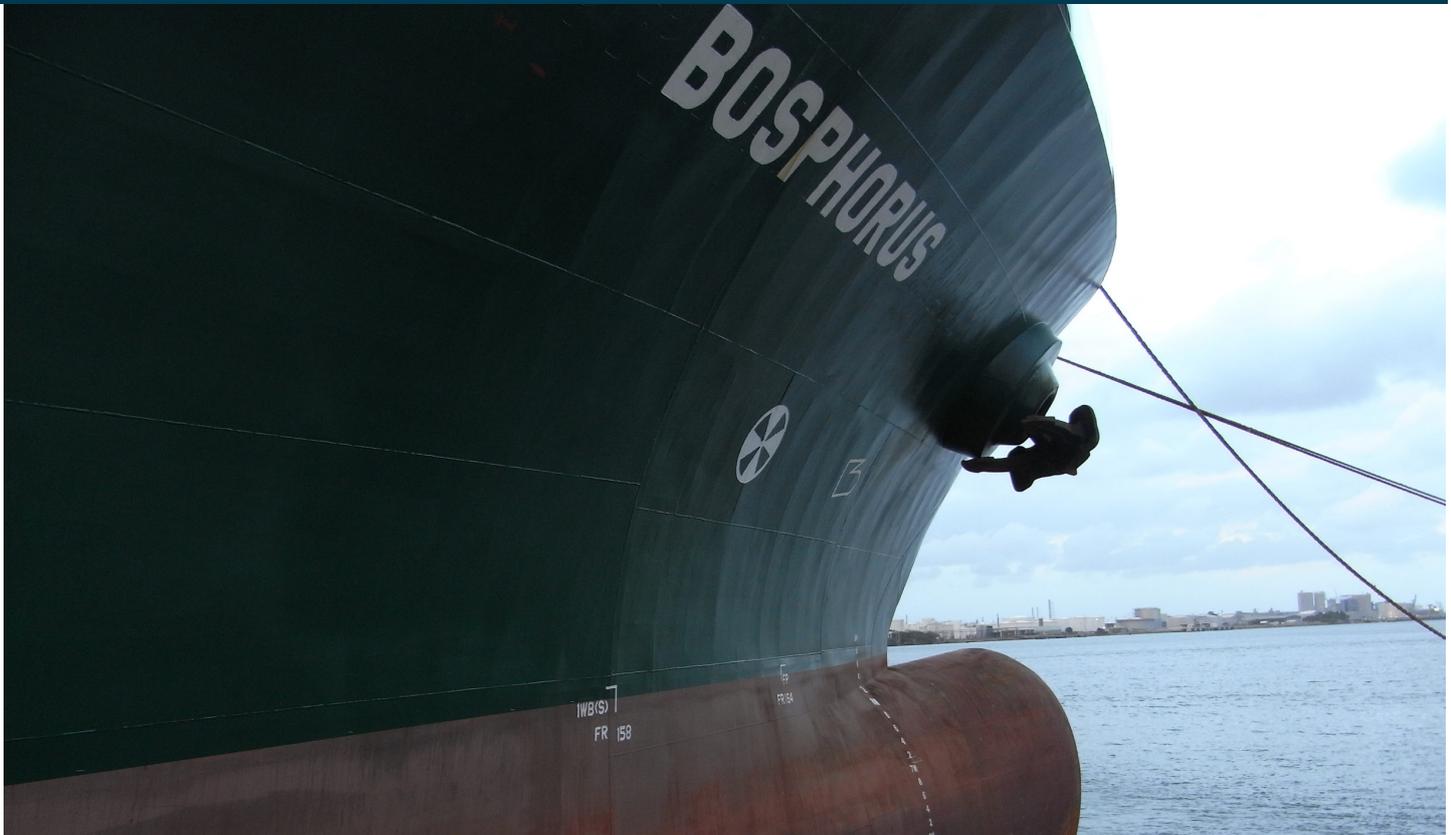




Australian Government
Australian Transport Safety Bureau

Grounding of *Bosphorus*

Brisbane River, Queensland | 29 October 2013



Investigation

ATSB Transport Safety Report
Marine Occurrence Investigation
304-MO-2013-011
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Addendum

Page	Change	Date

Safety summary

What happened

At about 2000 on 29 October 2013, the general cargo ship *Bosphorus* grounded at Lytton Rocks Reach in the Brisbane River after the ship's helmsman unintentionally put the helm the wrong way.

By the time that the Brisbane Marine Pilot on board the ship realised that the helm had gone the wrong way, it was too late to prevent the ship from grounding in the narrow section of the river. There were no reported injuries, damage or pollution as a result of the grounding.

What the ATSB found

The ATSB's investigation found that the application of incorrect helm was not identified by the ship's crew and that the ship's safety management system documentation provided no guidance in relation to the allocation of function based roles and responsibilities to members of the bridge team during pilotage.

The investigation also found that the navigational watch was handed over at a critical point of the pilotage and the risks associated with this change were not considered. Furthermore, neither the ship's safety management system nor the Brisbane Marine Pilots' passage plan detailed any guidance or instructions relating to handing over the watch or helmsman during high risk areas of the pilotage.

What's been done as a result

Brisbane Marine Pilots has amended their safety management system procedures to address all of the contributing factors specific to pilotage issues detailed in this report. Their risk management team has amended the passage plan specifically related to watch hand overs and changing of the helmsman.

Safety message

While functional roles and responsibilities should always be clearly assigned to each bridge team member, the pilot, the master and the officer of the watch should all check the rudder angle indicator before and after each helm order.

