ACCIDENT REPORT

Report on the investigation of the collision of

Rickmers Dubai

with the crane barge

Walcon Wizard

being towed by the tug

Kingston

in the south-west lane of

of the Dover Strait Traffic Separation Scheme

on 11 January 2014

MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

SERIOUS MARINE CASUALTY REPORT NO 29/2014 OCTOBER 2014

Extract from

The United Kingdom Merchant Shipping

(Accident Reporting and Investigation)

Regulations 2012 – Regulation 5:

"The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame."

NOTE

This report is not written with litigation in mind and, pursuant to Regulation 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AB	-	Able seaman
AIS	-	Automatic Identification System
ALB	-	All-weather lifeboat
ARPA	-	Automatic Radar Plotting Aid
BA	-	British Admiralty
BNWAS	-	Bridge Navigational Watch Alarm System
BTA	-	British Tugowners Association
CA	-	Certifying Authority
CNIS	-	Channel Navigation Information Service
CoC	-	Certificate of Competency
COG	-	Course over the ground
COLREGS	-	International Regulations for the Prevention of Collisions at Sea 1972 (as amended)
CoSWP	-	Code of Safe Working Practices
CPA	-	Closest Point of Approach
CPP	-	Controllable pitch propeller
DGPS	-	Differential global positioning system
DSC	-	Digital Selective Calling
ECDIS	-	Electronic Chart Display and Information System
EU	-	European Union
GMDSS	-	Global Maritime Distress and Safety System
GPS	-	Global positioning system
gt	-	Gross Tonnage
IMO	-	International Maritime Organization
ISM Code	-	International Safety Management Code
kt	-	knot
LED	-	Light emitting diode

MCA	-	Maritime and Coastguard Agency
MGN	-	Marine Guidance Note
MMSI	-	Maritime mobile service identity
MSN	-	Merchant Shipping Notice
nm	-	nautical miles
NPD	-	Nominated Departure Point
OOW	-	Officer of the watch
RAM	-	Restricted in ability to manoeuvre
SAN	-	Surveyor Advice Note
SAR	-	Search and Rescue
SMC	-	Safety Management Certificate
SMS	-	Safety Management System
SOG	-	Speed over the ground
SOLAS	-	International Convention for the Safety of Life at Sea 1974, as amended
STCW	-	International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW Convention)
t	-	tonne
TSS	-	Traffic Separation Scheme
UK	-	United Kingdom of Great Britain and Northern Ireland
USB	-	Universal serial bus
UTC	-	Universal time co-ordinated
VDR	-	Voyage data recorder
VHF	-	Very High Frequency (radio)
VTS	-	Vessel Traffic Services

TIMES: all times used in this report are UTC unless otherwise stated

SYNOPSIS

At 0154 on 11 January 2014, the Liberia registered multi-purpose cargo ship *Rickmers Dubai* collided with *Walcon Wizard*, an un-manned crane barge which was being towed by the tug *Kingston* in the south-west traffic lane of the Dover Strait Traffic Separation Scheme. Following the collision, *Kingston* was pulled stern-first through the water until the towline ran free from its tow winch. *Walcon Wizard* was badly damaged and *Rickmers Dubai*'s hull was punctured above the waterline. The hydraulic system for the tow winch on board *Kingston* was also damaged. There were no injuries and there was no pollution. The accident occurred while the cargo ship was overtaking the tug and tow.

The investigation established that *Rickmers Dubai'*s officer of the watch:

- Had not kept a proper lookout. He did not see *Walcon Wizard* when he altered course to avoid *Kingston*, which was less than 2 cables ahead.
- Relied solely on AIS information displayed on the ECDIS as an aid to collision avoidance.
- Was relatively inactive during his watch. He was alone on the bridge, he did not monitor the radar and the bridge navigational watch alarm system was switched off.
- Did not take note of the content of two safety broadcasts issued by Dover Coastguard advising of *Kingston* and *Walcon Wizard*'s position in the south-west traffic lane.

