



Australian Government

Australian Transport Safety Bureau

Fall from the pilot ladder on board the chemical tanker *Golden Concord*

Goods Island, Torres Strait | 4 July 2013



Investigation

ATSB Transport Safety Report

Marine Occurrence Investigation

301-MO-2013-008

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Cover photo: *Golden Concord* at Bluff, NZ reproduced with permission of Chris Howell, Southland Ship Stores

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Addendum

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Safety summary

What happened

On 4 July 2013, a coastal pilot was disembarking from the chemical tanker *Golden Concord* in the Torres Strait when the pilot ladder manrope he was holding appeared to give way. He was unable to establish a firm grip on the rope, lost his balance and fell to the deck of the pilot launch below.

The pilot did not sustain any serious injuries, as his fall was arrested by the deckhand on board the launch.

What the ATSB found

The ATSB identified that a number of risk controls designed to limit the likelihood of an error resulting in an accident had been compromised. These included: the use of a deck party on board the ship to assure the safety of the ladder and manropes, clear and standardised communication protocols between the pilot and the pilot launch crew and the provision of information to pilot launch crews to assist in recognising the correct pilot ladder arrangements for each pilot.

What's been done as a result

The ship's management company has revised its pilot transfer procedures to ensure that all transfers are conducted with a deck party consisting of a supervising officer and at least one deck rating. The company has also revised its procedures to ensure that the rigging and securing of pilot ladders and manropes are in accordance with the most recent international requirements.

The pilotage company has revised its procedures to incorporate the provision of information about the use of manropes to pilot launch crews on their approach to the ship. The procedures now specify that pilots and launch deckhands shall conduct a visual and manual check of pilot ladders and manropes prior to disembarking. Additionally, the company will reinforce the importance of adhering to the standard communication protocols specified in their safety management system.

Safety message

Pilot transfers by way of pilot ladders are routine, yet inherently risky operations. In order to minimise the risk to pilots, ship operators and pilotage companies need to ensure that clear and standardised procedures and communication protocols are implemented and followed.

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The occurrence

At 2150¹ on 30 June 2013, the 112 m chemical tanker *Golden Concord* (Figure 1) departed Gladstone, Queensland, bound for Lahad Datu, Malaysia. The ship was in ballast and its departure draughts were 3.34 m forward and 4.67 m aft, giving it a mean freeboard of about 6 m.

Figure 1: *Golden Concord*



Source: Bridge Valley (MarineTraffic.com)

Figure 2: Area map of the inner route



Source: ATSB

At 0020 on 1 July, the harbour pilot disembarked from the ship and the master set a course following the coastline towards Cairns, where a coastal pilot was to board the ship for its transit of the Inner route of the Great Barrier Reef (Figure 2).

The passage went as planned and, at 1716 on 2 July, a coastal pilot boarded the ship off Cairns. After an information exchange with the master, the pilot took over the conduct (con) of the ship following the Queensland Coastal Passage Plan.²

Conditions for the voyage were calm, and consequently the ship progressed faster than the pilot had anticipated in his passage planning. Due to the favourable conditions, the pilot was able to take regular and effective rest breaks during the less critical stages of the pilotage.

On the afternoon of 3 July, as the ship progressed towards the Goods Island pilot boarding ground in Torres Strait (10° 34.12' S 142° 04.36' E), it was clear to the pilot from the weather conditions, that he would disembark from the ship's starboard side.

¹ All times referred to in this report are local time, Coordinated Universal Time (UTC) + 10 hours.