Contents

The occurrence	1
Context	5
<i>Bosphorus</i>	5
The Crew	5
Port of Brisbane	5
Pilotage	5
Safety analysis	6
Helmsman's actions - attentional disengagement (mind wandering)	6
Helm orders and monitoring	6
Bridge Resource Management	7
Roles and Responsibilities	7
Navigation watch handover	8
Findings	10
Contributing factors	10
Safety issues and actions	11
Roles and Responsibilities	11
Safety issue description:	11
High risk areas of pilotage	11
Safety issue description:	12
Current status of the safety issue:	12
High risk areas of pilotage	12
Safety issue description:	12
General details	14
Occurrence details	14
<i>Bosphorus</i>	14
Sources and submissions	15
Sources of information	15
References	15
Submissions	15
Australian Transport Safety Bureau	16
Purpose of safety investigations	16
Developing safety action	16

The occurrence

At 1755¹ on 28 October 2013, the 129 m general cargo ship *Bosphorus* (Figure 1) departed the Port of Gladstone, Queensland, bound for Brisbane, Queensland.

Figure 1: *Bosphorus*



Source: ATSB

At 1530 on 29 October, the ship approached the Brisbane pilot boarding ground. The bridge team consisted of the master, chief mate, as officer of the watch (OOW), and a seaman acting as the helmsman.

At 1609, a Brisbane marine pilot was embarked for the inbound transit of Moreton Bay, the Brisbane River and to the berth. The master and pilot exchanged information regarding the ship, the inward passage and the berthing manoeuvre and they agreed on the passage plan.

The pilot took the conduct of the ship and then completed setting up his portable pilot unit (PPU). The master moved to the bridge office on the starboard side of the bridge to undertake other administrative duties.

The passage proceeded in hand steering with the chief mate monitoring the ship's position from his seat in front of the port radar. The ship transited the bay without incident.

On approach to the Brisbane River, the master assumed his seat in the chair in front of the starboard radar. The pilot was standing to the starboard side, in between the bridge control console and the table on which his PPU was located.

At 1934, as *Bosphorus* was transiting the entrance channel and approaching the Outer Bar Reach the helmsman was relieved by another seaman. The new helmsman confirmed the ship's course with the pilot. About a minute later, the ship began to veer to starboard (Figure 2). The pilot immediately noticed the change in heading and issued a number of helm orders to bring the ship back onto course.

At about 1950, the third mate came to the bridge to familiarise himself with the situation prior to proceeding to the forward mooring station in about 30 minutes for the ship's berthing.

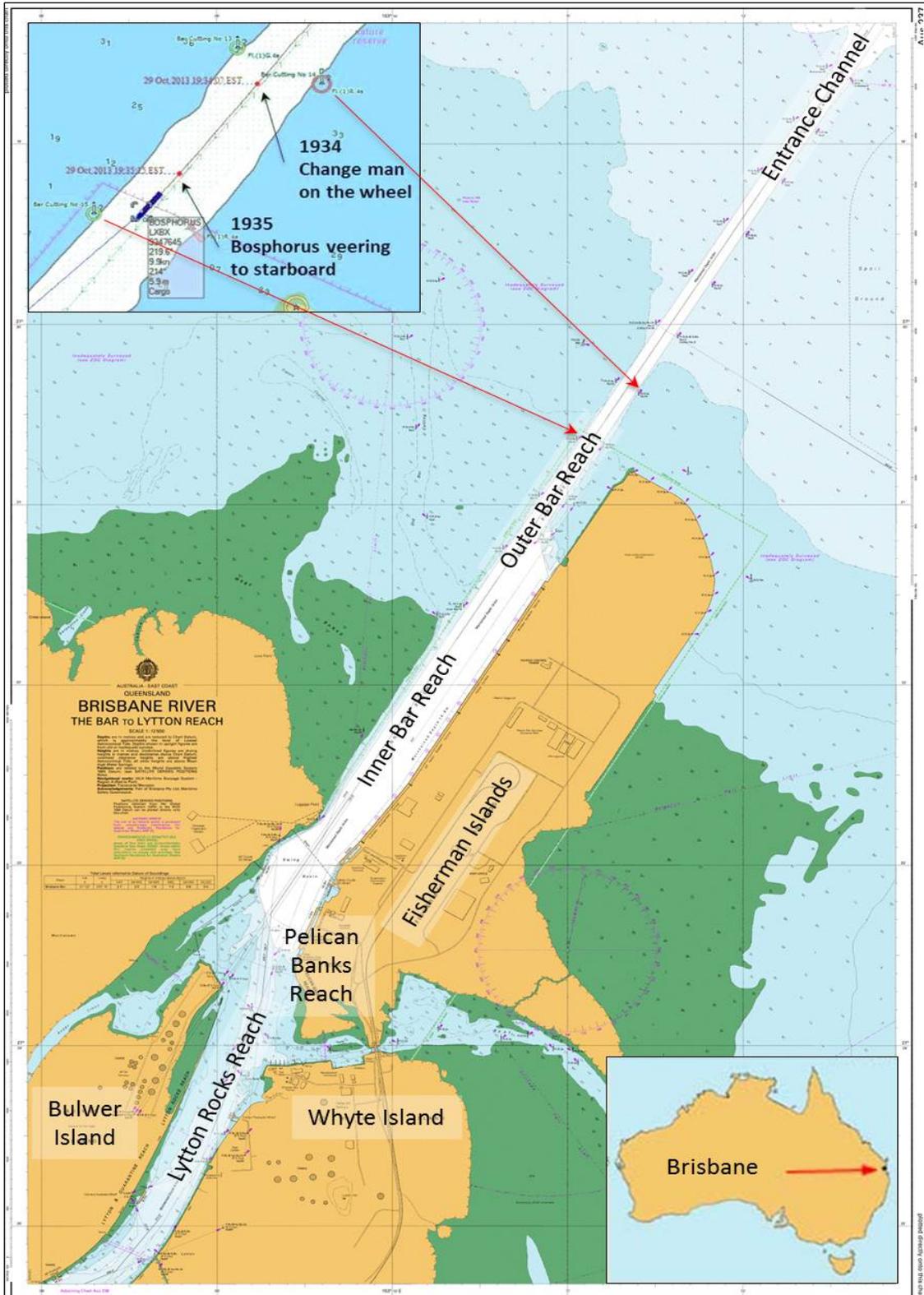
Shortly after, the pilot requested a reduction of speed to 6 knots² for the river transit.