The investigation also identified that:

- Neither *Kingston* nor *Walcon Wizard* were transmitting on AIS.
- *Kingston*'s towing and stern lights were probably obscured by a floodlight.
- A safety broadcast, which was scheduled for 0140 and would have included the position and movement of *Kingston* and *Walcon Wizard*, was not issued by Dover Coastguard because the operator was busy dealing with other matters and had been on watch for almost 4 hours.
- The towline was secured to the tow winch on board *Kingston* and could not be released quickly or from the wheelhouse.
- The requirements for the release of towlines from towing winches are ambiguous.

Recommendations have been made to the ships' managers designed to improve the navigational and operational safety of their fleets. A recommendation has also been made to the Maritime and Coastguard Agency that is intended to improve the effectiveness of the safety messages broadcast by Dover Coastguard.

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF *RICKMERS DUBAI*, *KINGSTON* & *WALCON WIZARD* AND ACCIDENT

SHIP PARTICULARS	
Vessel's name	*Rickmers Dubai*
Flag	Liberia
Classification society	Germanischer Lloyd
IMO number/fishing numbers	9467134
Type	Multi-purpose dry cargo
Registered owner	Kg Schifffahrtsgesellschaft MS Baltic Winter mbh &Co.
Manager(s)	Reedereiverwaltung Heino Winter GmbH & Co.KG
Construction	Steel
Year of build	2011
Length overall	166.15m
Length (bp)	156m
Gross tonnage	15377
Minimum safe manning	10
Authorised cargo	Dry, containerised & heavy cargo
VOYAGE PARTICULARS	
Port of departure	Hamburg
Port of arrival	Genoa
Type of voyage	Short international
Cargo information	General cargo
Manning	17

MARINE CASUALTY INFORMATION	
Date and time	11 January 2014 at 0154
Type of marine casualty or incident	Serious Marine Casualty
Location of incident	South-west lane of Dover Strait Traffic Separation Scheme
Place on board	Bow
Injuries/fatalities	None
Damage/environmental impact	Hull punctures and minor indentations
Ship operation	On passage
Voyage segment	Mid-water
External & internal environment	Wind: south-westerly wind force 5 to 6 Sea state: moderate to rough Visibility: good
Persons on board	17

Rickmers Dubai

SHIP PARTICULARS		
Vessel's name	Kingston	Walcon Wizard
Flag	UK	UK
Classification society	Not applicable	Not applicable
IMO number	5344437	908792
Type	Tug	Crane barge
Registered owner	Griffin Towage & Marine	Walcon Marine Ltd
Manager(s)	Griffin Towage & Marine	Walcon Marine Ltd
Construction	Steel	Steel
Year of build	1961	2003
Length overall	27.2m	23.99m
Length bp	25.3m	Not applicable
Gross tonnage	113	105.6
Minimum safe manning	Not applicable	Not applicable
Authorised cargo	None	165t deck cargo
VOYAGE PARTICULARS		
Port of departure	Ipswich	
Port of arrival	Southampton	
Type of voyage	Coastal	
Cargo information	Not applicable	
Manning	4	Unmanned
MARINE CASUALTY INFORMATION		
Date and time	11 January 2014 at 0154	
Type of marine casualty or incident	Serious Marine Casualty	
Location of incident	South-west lane of Dover Traffic Separation Scheme	
Place on board	Deck	Superstructure
Injuries/fatalities	None	
Damage/environmental impact	Tow winch hydraulics and brake damaged	Substantial damage to wheelhouse and crane
Ship operation	Towing	Under tow
Voyage segment	Mid-water	
External & internal environment	Wind: south-westerly wind force 5 to 6 Sea state: moderate to rough Visibility: good	
Persons on board	4	None

Kingston

Walcon Wizard

1.2 NARRATIVE

1.2.1 Events leading to the collision

At 0115[1] on 11 January 2014, the multi-purpose cargo ship *Rickmers Dubai* was transiting the south-west lane of the Dover Strait Traffic Separation Scheme (TSS). The vessel was on passage from Hamburg, Germany, to Genoa, Italy, with cargo in its hold and on deck. *Rickmers Dubai* was making good a course over the ground (COG) of 233° at a speed over the ground (SOG) of 15.4 knots (kts) **(Figure 1)**.