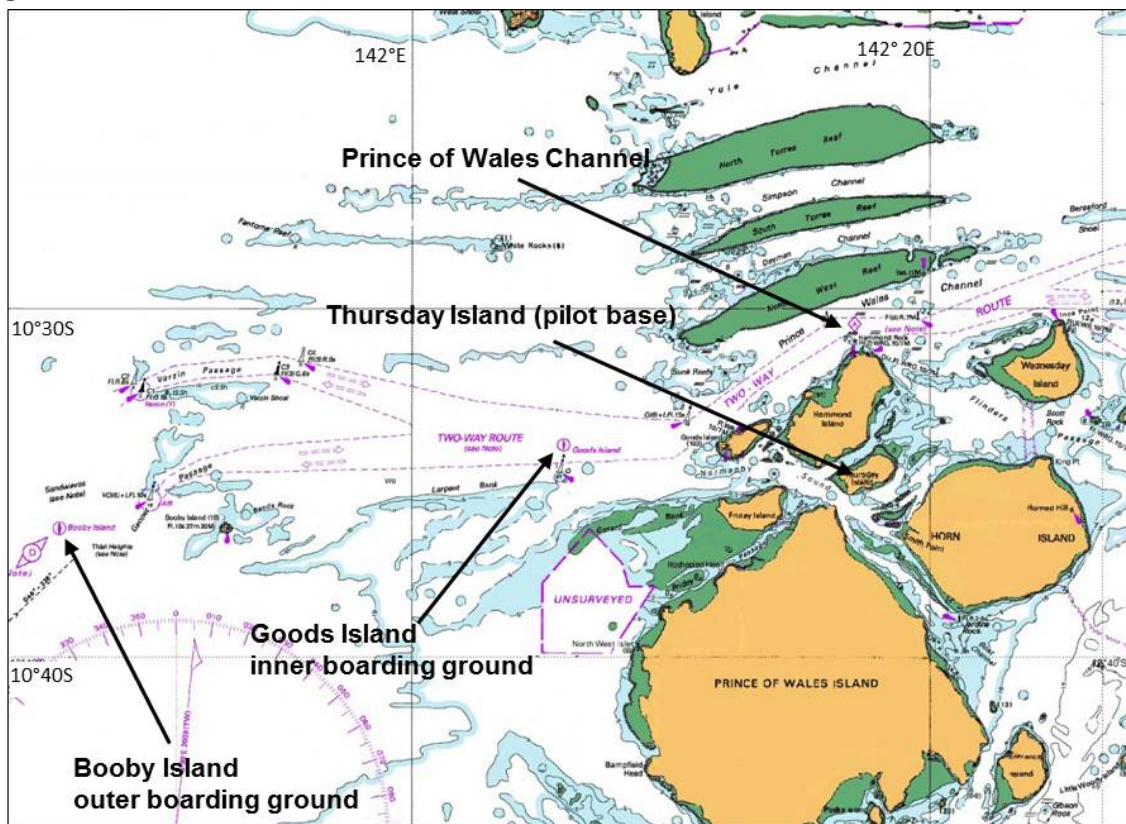
² Australian Maritime Safety Authority (2013). *Queensland Coastal Passage Plan*. www.amsa.gov.au/forms-and-publications/Publications/AMSA125-QCPP_Booklet.pdf

At about 1700, the pilot advised the master that the pilot ladder should be rigged on the starboard side. He asked that the ladder be rigged with two manropes. The crew then rigged the ladder and manropes as requested, while it was still light.

At about 0140 on 4 July, the pilot called the master of *Malu Bau*, the pilot launch, via very high frequency (VHF) radio. He confirmed the ship's arrival time at the pilot boarding ground and that the pilot ladder was rigged for a starboard side transfer. *Malu Bau*'s master noted the information provided by the pilot and confirmed that a ship's speed of 6 to 7 knots³ was required for the transfer, as was the usual practice.

Golden Concord was making good a speed of about 7 knots as it approached the pilot boarding ground (Figure 3) on a heading of 267° (T). Visibility was good, with a slight sea and low swell. The wind was from the southeast at 15 knots. It was not necessary for the ship's course to be altered to provide a lee for the transfer as its heading naturally created one.

Figure 3: Section of navigational chart AUS 700 showing the Goods Island pilot boarding ground, Torres Strait



Source: Australian Hydrographic Service with annotations by ATSB

At about 0234, the pilot passed the con to the master and advised the Great Barrier Reef Vessel Traffic Service (REEFVTS) that he was leaving the ship. He was then escorted from the bridge to the main deck by the second mate. The duty lookout remained on the bridge to assist the master.

When the pilot arrived at the starboard main deck disembarkation area, which was well illuminated by flood lights mounted on the bridge wing, he observed that there was no one other than the second mate in attendance to assist with the transfer. This was contrary to his expectation, so he asked the second mate why this was the case. In response, the second mate indicated that the crew were sleeping. The second mate then went about releasing the pilot ladder over the side of the ship. He visually checked that it was appropriately secured, and then held onto the stanchions while

³ One knot, or one nautical mile per hour equals 1.852 kilometres per hour.

he placed one foot and part of his body weight onto the top rung of the ladder. Meanwhile, the pilot tied his backpack onto a heaving line, so that it was ready to lower to the deck of *Malu Bau*.

Malu Bau was returning from another pilot transfer at the outer pilot boarding ground at Booby Island. The launch approached *Golden Concord* from the southwest, came around the ship's stern and was then manoeuvred alongside its starboard side. The launch master and deckhand saw that the pilot ladder was deployed, but they did not see any manropes.

The deckhand, who was tethered to a safety line, braced himself against the launch's forward rail and pulled on the pilot ladder. He then placed one foot and part of his body weight onto the ladder's bottom rung, to ensure that it was properly secured. The second mate then lowered the pilot's backpack to the launch, where the deckhand untied the backpack from the heaving line and tied the pilot's inflatable lifejacket to it. The lifejacket was then heaved on board the ship.

The pilot untied the lifejacket and began donning it, while the second mate lowered the pilot's bag to the launch. The deckhand then stowed the pilot's bags in the cabin of the launch, and the second mate deployed and checked the manropes.