As the ship approached the swing basin off Fisherman Islands, the pilot gave a number of helm orders to bring the ship onto the next course of 185°T.³ The helmsman repeated each order and applied the helm until the ship's heading was 185°.

¹ Unless otherwise stated, all times are local time, Coordinated Universal Time (UTC) + 10 hours.

² One knot, or one nautical mile per hour equals 1.852 kilometres per hour.

Figure 2: Section of navigational chart AUS 237 showing the Brisbane River and the Entrance Channel to Lytton Rocks Reach

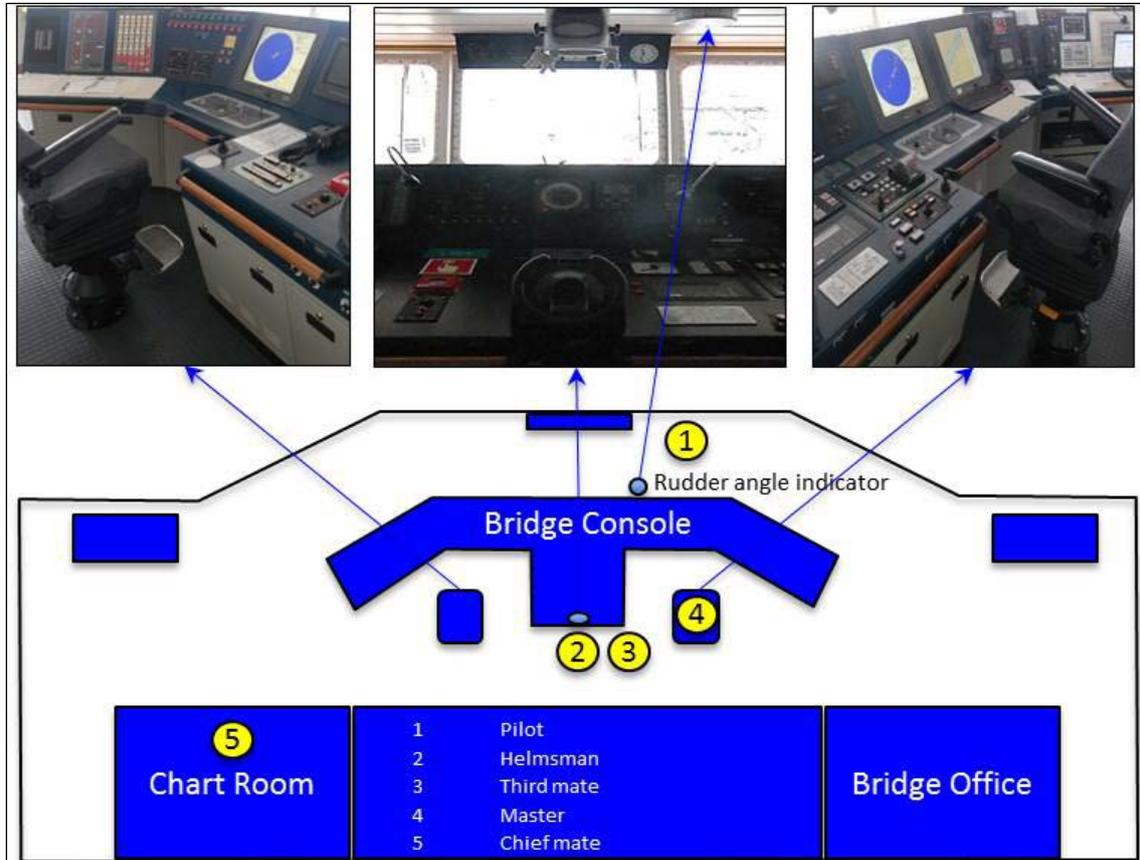


Source: Australian Hydrographic Service with annotations by ATSB

³ True course is the course relative to the direction of the north geographical pole; the reference direction for measurement of true directions.

At about 1958, the chief mate instructed the third mate to watch the helmsman. The chief mate then went to fill in the log book and the third mate took up a position to the right of the helmsman (Figure 3).

Figure 3: Bridge team positions prior to the grounding



Source: ATSB

The next course, through Lytton Rocks Reach, was 199°. The pilot ordered 'starboard 5' and then 'starboard 10'. When the vessel was swinging to starboard, he ordered 'midships'. He then ordered the helmsman to steady on a course of 199°. At about 1959, the helmsman informed the pilot the course was steady on 199°.

Shortly after, at about 2000, the pilot observed that the ship was not steady, but still swinging to starboard towards shallow water. He ordered 'midships' immediately followed by 'port 10'.

