Report
Serious injury to crew on board *Happy Buccaneer*
Port Hedland, Western Australia 23 February 2015

318-MO-2015-001
Final – 23 June 2015