As the deckhand returned his attention to the pilot ladder, he saw that the manropes had been deployed. The pilot then looked over the side of the ship towards the deckhand and commenced disembarking.

Figure 4. The pilot ladder laid out for inspection after the fall



Source: Dorval Ship Management

The pilot climbed onto the ladder and descended a few rungs while holding onto the stanchions. When his head was about in line with the ship's deck, he transferred his hand hold from the stanchions to the manropes. He grasped the aft manrope with his left hand. Then, as he grasped the forward manrope with his right hand, it felt like the rope gave way. The pilot lost his balance, as well as his grip on the two manropes. He fell backwards about 3 m to the deck of the launch, landing on his feet and in the arms of the deckhand.

The pilot was not seriously injured and was able to walk unassisted to the cabin of the launch. Shortly afterwards, *Golden Concord's* master made contact with the launch via VHF radio and confirmed the pilot's wellbeing. Having established that no assistance was required, he continued on his voyage.

Malu Bau's master set a course for Thursday Island (the location of the pilot base), and at 0320 the launch was safely berthed.

At about 0700 on 4 July, *Golden Concord's* master inspected the condition and rigging of the pilot ladder and manropes. The ladder, shackles, ropes and securing arrangements were found to be in good order (Figure 4).

Context

Golden Concord

At the time of this incident, *Golden Concord* was registered in Singapore and classed with Nippon Kaiji Kyokai (Class NK). The ship was owned by Marina Fatmarini Shipping, Singapore, and managed by Dorval Ship Management, Japan.

The ship's crew of 20 consisted of Korean, Chinese and Myanmar nationals, all of whom were appropriately qualified for the positions they held on board the ship.

The master had been employed by Dorval Ship Management since 1999 and had sailed in the position of master since 2003. He held a master class one certificate of competency, issued in Korea. He joined *Golden Concord* in April 2013.

The second mate had been employed by Dorval Ship Management since 2008 and had sailed in the position of second mate since 2012. He held a second mate's certificate of competency, issued in China. He joined *Golden Concord* in June 2013.

Malu Bau

Malu Bau was an 18 m aluminium pilot launch (Figure 5). It had a beam of 5.7 m, a depth of 1.8 m and was fitted with two Scania D113M diesel engines, each of which drove a water jet propulsion unit. At the time of this incident, the vessel was owned by Australian Reef Pilots (ARP) and registered in Queensland.

Figure 5: *Malu Bau*



Source: Australian Reef Pilots

The vessel's crew consisted of its master and a deckhand. The launch master held a master class five certificate of competency and had been employed as a launch master with ARP for about 3 months, of which 1 month was spent in training.

The deckhand had commenced employment with ARP on a casual basis about 14 months prior to this incident. He had worked as a deckhand for a period of about 6 months, before taking a 6 month break. He returned to work in the same role about 6 weeks prior to the incident.

On 3 July, both crew members started their shift at 2000. During the course of the 12 hour shift, they were scheduled to conduct six pilot transfers, four at the outer pilot boarding ground at Booby Island, and two at the inner boarding ground at Goods Island. Both crew members reported having obtained adequate sleep in the period leading up to the shift. While it was a relatively busy shift, there was no strong evidence to indicate that either crew member's performance was adversely affected by fatigue.

The pilot

The pilot commenced his employment as a pilot with ARP in October 2012, and qualified as a pilot for the Inner Route and Hydrographers Passage in March 2013. He was also regularly allocated work as a harbour pilot in Gove, Northern Territory. He held a master class one certificate of competency, issued in the United Kingdom, and before joining ARP had worked as a ship's master on board various English Channel ferries. During that 20 year period, he gained pilotage exemptions in a number of English Channel ports.

At the time of this incident, the pilot had just completed a 34 hour pilotage. It was 0240, an established period of reduced circadian performance. However, due to the favourable conditions of the voyage, he had been able to rest for about 15 hours. He worked 10 night-time hours and 9.5 daytime hours over the 34 hour voyage. At the time of the transfer, he had completed a period of about 4 hours continuous work, preceded by a 2 hour rest. This evidence indicates that the pilot's performance was not significantly fatigue impaired at the time of the event.

The fall

The pilot ladder and manropes were prepared in accordance with the requirements of the ship's safety management system (SMS) procedures on the afternoon of 3 July. This included fastening the manropes directly to the ship's railing (Figure 6).

Figure 6. Manrope securing arrangements



Source: Dorval Ship Management

On the morning of 4 July, neither the pilot nor the deckhand on board the launch observed the deployment of the manropes. Furthermore, the pilot did not check the ladder or manrope securing arrangements before he stepped onto the ladder.

When the deckhand finished stowing the pilot's bags he returned his attention to the pilot ladder and saw that the manropes had been deployed and the pilot was standing at the top of the ladder ready to start his descent.