The helmsman responded verbally with 'port 10' but instead applied 10° of starboard helm. The pilot then ordered 'port 20' and then 'hard to port'. Each time the helmsman repeated the order but applied starboard helm.

Within 9 seconds, the pilot noticed that the wheel was still to starboard and then shouted 'you're going to starboard'. The third mate then intervened and swung the wheel hard to port. The pilot then ordered 'half astern', 'full astern' and then for a tug to 'come and assist'.

At 2001, *Bosphorus* grounded in position 27° 24.0' S; 153° 09.1' E at the Lytton Rocks Reach Channel (Figure 4).

At 2004, the pilot contacted Brisbane Vessel Traffic Service (VTS) and requested the assistance of another tug. Meanwhile, the master instructed the crew to sound all of the ship's tanks to establish whether the integrity of the hull had been compromised. He also asked for soundings to be taken over the side. The soundings revealed that the hull had not been breached and that the ship was aground forward.

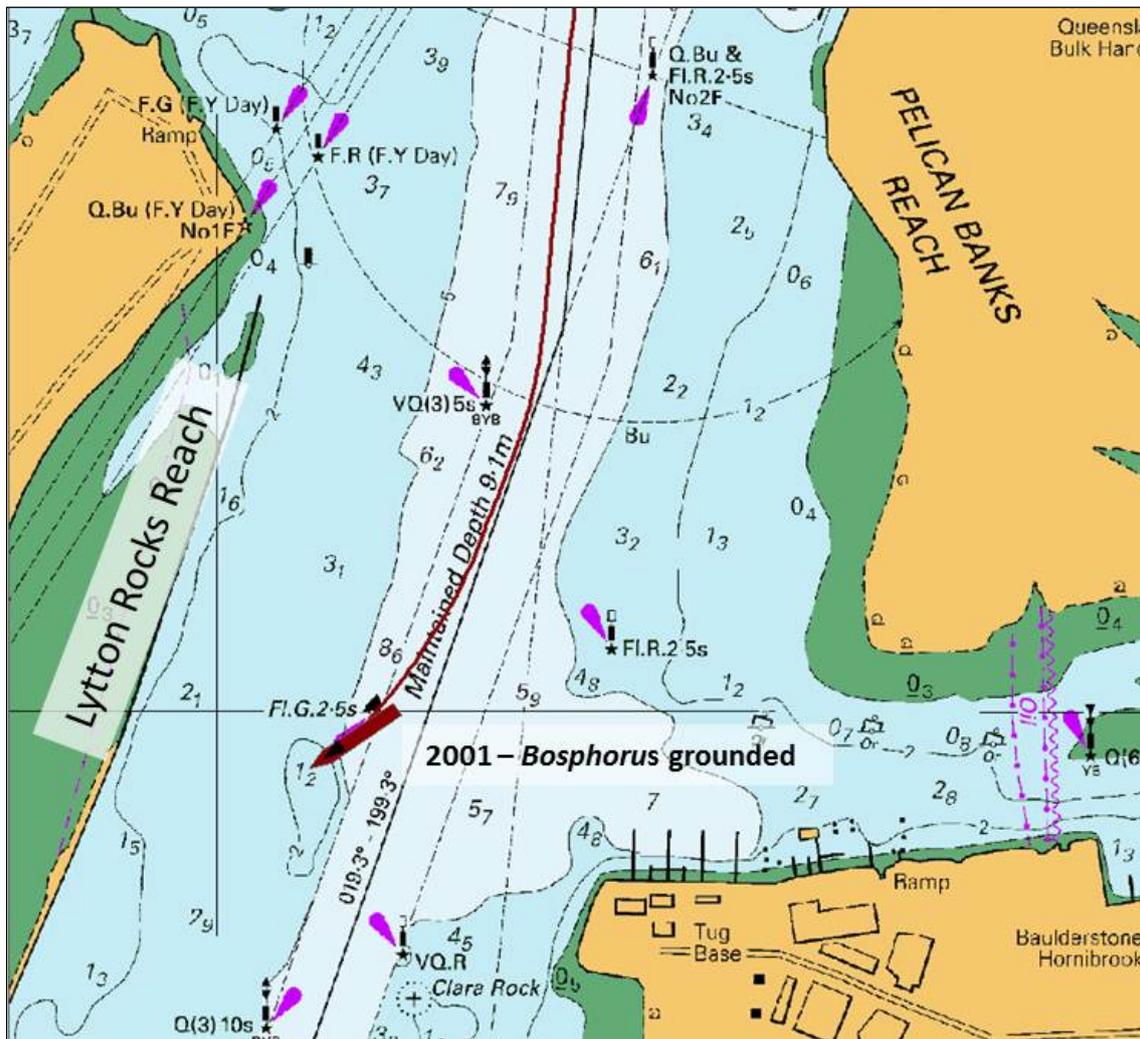
At 2006, two tugs arrived alongside *Bosphorus* and were made fast. The ship's engine was run astern and with the assistance of the tugs, the ship was re-floated.

At 2020, the ship was again underway and it proceeded to the Incitec South Berth, Gibson Island, where it berthed at 2145. While alongside, the ship was examined both internally and externally for damage. No damage was identified.

On 2 November, *Bosphorus* departed the berth and was anchored in Morton Bay to facilitate an underwater hull inspection. Minor scraping to the ship's hull and slight damage to the propeller was identified. The ship remained at anchor until the afternoon of 3 November, when it was berthed at Fisherman Islands container terminal to resume its service.