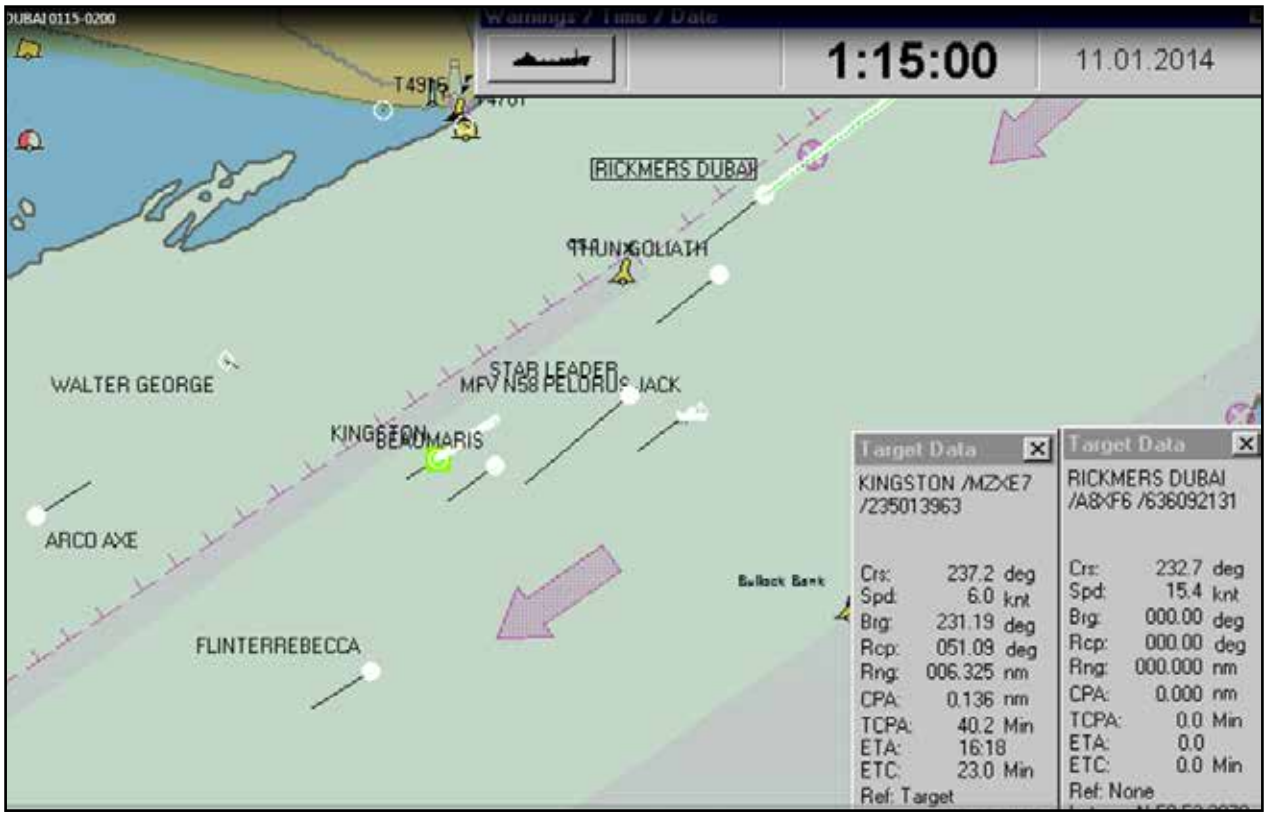

Figure 1: CNIS display at 0115

Directly ahead of *Rickmers Dubai*, at a range of 6.3nm was the tug *Kingston*, which was towing the unmanned crane barge *Walcon Wizard*. The tug and tow were on passage from Ipswich, UK to Southampton, UK. The length of the wire towline was 250m. The tug was making good a COG of 237°at a speed of 6kts and was keeping to the northern edge of the traffic lane to enable other vessels to pass down its port side. The predicted closest point of approach (CPA) between *Rickmers Dubai* and *Kingston* was about 250m at 0155.

The wind was from the south-west between Beaufort force 5 and 6. The sea was moderate to rough and the visibility was good. The predicted tidal stream was setting to the south-west at a rate of 1kt.