When the pilot saw that the deckhand was looking back up at him, he stepped onto the ladder to disembark. As the pilot grasped the forward manrope, it felt like the rope gave way. He was unable to achieve a firm grip, lost his balance and fell to the deck of the launch below.

Safety analysis

The manropes

The ATSB considered a number of possible explanations for the pilot being unable to achieve a firm grip on the forward manrope. The evidence suggested two possible scenarios:

- a) when deployed, the rope had remained partially coiled on the deck or was caught up in the railing, and this error was not noticed by either the second mate or the pilot. When the pilot grasped the rope, that force caused the rope to fully deploy and come taut in the pilot's hand, causing him to lose his balance, or
- b) in a moment of diminished attention when transferring his hold from the stanchion to the rope, the pilot's grasp on the rope was not sufficient to achieve a firm grip, which then caused him to lose his balance.

The available evidence to determine the relative likelihood of each of these two possible explanations was inconclusive. The ATSB was unable to positively identify that the rope had remained partially coiled on deck or was caught up in the ship's railings. Similarly, there was no compelling evidence to support the contention that the pilot had been momentarily inattentive and became unbalanced as a result.

However, by considering both possible explanations, the investigation was able to establish the factors which might have prevented the fall.

Supervision of the pilot transfer

The International Maritime Organization's International Convention for the Safety of Life at Sea (SOLAS), sets out the minimum requirements for the safe embarkation and disembarkation of pilots via pilot ladders. In regard to the ship's crew's supervisory responsibilities, it states:

... the rigging of the pilot transfer arrangements and the embarkation of a pilot shall be supervised by a responsible officer having means of communication with the navigation bridge and who shall also arrange for the escort of the pilot by a safe route to and from the navigation bridge.⁴

When the pilot boarded *Golden Concord* off Cairns on 2 July, he was met by a deck party consisting of a deck officer and another crew member. However, when he was escorted from the bridge for disembarkation on 4 July, he was surprised to find that the second mate was not accompanied by another crew member to assist with the transfer. When the pilot queried the second mate about this, the second mate responded that the crew were all sleeping. Even though the pilot was somewhat uncomfortable with this arrangement, he did not pursue this issue further with either the second mate or the master.

The ship's safety management system (SMS) included procedures for pilot embarkation and disembarkation, documented in the Navigation Manual and the Health, Safety and Environmental (HSE) Manual. The following special precautions were documented for when underway:

- A responsible Deck Officer must always supervise the embarking or disembarking of pilots or any other personnel.
- He shall be positioned at the head of pilot ladder in order to inspect the boarding arrangements prior to embarking/disembarking and to assist the Pilot or any other personnel. He must be in continuous communication with the Navigation Bridge via hand held radio.

⁴ International Maritime Organisation, Maritime Safety Committee, *Resolution MSC.308 (88) Annex 2*. (adopted 3 Dec 2010). Available from: www.imo.org/blast/blastDataHelper.asp?data_id=30459

- Good lee and suitable vessel speed are pre-requisite for safe pilot boarding.⁵

Neither SOLAS nor the ship's procedure explicitly stated a requirement for additional crew members to be present to assist the supervising officer to effect the pilot disembarkation, either during daylight hours or at night. However, additional crew members are implied by the procedures, including statements such as, 'during night time, the supervising Officer and deck rating are to be equipped with Ex-proof flashlights', and further, 'the supervising Officer should be well on time (to) inspect and confirm to the Master that the pilot boarding arrangement is suitably prepared and rigged.'⁶

While the ship's procedures did not explicitly include any stated responsibilities of a deck party attending to the pilot transfer, the implication was that the supervising officer was to inspect and confirm the work of another crew member when preparing the pilot boarding arrangements.

The use of a deck party in addition to a supervising officer provides an additional defence against human error. It permits what amounts to an independent inspection of work; an extra opportunity for error to be identified before it leads to an accident.

The importance of the deck party has been emphasised by the International Marine Pilots Association (2012), which states, 'a pilot who has climbed a sound ladder, well rigged, and attended by an officer and deck party will be in the right frame of mind to give his best attention to the safety of the vessel.'⁷ Armstrong (2012) also writes 'there must be a responsible officer at the pilot ladder to look after the safety of the pilot. There should be at least one other person who can adjust the ladder if necessary and to pass the heaving line or safety line if required. It is also important that a responsible officer supervises the preparation of the pilot ladder and ensures it is in order before the pilot uses it.'⁸

In this instance, the second mate checked for himself that the ladder and manropes were deployed correctly. Had there been additional crew members present, responsible for the deployment of the pilot ladder and manropes as well as the transfer of items via the heaving line, this would have permitted the second mate to focus his attention on supervision and inspection, thus increasing the likelihood that any error in the deployment of the ropes or ladder would be detected.