On 3 November, *Bosphorus* departed Brisbane bound for Melbourne.

Figure 4: Section of navigational Chart AUS 237 showing the ship's track and grounding



Source: Australian Hydrographic Service with annotations by ATSB

Context

Bosphorus

At the time of the grounding, *Bosphorus* was registered in Luxembourg, classed with Germanischer Lloyd (GL) and managed by Universal Shipping, Netherlands.

The Crew

The ship was crewed by 15 Russian, Ukrainian and Filipino nationals all of whom were appropriately qualified for the positions they held on board the ship.

The master had 13 years of seagoing experience, of which the last 6 years had been on this type of ship. He had been sailing as *Bosphorus*' master for about a year and re-joined the ship about 6 weeks before the grounding.

The chief mate and third mate had both been in their respective ranks for 3 years. This was their first time on board *Bosphorus* and they had been on board for about 2 months.

The helmsman had 10 years of seagoing experience, of which 6 years had been with Universal Shipping. This was his first time on board *Bosphorus* and he had been on board for 3 days.

Port of Brisbane

The city of Brisbane lies on Australia's east coast and is the capital and principal port of Queensland.⁴ The city is located in the south-east corner of Queensland and straddles the Brisbane River as it enters Moreton Bay. The port extends on both banks of the river for about 12 miles⁵ upstream from the entrance beacons to Hamilton Wharves. All berths in the port are located in the Brisbane River or at its mouth.

Brisbane port limits extend from the lower reaches of the Brisbane River, across Moreton Bay and north to Point Cartwright. Ships enter Moreton Bay and the shipping channel southeast of Caloundra Head and proceed through the bay for about 40 miles from the fairway beacon to the river entrance beacons. The Brisbane River entrance is to the north of Fisherman Islands.

Pilotage

Pilotage in the Port of Brisbane is compulsory for ships 50 m in overall length or more, unless the master holds a pilotage exemption certificate, and any ship so directed by the Harbour Master.

A private company, Brisbane Marine Pilots (BMP) provides the pilotage service for the port on behalf of Maritime Safety Queensland⁶ (MSQ).

The pilot assigned to *Bosphorus* on 29 October 2013 joined BMP in June 2012. At the time of the grounding, he held an unrestricted level 3⁷ pilot's licence issued by MSQ and a master class 1 certificate of competency issued by the Australian Maritime Safety Authority (AMSA). He had 14 years of seagoing experience and had 6 years of pilotage experience in various Australian ports.

⁴ *Admiralty Sailing Directions, Australian Pilot Volume III (NP15)*, tenth edition, 2005, p129.

⁵ A nautical mile of 1,852 m.

⁶ Maritime Safety Queensland is a branch of the Department of Transport and Main Roads within the Customer Services, Safety and Regulation Division.

⁷ A pilot licence endorsement to pilot vessels up to 185 m LOA and 9.0 m draft above Pelican Banks and vessels up to 200 m LOA and 11.0 m draft below Pelican Banks.

Safety analysis

Helmsman's actions - attentional disengagement (mind wandering)

Human performance is by its nature highly variable and subject to a range of influencing factors. A person's focus of attention on tasks can fluctuate depending on both individual and situational factors. The helmsman's error in applying starboard helm when the pilot had requested port can be explained by examination of attentional factors.

People can become unintentionally inattentive to their primary tasks without necessarily being distracted by another external event or object.⁸ This can be seen when the helmsman initially took over the helm and the ship veered to starboard. The chief mate stated he thought the helmsman was distracted during this period.

Attentional disengagement, or mind wandering, occurs when attention which is normally directed toward the primary task momentarily shifts away from the external environment, even though the individual continues to show well practiced automatic responding.^{9,10} A person's attention is unconsciously divided between internal thoughts and the task at hand, meaning the performance on the primary task may well continue at a skill based level, but without focused, conscious attention. Mind wandering or 'zoning out' can occur in situations where tasks are protracted, unvarying, familiar, repetitive or undemanding.¹¹

It is likely that, in the absence of any distracting or competing tasks, the helmsman's focus of attention briefly shifted to internal thoughts. He continued to respond to the pilot's orders, even correctly confirming the orders verbally, but without focused conscious attention.

Despite there being a pilot and three deck officers on the bridge at the time, a normal variation in attentional focus on the part of a single crew member, the helmsman, over a period lasting just 35 seconds led to the grounding of the ship.

Helm orders and monitoring

Shortly after the new helmsman took helm, *Bosphorus* veered to starboard and the pilot had to issue a number of helm orders to bring the ship back onto course. The master and chief mate assessed the situation and, while they considered the helmsman may not have had his mind on the job, decided that he could remain on the helm if they closely monitored his actions.

On each occasion that the pilot issued an order to the helmsman, he used closed loop communication techniques¹² to avoid misunderstandings. This was a requirement of the BMP pilotage risk management guidelines which also stated that before giving a helm order;

... the pilot needs to check the rudder angle for any permanent helm that is being used to maintain course. They are to use a hand signal to indicate the direction of helm to be used not only to give a visual confirmation to the helmsman but as a cross check between the verbal order and the actual direction you wish to alter to. It is therefore appropriate to use hand signals even at night.

On 29 October, the pilot did not use hand signals during this stage of the pilotage. In addition, the rudder angle indicator could not be easily referenced from the conning position he had assumed.

⁸ Regan, M.A., Hallett, C., and Gordon, C.P. (2011). Driver distraction and driver inattention: Definition, relationship and taxonomy. *Accident Analysis and Prevention*, 43, 1771-1781.