At 0145, the distance between *Rickmers Dubai* and *Kingston* had reduced to 1.6nm and the CPA of the vessels was 40m **(Figure 2)**. At about this time, *Kingston*'s wheelhouse watchkeeper became aware of the cargo ship approaching on the tug's starboard quarter. He assessed that, although the cargo ship was close, it would pass clear down the starboard side of *Walcon Wizard* and *Kingston*. The watchkeeper noticed that the automatic identification system (AIS) data included the

[1] The local time kept on board *Rickmers Dubai* was UTC (+1), therefore ship's time was 0215.

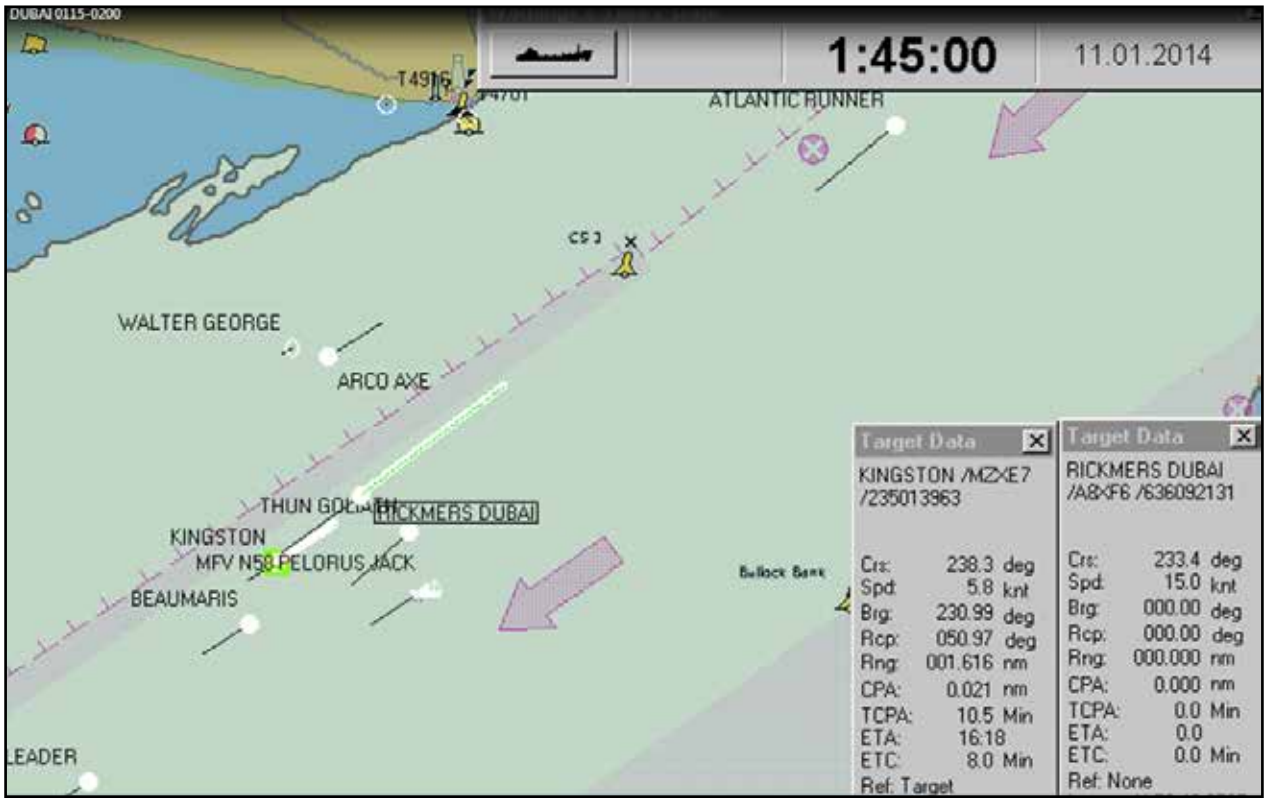

Figure 2: CNIS display at 0145

cargo ship's maritime mobile service identity (MMSI) number, but not its name. He started to note the MMSI number on a piece of paper in case he needed to contact the cargo ship by radio.