ARP procedures and guidance

While SOLAS requires the ship to ensure appropriate transfer arrangements are provided and supervised, the final responsibility for ensuring the safety of the ladder for either embarkation or disembarkation is assigned to the pilot. ARP recognises this responsibility in its work instruction on pilot transfer operations,⁹ where it states 'pilots are responsible for deciding if it is safe to embark or disembark a vessel.' However, ARP also provides additional controls by way of extra checks conducted in combination with the launch crew to assist the pilot in making that assessment.

On arrival at the ship, ARP launch masters are required to check that the pilot ladder is rigged in accordance with SOLAS requirements, and at the appropriate height. Furthermore, the deckhand is required to check that the pilot ladder and manropes are secured by applying their weight to the ladder and pulling on the ropes as a practical test. While carrying out this test, the deckhand is tethered to a safety line and braces against the launch's forward rail.

⁵ Dorval Ship Management KK (Sep 2011). *Health Safety and Environment Manual, HSE 4, Section 1. 04.01.02 Safe Access to and From the Vessel.*

⁶ Dorval Ship Management KK (Sep 2011). *Navigation Manual, Section 2. Hazardous Navigational Procedures, 03.02.01 Navigation with Pilot Onboard.*

⁷ International Chamber of Shipping and International Maritime Pilots Association (2012). *Shipping Industry Guidance on Pilot Transfer Arrangements. Ensuring Compliance with SOLAS (2nd ed).* Marisec Publications: London. Available from: www.impahq.org/admin/resources/pilottransferarrangementsbrochure.pdf

⁸ Armstrong, M.C. (2012). *Pilot Ladder Safety (6th ed.).* Brown, Son and Ferguson: Glasgow. p31.

⁹ Australian Reef Pilots (Jun 2012). *Boat Operations – Pilot Transfer. Work Instruction No. 06, Issue 7, Section 4.5 Pilot Landing.*

On this occasion, the deckhand checked the ladder by pulling on it and stepping onto the lowest rung. However, the manropes had not yet been deployed before the transfer of the pilot's belongings commenced. After receiving the pilot's bags and sending the lifejacket up to the ship via the heaving line, the deckhand stowed the pilot's bags, and then positioned himself at the base of the ladder in preparation for the pilot's descent.

ARP's procedure goes on to state that 'before stepping onto the ladder, each disembarking pilot is to await signal from the pilot boat deckhand. In the case of vessels with low freeboard, voice signal may be sufficient, otherwise a thumbs up signal is to be used by the deckhand to indicate the boat crew is ready to receive the pilot.'

In this case, voice communications may have sufficed. However, neither voice nor hand signal confirmation was exchanged between the pilot and the deckhand before the pilot commenced his descent. Had the pilot waited for such verification from the deckhand, as per the ARP procedure, it would have provided the deckhand with an opportunity to check the now deployed manropes. Similarly, had the deckhand signalled or called out to the pilot to wait so that he could check the ropes, this would also have slowed the process and permitted all of the necessary checks to occur.

Finally, ARP procedures also require pilots to 'ensure that the ladder is secured before disembarking.' The procedure does not specify that the pilot is to personally check the securing arrangements and that the ladder and manropes have been fully deployed, and the development of some reliance on the supervising officer's and the deckhand's checks would be a normal behavioural adaptation for pilots, reinforced by numerous uneventful transfers. However, the inclusion of an additional personal check by the pilot would provide an extra risk control to prevent such an occurrence.

Communication of requirements for manropes

SOLAS specifies that

...manropes of not less than 28 mm and not more than 32 mm in diameter be properly secured to the ship if required by the pilot. The manropes shall be fixed at the rope end to the ring plate fixed on deck and shall be ready for use when the pilot disembarks, or upon request from a pilot approaching to board.¹⁰

Because individual pilots have differing preferences regarding the use of manropes, experienced pilot launch crews are accustomed to arriving at a ship to effect a transfer where there may or may not be manropes deployed.

On this occasion, when the launch crew arrived at *Golden Concord*, both the launch master and the deckhand observed the ladder, but no manropes. Both then assumed that this pilot's personal preference was for no manropes. The deckhand then checked that the ladder was secure, not expecting that the manropes would be deployed at a later stage.

Had the launch crew been made aware that the pilot did require manropes, this information would have enabled them to anticipate the deployment of the manropes, and the subsequent requirement for checking the ropes before commencing the transfer of the pilot's belongings and the lifejacket.

ARP's procedure required that pilot ladder arrangements be reconfirmed with the launch master on approach to the pilot boarding ground. This included the side of the transfer and the ladder height. In practice, this communication did not usually include reference to manropes. However, given the variance of individual pilot requirements, inclusion of information about the use of manropes would improve the launch crew's capacity to recognise arrangements which do not meet the pilot's requirements on arrival alongside the ship.