⁹ Smallwood, J. & Schooler, J.W. (2006). The Restless Mind. *Psychological Bulletin*, 132 (6), 946-958.

¹⁰ Cheyne, J.A., Soman, G.J.F., Carriere, J.S.A., and Smilek, D. (2008). Anatomy of an error: A bidirectional state model of task engagement / disengagement and attention-related errors. *Cognition*, 111, 98-113.

¹¹ Cheyne, Soman, Carriere, and Smilek, (2008).

¹² Closed loop communication is a 'repeat and acknowledge' communication technique

While the pilot could have selected a different conning position, he felt that the position he chose was dictated by the bridge design, layout and position of the available power point for his PPU.

The BMP 'Port of Brisbane Passage Plan', as agreed between the pilot and the master, required the OOW to monitor the helm orders and rudder angle indicator during course alterations. In addition, the other members of the bridge team had other visual indicators to monitor the situation such a chart pilot¹³ and an Electronic Charting Display and Information System (ECDIS).

In the critical phase of the pilotage, effective monitoring of the application of the helm orders by the bridge team may have enabled an early intervention to prevent the ship from grounding. However, the helm orders and their application by the helmsman was not being effectively monitored by the bridge team.

Had the pilot used the phrase 'midships' to return the helm to a neutral position as soon as he identified it had been put the wrong way, this may have drawn the helmsman's attention back to his primary task. However, by the time the helm was at hard to starboard and the pilot called out 'you are going the wrong way', it was too late to prevent the ship from grounding.

Bridge Resource Management

Bridge Resource Management (BRM) is defined as the use and coordination of all the skills and resources (people, procedures and equipment) available to the bridge team to achieve the established goal of optimum safety and efficiency.¹⁴ It is about increasing awareness of the role of the human element in accidents and the importance of managing this factor. Specifically, BRM aims to manage human performance limitations in an operational environment, such as a ship negotiating confined waters. It emphasises the role of effective management in these situations and is applicable in bridge operations, regardless of design and equipment levels.

The master/pilot information exchange is an opportunity not only to exchange information that the pilot and master each needs, but also for the pilot and the master to establish an appropriate working relationship. An effective master/pilot exchange conducted at the earliest opportunity will initiate sound bridge team working practices. Thus creating an environment of open and clear communication, and developing a shared understanding of the passage plan, and of individual roles and responsibilities.

Brisbane Marine Pilots provides pre-arrival passage information to assist the pilot and other bridge team members to develop a shared mental model of the planned pilotage. This information assist the ship's crew in completing the mandated berth to berth passage plan and to improve the master/pilot exchange and bridge team briefing.

Bosphorus' second mate used the pre-arrival information along with the on board safety management system (SMS) guidelines for passage planning to complete the passage plan. However, there were some important topics referred to in the BMP guidelines which were insufficiently considered or implemented in the ship's passage plan.

Roles and Responsibilities

During the initial information exchange, the master provided the pilot with details of the ship and reported no defects. The ship had also prepared a Brisbane Pilot to Brisbane Port passage plan consisting of a list of waypoints, for the passage to the berth.

The pilot discussed the BMP Port of Brisbane Passage Plan with the master, highlighting the officer of the watch (OOW) responsibilities section, which included:

- Keep a good look out visually and on radar. Use ARPA and report targets to the pilot including small fishing boats and yachts.

¹³ A chart pilot can be used to display the engine and rudder settings when operated in docking mode.

¹⁴ Nijjer, R. (2000) *Bridge Resource Management: The Missing Link, Sea Australia 2000, Sydney*

- Agree on which radar is to be used by the pilot and the radar to be used by the OOW to avoid changing each other's settings.
- Ensure courses on the ships charts/ECDIS are the same as this passage plan as agreed with the master.
- Confirm the ship's progress follows this passage plan. Plot the vessel position and give the pilot 7 cables¹⁵ notice of the next course.
- If the vessel deviates from the plan or if in any doubt at all, question the pilot immediately. Please make sure the helmsman will do this too.
- Monitor helm orders and rudder indicator during course alterations.
- Please make sure all of the bridge team are aware of these requirements including the next watch.

The passage plan made the OOW responsible for oversight of the progress of the entire pilotage. This was consistent with the requirements of *Bosphorus*' SMS, which also required that the OOW ensure the steering and engine orders were executed according to the pilot's orders. That said, the SMS provided no guidance in relation to the allocation of functional roles and responsibilities of the other members of the bridge team during pilotage.

Effectively, when the pilot took the conduct ship, he became the 'leader.' Accordingly, it was the obligation of the rest of the bridge team to fully support him in that role. The master, although retaining the command was now, like all other members of the bridge team, subordinate to the pilot for the 'conduct' of the navigation of the ship, unless the master relieved him of the conduct.

However, the chief mate and the third mate were not aware of their responsibilities as set out in the BMP passage plan, or the need for them to support the pilot. They considered their role was limited to 'assisting the master.' Hence, there was a complete absence of any clearly defined roles and responsibilities for each team member.

Navigation watch handover

Bosphorus' on board procedure for 'Navigation/Watch Keeping/Pilots/Anchoring' detailed the watch handover procedure to be followed. Before the duty officer took over the watch, he/she was required to become familiar with;

- the situation
- the weather (forecast)
- the traffic around him
- the up-coming voyage planning
- the dangers to expect.

When everything was clearly understood, the oncoming OOW was required to sign the bridge logbook, thus taking over the watch and assuming responsibility for all associated tasks.