Shortly after, *Rickmers Dubai*'s second officer, who was the officer of the watch (OOW), saw *Kingston*'s lights very fine off the cargo ship's port bow. At 0154, he adjusted the autopilot to port in order to overtake the tug on its port side **(Figure 3)**. Seconds later, *Rickmers Dubai* collided with *Walcon Wizard*. It then passed between the crane barge and the tug, catching on the towline as it did so.

Kingston's mate, who was the tug's wheelhouse watchkeeper, saw that the cargo ship was now passing very close to the tug's stern. At 0155, he broadcast on very high frequency (VHF) radio channel 16:

"What are doing? Slow down, there is a wire, slow down, slow down!"

The VHF call was heard by *Rickmers Dubai*'s OOW, who quickly reduced the ahead pitch on the controllable pitch propeller (CPP) from 83% to 29%. As *Rickmers Dubai* overtook *Kingston*, the lead of the towline moved from astern to ahead, which pulled the tug through 180°. *Kingston* was then towed stern-first.

Kingston's mate immediately took the main engine out of gear and shouted down to the accommodation to warn the rest of the tug's crew. The tug's skipper and engineer immediately went on deck and saw that the towline was being pulled off the tow winch drum, dense smoke was coming from the winch drum brake, the aft deck was under water and hydraulic oil was spraying from ruptured connections. Seconds later, the bitter end of the wire towline broke free from the drum. *Kingston* then stopped in the water with *Walcon Wizard* off its starboard side.