¹⁰ International Maritime Organisation, Maritime Safety Committee, *Resolution MSC.308 (88) Annex 2*. (adopted 3 Dec 2010). Available from: www.imo.org/blast/blastDataHelper.asp?data_id=30459

Manrope securing arrangements

During the course of the investigation, the ATSB identified that it was routine for *Golden Concord*'s pilot ladder manropes to be secured directly to the ship's hand railing (Figure 6). This arrangement was in accordance with the requirements of the ship's SMS.

In 2010, the adoption of IMO MSC Resolution 308(88)¹¹ introduced changes to SOLAS to, amongst other things, improve the safety of pilot transfers. As part of these changes, SOLAS was amended to incorporate a requirement for manropes to reach the top of the stanchions or bulwark, and that they be secured at the rope end to a ring plate fixed to the deck. Previous to these changes, pilots had expressed concern with the practice of securing manropes at deck level.¹²

While the rigging of the manropes on board *Golden Concord* met the requirements for the reach of the manropes, the ship's SMS procedures had not been updated to reflect the SOLAS requirement that manropes be secured to the deck.

¹¹ International Maritime Organisation, Maritime Safety Committee, *Resolution MSC.308 (88) Annex 2*. (adopted 3 Dec 2010). Available from: www.imo.org/blast/blastDataHelper.asp?data_id=30459

¹² Amos, A. (2013). *Safe Pilot Transfers at Sea by the use of Traditional Pilot Ladder Methods. A Review of the SOLAS Chapter V, Regulation 23 and IMO Resolution A.1045 (27)*. Available from: www.amosmarineservices.com.au/

Findings

On 4 July 2013, a coastal pilot was disembarking from the chemical tanker *Golden Concord* in the Torres Strait when the pilot ladder manrope he was holding appeared to give way. He was unable to establish a firm grip on the rope, lost his balance and fell to the deck of the pilot launch below.

From the evidence available, the following findings are made with respect to the incident. These findings should not be read as apportioning blame or liability to any particular organisation or individual.

Safety issues, or system problems, are highlighted in bold to emphasise their importance. A safety issue is an event or condition that increases safety risk and (a) can reasonably be regarded as having the potential to adversely affect the safety of future operations, and (b) is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operating environment at a specific point in time.

Contributing factors

- As the pilot transferred his grip from the stanchions to the manropes, he was unable to achieve a firm grip on the forward manrope. While the reasons for this are unclear, appropriate checks of the manropes had not been performed by either the pilot or the deckhand of the pilot launch.
- **The pilotage company's procedures did not explicitly require the pilot to check the pilot ladder and manrope arrangements before disembarking the ship. [Safety issue]**
- **The pilotage company's procedures for positive communication of readiness between the pilot and the launch crew were adequate. However, it was common for employees to vary these communication protocols, leaving perceptions of readiness open to error and misinterpretation. [Safety Issue]**

Other factors that increase risk

- **The ship's pilot transfer procedures did not specify a requirement for additional crew members to assist the supervising officer. As a result, the supervising officer was actively involved in deploying the pilot ladder and manropes, and transferring the pilot's belongings to the launch. This compromised his ability to focus on properly checking the arrangements and supervising the transfer. [Safety issue]**
- The variation in individual pilots' use of manropes meant that launch crews could not easily identify whether the arrangements met the requirements of the pilot on arrival at the ship.
- **The pilotage company's procedures did not require the pilot to inform the launch crew whether manropes would or would not be deployed in advance of the transfer. [Safety issue]**
- **The ship's pilot transfer procedures had not been revised to incorporate the most recent SOLAS requirements that manropes be secured at the rope end to a ring plate fixed to the deck. [Safety Issue]**

Safety issues and actions

The safety issues identified during this investigation are listed in the Findings and Safety issues and actions sections of this report. The Australian Transport Safety Bureau (ATSB) expects that all safety issues identified by the investigation should be addressed by the relevant organisation(s). In addressing those issues, the ATSB prefers to encourage relevant organisation(s) to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

Depending on the level of risk of the safety issue, the extent of corrective action taken by the relevant organisation, or the desirability of directing a broad safety message to the marine industry, the ATSB may issue safety recommendations or safety advisory notices as part of the final report.

Visual and manual checking of ladder and manropes by pilots

Number:	MO-2013-008-SI-01
Issue owner:	Australian Reef Pilots
Type of operation:	Marine: Shipboard operations
Who it affects:	Pilotage companies

Safety issue description:

The pilotage company's procedures did not explicitly require the pilot to check the pilot ladder and manrope arrangements before disembarking the ship.

Proactive safety action taken by: Australian Reef Pilots

Australian Reef Pilots advised the ATSB that it has modified its written procedures and commenced a training program 'to ensure that both pilots and deckhands check the condition, configuration and state of deployment of pilot ladders prior to the pilot embarking or disembarking by such ladders.'