Incomplete/informal watch handover

At about 1950 on 29 October, the third mate came onto the bridge, his usual practice to gain his night vision and be briefed on the upcoming 8-12 watch, prior to proceeding to mooring stations for the ship's berthing. The chief mate informed him the ship would be berthing at 2030 and they talked about the duration of the stay in port and the third mate's responsibility at the forward mooring station.

¹⁵ One cable equals one tenth of a nautical mile or 185.2 m

At 1958, the chief mate asked the third mate to watch the helmsman. While the chief mate had seen the helmsman steer off-course and thought that he was not concentrating on the job at hand, the third mate was not aware of this history and, therefore, did not have a clear understanding of what ‘watch the helmsman’ really meant.

The third mate acknowledged the chief mate’s instruction and stood to the right of the helmsman. No further formal handover activities were conducted. The chief mate then moved to the chart table on the port side of the bridge to fill in the bridge logbook for the end of the 4-8 watch.

The chief mate thought that the watch handover was signalled by his change of activities and move away from the helmsman to complete the logbook. While the third mate had been instructed to watch the helmsman, he had not been informed of the ship’s position in the river, or upcoming passage events. Hence he considered that the chief mate still had the watch.

The third mate later assessed that it was his watch because it was after 2000, but noted that at the time he thought he was just keeping a good watch on the helmsman until the chief mate returned. The pilot had not been informed of a watch handover and he believed that the chief mate was still the OOW. In fact, he was unaware that the third mate was even on the bridge.

In normal bridge operations, completion of a watch handover is signalled by the off going OOW leaving the bridge. On this occasion, the chief mate intended to remain on the bridge until berthing (some 30 minutes later), when he was to take back the watch. Therefore, it was likely that he perceived it as less critical to ensure that the third mate was fully informed before taking on other duties. This created ambiguity around which of the two men was the OOW at the time of the occurrence.

Timing of the watch handover

At critical stages of a pilotage, it is essential that all members of the bridge team are focused on the completion of safety critical tasks, like monitoring helm order and the actions of the helmsman. Therefore, watch handovers or personnel changes should be timed to occur during less critical phases of the passage in order to ensure that all distractions are minimised, and that all members of the team are settled in their respective roles, with heightened situational awareness.

Conducting an informal handover of the watch, during the turn into the Lytton Rocks Reach, compromised the bridge team’s situational awareness. This reduced the team’s ability to ensure that all the necessary functions were being effectively performed on the bridge in the time leading up to the grounding.

The risks associated with handing over the navigational watch at a critical point of the pilotage had not been considered by the bridge team. Furthermore, neither, *Bosphorus*’ SMS nor BMP’s Port of Brisbane Passage Plan detailed any guidance or instructions relating to handing over the watch or changing the helmsman during the pilotage or in high risk areas of the pilotage.

Findings

From the evidence available, the following findings are made with respect to the grounding of the Luxembourg registered geared general cargo ship *Bosphorus* at Lytton Rocks Reach, Brisbane on 29 October 2013. 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

- Shortly after 2000 on 29 October 2013, the pilot issued a series of port helm orders to the helmsman. However, on each occasion he applied starboard helm. The ship's heading and rate of turn increased to starboard and resulted in the ship grounding.
- Helm orders and their application by the helmsman were not effectively monitored by the bridge team.
- ***Bosphorus'* safety management system provided no guidance in relation to the allocation of functional roles and responsibilities to bridge team members during pilotage. [Safety issue]**
- The watch handover between the chief mate and the third mate was not completed in accordance with the requirements of the ship's safety management system or Brisbane Marine Pilots' passage plan. Relevant instructions were not communicated to the third mate and the pilot was not informed of the handover. Consequently, it was not clear which of the two men was the officer of the watch at the time of the grounding and, hence, who was responsible for all associated duties.
- ***Bosphorus'* safety management system did not detail any guidance or instructions relating to watch handover or changing the helmsman during high risk areas of a pilotage. [Safety issue]**
- **Brisbane Marine Pilots' 'Port of Brisbane Passage Plan' did not detail any guidance or instructions relating to watch handover or changing the helmsman during high risk areas of a pilotage. [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 organisations. In addressing those issues, the ATSB prefers to encourage relevant organisations to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

All of the directly involved parties were provided with a draft report and invited to provide submissions. As part of that process, each organisation was asked to communicate what safety actions, if any, they had carried out or were planning to carry out in relation to each safety issue relevant to their organisation.

Roles and Responsibilities

Number:	MO-2013-011-SI-01
Issue owner:	Universal Shipping
Operation affected:	Marine: Shore-based operations
Who it affects:	All persons charged with navigating a vessel during pilotage

Safety issue description:

Bosphorus' safety management system provided no guidance in relation to the allocation of function based roles and responsibilities to members of the bridge team during pilotage.

Response to safety issue by Universal Shipping

No response was received addressing this safety issue.

ATSB comment in response:

The ATSB has issued the following recommendation to Universal Shipping to address this safety issue.

ATSB safety recommendation to Universal Shipping

Action number: MO-2013-011-SR-025

Action status: Released

The ATSB recommends that Universal Shipping take action to address this safety issue.

Current status of the safety issue

Issue status: Not addressed

Justification: No action taken by Universal Shipping to address this safety issue.

High risk areas of pilotage

Number:	MO-2013-011-SI-02
Issue owner:	Brisbane Marine Pilots
Operation affected:	Marine: Shore-based operations
Who it affects:	All persons charged with navigating a vessel during pilotage

Safety issue description:

Brisbane Marine Pilots' 'Port of Brisbane Passage Plan' did not detail any guidance or instructions relating to watch handover or changing the helmsman during high risk areas of a pilotage.