ATSB comment:

The ATSB is satisfied that the action taken by Australian Reef Pilots will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed.

Justification: The ATSB is satisfied that the actions taken by Australian Reef Pilots since the incident satisfactorily address the safety issue.

Communication of readiness for pilot disembarkation

Number:	MO-2013-008-SI-02
Issue owner:	Australian Reef Pilots
Type of operation:	Marine: Shipboard operations
Who it affects:	Pilotage companies

Safety issue description:

The pilotage company's procedures for positive communication of readiness between the pilot and the launch crew were adequate. However, it was common for employees to vary these communication protocols, leaving perceptions of readiness open to error and misinterpretation.

Proactive safety action taken by: Australian Reef Pilots

Australian Reef Pilots advised the ATSB that it has commenced a training program to 'ensure that both pilots and boat crew follow our documented communication protocols prior to pilots disembarking by pilot ladders.'

ATSB comment:

The ATSB is satisfied that the action taken by Australian Reef Pilots will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed.

Justification: The ATSB is satisfied that the actions taken by Australian Reef Pilots since the incident satisfactorily address the safety issue.

Use of a deck party to assist with the pilot transfer

Number:	MO-2013-008-SI-03
Issue owner:	Dorval Ship Management
Type of operation:	Marine: Shipboard operations
Who it affects:	Owners and operators of ships employing coastal pilots.

Safety issue description:

The ship's pilot transfer procedures did not specify a requirement for additional crew members to assist the supervising officer. As a result, the supervising officer was actively involved in deploying the pilot ladder and manropes, and transferring the pilot's belongings to the launch, and could not focus his efforts on properly checking the arrangements and supervising the transfer.

Proactive safety action taken by Dorval Ship Management

Dorval Ship Management advised the ATSB that in response to this incident, it has revised its navigation manual procedures for the conduct of pilot transfers to include the mandatory use of a deck party consisting of a supervising officer and at least one other crew member for all transfers, day or night, as follows:

There shall always be one (1) seaman (deck rating) at stand-by to assist the OOW during pilot boarding / disembarkation.

Additionally, Dorval Ship Management has incorporated a requirement specifically for the assurance of the correct deployment of the pilot ladder and manropes into its navigation manual procedures, as follows:

The OOW and deck rating must always ensure that manropes are not partially coiled on deck immediately before pilot's boarding / disembarkation and shall confirm by pulling that they are made well tight and secure.

ATSB comment:

The ATSB is satisfied that the action taken by Dorval Ship Management will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed.

Justification: The ATSB is satisfied that the actions taken by Dorval Ship Management since the incident satisfactorily address the safety issue.

Communication of requirements for manropes

Number:	MO-2013-008-SI-04
Issue owner:	Australian Reef Pilots
Type of operation:	Marine: Shipboard operations
Who it affects:	Pilotage companies

Safety issue description:

The pilotage company's procedures did not require pilots to inform launch crews whether manropes would or would not be deployed in advance of the transfer.

Proactive safety action taken by: Australian Reef Pilots

Australian Reef Pilots advised the ATSB that it has modified its written procedures and commenced a training program to 'ensure that pilots communicate via VHF radio to the pilot launch crew prior to disembarkation, notifying them whether manropes will or will not be deployed.'

ATSB comment:

The ATSB is satisfied that the action taken by Australian Reef Pilots will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed.

Justification: The ATSB is satisfied that the actions taken by Australian Reef Pilots since the incident satisfactorily address the safety issue.

Securing of manropes to the deck

Number:	MO-2013-008-SI-05
Issue owner:	Dorval Ship Management
Type of operation:	Marine: Shipboard operations
Who it affects:	Owners and operators of ships employing coastal pilots.

Safety issue description:

The ship's pilot transfer procedures had not been revised to incorporate the most recent SOLAS requirements that manropes be secured at the rope end to a ring plate fixed to the deck.

Proactive safety action taken by: Dorval Ship Management

Dorval Ship Management has advised that it has revised its navigation manual procedures for pilot transfer to ensure that the securing of manropes is in accordance with SOLAS recommendations, as follows:

The supervising Officer shall always inspect and confirm to the Master that the pilot transfer arrangements are properly rigged and considered safe immediately prior to each pilot boarding / disembarkation by observing at least the following:

...b) proper securing of the pilot ladder ends to strong dedicated point on deck (fixed ring plates)

and further

...g) availability and proper securing of two 28mm manila ropes on each side of the pilot ladders (if required by the Pilot) - the ends of manropes shall always be made tight to the provided ring plates fixed on deck and shall reach the height of the stanchions or bulwarks at the point of access to the deck before terminating at the ring plate on deck...

ATSB comment:

The ATSB is satisfied that the action taken by Dorval Ship Management will adequately address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed.

Justification: The ATSB is satisfied that the actions taken by Dorval Ship Management since the incident satisfactorily address the safety issue.

General details

Occurrence details

Date and time:	04 July 2013 – 0240 UTC +10	
Occurrence category:	Incident	
Primary occurrence type:	Equipment Failure	
Location:	Goods Island, Torres Strait	
	Latitude: 10° 34.12' S	Longitude: 142° 04.36' E

Ship details

Ship name:	Golden Concord
IMO number	9274006
Call sign	S6AG6
Flag	Singapore
Classification society	Nippon Kaiji Kyokai
Ship type	Chemical Tanker
Builder	Shatano Shipyard, Japan
Year built	2003
Owners	Marina Fatmarini Shipping, Singapore
Operators	Dorval Ship Management, Japan
Manager	Dorval Ship Management, Japan
Gross tonnage	5,367
Deadweight (summer)	8,578.29 t
Summer draught	7.613 m
Length overall	112.00 m
Moulded breadth	18.70 m
Moulded depth	10.00 m
Main engine	Akasaka DIESEL 6UEC33LSII
Total power	3,400 kw
Speed	13.0 knots

Sources and submissions

Sources of information

Written statements of Golden Concord's master and second mate were provided by Dorval Ship Management, as were photographs and copies of relevant documents including log books, statutory certificates, reports, manuals and procedures.

Between 31 July and 02 Aug 2013, investigators attended Australian Reef Pilots' Thursday Island base, Torres Strait, Queensland. The pilot and directly involved launch crew members were interviewed and each provided their account of the incident. Non-involved launch crew members were also interviewed. Photographs and copies of relevant documents were obtained, including log books, statutory certificates, reports, manuals and procedures.

References

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Armstrong, M.C. (2012). *Pilot Ladder Safety* (6th ed.). Brown, Son and Ferguson: Glasgow.

Australian Maritime Safety Authority (2013). *Queensland Coastal Passage Plan*. Available from: www.amsa.gov.au/forms-and-publications/Publications/AMSA125-QCPP_Booklet.pdf

Australian Reef Pilots (Jun 2012). *Boat Operations – Pilot Transfer. Work Instruction No. 06, Issue 7, Section 4.5 Pilot Landing*.

Dorval Ship Management KK (Sep 2011). *Health Safety and Environment Manual, HSE 4, Section 1.04.01.02 Safe Access to and From the Vessel*.

Dorval Ship Management KK (Sep 2011). *Navigation Manual, Section 2 Hazardous Navigational Procedures, 03.02.01 Navigation with Pilot Onboard*.

International Chamber of Shipping & International Maritime Pilots Association (2012). *Shipping Industry Guidance on Pilot Transfer Arrangements. Ensuring Compliance with SOLAS* (2nd ed). Marisec Publications: London. Available from: www.impahq.org/admin/resources/pilottransferarrangementsbrochure.pdf

International Maritime Organisation, Maritime Safety Committee, *Resolution MSC.308 (88) Annex 2*. (adopted 3 Dec 2010). Available from: www.imo.org/blast/blastDataHelper.asp?data_id=30459

Submissions

Under Part 4, Division 2 (Investigation Reports), Section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. Section 26 (1) (a) of the Act allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to Dorval Shipping, *Golden Concord's* master and second mate, Australian Reef Pilots, the pilot and *Malu Bau's* launch master and deckhand, Australian Maritime Safety Authority, and Maritime Safety Queensland.

Submissions were received from Dorval Ship Management and from Australian Reef Pilots. Submissions from those parties were reviewed and where considered appropriate, the text of the draft report was amended accordingly.

Australian Transport Safety Bureau

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; 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 fare-paying 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.

Purpose of safety investigations

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

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. 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.

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to initiate proactive safety action that addresses safety issues. Nevertheless, the ATSB may use its power to make a formal safety recommendation either during or at the end of an investigation, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation.

When safety recommendations are issued, they focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on a preferred method of corrective action. As with equivalent overseas organisations, the ATSB has no power to enforce the implementation of its recommendations. It is a matter for the body to which an ATSB recommendation is directed to assess the costs and benefits of any particular means of addressing a safety issue.

When the ATSB issues a safety recommendation to a person, organisation or agency, they must provide a written response within 90 days. That response must indicate whether they accept the recommendation, any reasons for not accepting part or all of the recommendation, and details of any proposed safety action to give effect to the recommendation.

The ATSB can also issue safety advisory notices suggesting that an organisation or an industry sector consider a safety issue and take action where it believes it appropriate. There is no requirement for a formal response to an advisory notice, although the ATSB will publish any response it receives.

Australian Transport Safety Bureau

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Investigation

ATSB Transport Safety Report Marine Occurrence Investigation

Fall from the pilot ladder on board the chemical tanker,
Golden Concord, Goods Island, Torres Strait, 4 July 2013

301-MO-2013-008

Final – 20 March 2014