Response to safety issue by Brisbane Marine Pilots

Brisbane Marine Pilots has advised that this safety issue was referred to the company's Risk Management Team, which has recommended the following amendment to the passage plan:

On the front page of the plan add, "Inform pilot before watch / helmsman are changed." This is to reflect the ideal, that watch officer and helmsman handovers should be confirmed with the pilot prior to them occurring. It was considered risk increases if the pilot is not provided the opportunity to request the handover be delayed during critical operations. Notification will allow consideration to be given to the appropriateness of the timing of the changeover, so as to ensure this does not occur in critical locations or at critical times, taking into consideration all operational matters. We note high risk areas require case by case consideration since these will largely be dictated by draft. Similarly other critical times such as passing or overtaking, course alterations etc. require consideration.

The inclusion of this item in our passage plan has flow on effects in terms of our wider systems. For example given its inclusion in the Passage Plan, a controlled document, the item becomes a part of Pilot Competency Management System, the standard against which pilots are mentored and checked.

The Passage Plan itself is in the process of being amended for re-printing, incorporating this item and some other changes not specifically related to the safety issue.

ATSB comment in response:

The ATSB considers that the actions taken and proposed by Brisbane Marine Pilots should address this safety issue.

Current status of the safety issue:

Issue status: Adequately addressed

Justification: The actions taken and proposed by Brisbane Marine Pilots should address this safety issue.

High risk areas of pilotage

Number:	MO-2013-011-SI-03
Issue owner:	Universal Shipping
Operation affected:	Marine: Shore-based operations
Who it affects:	All persons charged with navigating a vessel during pilotage

Safety issue description:

Bosphorus' safety management system did not detail any guidance or instructions relating to watch handover or changing the helmsman during high risk areas of a pilotage.

Response to safety issue by Universal Shipping BV

Universal Shipping advised the ATSB that;

The chief mate has instructed the third mate to "watch the helmsman". There was not a hand over of the watch but only a request for assistance to avoid that accidents might occur.

ATSB comment in response:

The ATSB's investigation found the bridge team members' understanding of who was the officer of the watch at the time of the grounding was not consistent. The chief mate thought that he had handed the watch over to the third mate and the third mate thought that he was simply assisting the chief mate.

ATSB safety recommendation to Universal Shipping BV

Action number: MO-2013-011-SR-026

Action status: Released

The ATSB recommends that Universal Shipping take action to address this safety issue.

Current status of the safety issue

Issue status: Not addressed

Justification: No action taken by Universal Shipping to address this safety issue.

General details

Occurrence details

Date and time:	29 October 2013 at 2002 AEDT	
Occurrence category:	Incident	
Primary occurrence type:	Grounding	
Location:	Lytton Rocks Reach, Brisbane River, Brisbane, Queensland	
	Latitude: 27°24.000' S	Longitude: 153° 09.100' E

Bosphorus

Name	<i>Bosphorus</i>
IMO number	9347645
Call sign	ZGAA5
Flag	Luxembourg
Classification society	Germanischer Lloyd (GL)
Ship type	General cargo ship
Builder	Daehan Shipbuilding, Korea
Year built	2007
Owner(s)	Vermuelen C, Netherlands
Ship Manager	Universal Shipping, Netherlands
Number of crew	15
Number of passengers	0
Gross tonnage	8,407
Draught	8.70 m
Length overall	129.32 m
Moulded breadth	19.00 m
Main engine(s)	1 x 6M43C, 4 Stroke, Single Acting, In-Line diesel engine
Total power	6,000 kW
Speed	16.0 knots

Sources and submissions

Sources of information

On 30 October 2013, investigators from the ATSB attended *Bosphorus* while the ship was berthed at the Incitec South Berth, Brisbane. The master and directly involved crew members were interviewed and each provided their account of the incident. Photographs of the ship and copies of relevant documents were obtained, including log books, statutory certificates, reports, manuals and procedures.

On 1 November 2013, the investigators attended the BMP office. The marine pilot was interviewed and he provided his own account of the incident.

During the course of the investigation, further information was provided by Brisbane Regional Harbour Master.

References

Regan, M.A., Hallett, C., and Gordon, C.P. (2011). Driver distraction and driver inattention: Definition, relationship and taxonomy. *Accident Analysis and Prevention*, 43, 1771-1781.

Smallwood, J. & Schooler, J.W. (2006). The Restless Mind. *Psychological Bulletin*, 132 (6), 946-958.

Cheyne, J.A., Soman, G.J.F., Carriere, J.S.A., and Smilek, D. (2008). Anatomy of an error: A bidirectional state model of task engagement / disengagement and attention-related errors. *Cognition*, 111, 98-113.

Nijjer, R. (2000) *Bridge Resource Management: The Missing Link, Sea Australia 2000*, Sydney

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 the Administration des Enquêtes Techniques, the Australian Maritime Safety Authority (AMSA), Brisbane Marine Pilots (BMP), the marine pilot, *Bosphorus'* master, chief mate, third mate and helmsman and Universal Shipping.

Submissions were received from the Administration des Enquêtes Techniques, AMSA, BMP, the marine pilot, *Bosphorus'* master, chief mate, third mate and helmsman and Universal Shipping. The submissions were reviewed and where considered appropriate, the text of the 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

Grounding of *Bosphorus*, Brisbane River, Queensland
29 October 2013

304-MO-2013-011

Final – 22 September 2014