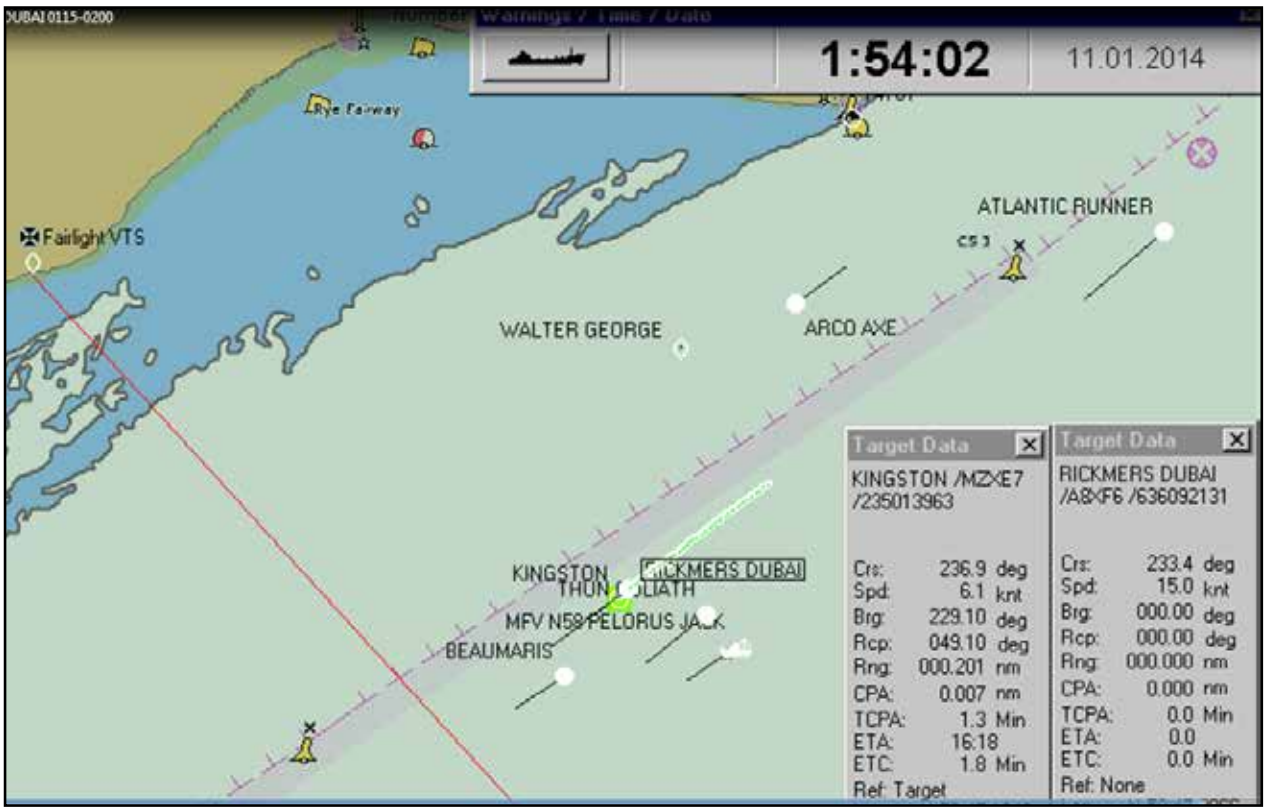

Figure 3: CNIS display at 0154

1.2.2 Subsequent actions

Kingston and *Walcon Wizard*

At 0159, *Kingston*'s watchkeeper informed Dover Coastguard of the collision and that the tug's tow had been lost. He also informed the coastguard that the tug's crew were uninjured. Dover Coastguard alerted the Dungeness all weather lifeboat (ALB), which was launched to assist. It also advised approaching vessels to give *Kingston* and *Walcon Wizard* a wide berth.

Kingston was manoeuvred close to *Walcon Wizard* but its crew were unable to access the emergency towline, which had been prepared on the barge before leaving Ipswich, because of damage to the barge's crane jib. The damage to the tug's hydraulic system also prevented the crew from recovering the lost towline, which was anchoring *Walcon Wizard* to the seabed.

At 0234, the Dungeness ALB arrived on scene. Its crew confirmed that, except for the stern light, *Walcon Wizard*'s navigation lights were clearly visible. The barge's stern light was illuminated but it was obscured by damage to its superstructure.

The towline was eventually cut free from *Walcon Wizard* by the crew of *THV Galatea*, which then took the crane barge in tow. *Kingston* and *Walcon Wizard* berthed alongside in Dover at 2300 on the same day.

Rickmers Dubai

At 0157, *Rickmers Dubai*'s chief engineer, having been awoken by a change in engine noise and increased ship's vibration, arrived on the bridge. At 0202, Dover Coastguard called *Rickmers Dubai* by VHF radio. The second officer responded immediately, stating:

> *"The tug was not showing any signal."*

Dover Coastguard requested the second officer ensured that the voyage data recorder (VDR) was saved and that details of the incident were entered in the deck logbook. By 0205, *Rickmers Dubai*'s speed had reduced to 6kts as the vessel continued on a south-westerly heading.

At 0212, the second officer started to slowly increase the vessel's speed. The chief engineer prompted the OOW to inform the master of what had happened. He then left the bridge.

At 0217, the second officer informed Dover Coastguard that *Kingston* did not, and was still not, transmitting on AIS. He also stated that he had not seen the towline or spoken to the tug before overtaking. The OOW also suggested the towed barge was not showing navigation lights.

By 0235, *Rickmers Dubai*'s speed had increased to 13.5kts. At about 0300, the chief officer arrived on the bridge to take over the navigational watch. During the watch handover, the second officer informed the chief officer that *Rickmers Dubai* had passed between a tug and its tow, but that the cargo ship had not been damaged. On completion of the watch handover, the chief officer instructed the second officer to make sure that there was no damage. Accordingly, the second officer went onto the forecastle with a torch and looked over the bow. No damage was seen.

At 0330, Dover Coastguard called on VHF radio and requested a damage report. The chief officer replied that he would check and respond within 30 minutes.

At 0356, Dover Coastguard instructed *Rickmers Dubai* to leave the TSS, anchor and await further instructions. The chief officer called the master to the bridge. The chief officer then briefed the master, who immediately called the bosun and instructed him to sound the ballast tanks. No unusual soundings were noted.

At 0742 *Rickmers Dubai* anchored off Newhaven.

1.3 DAMAGE

1.3.1 Tug and tow

Walcon Wizard's wheelhouse was set forward in the collision and crushed. The jib of its crane was buckled and guardrails were also bent **(Figure 4)**. *Kingston*'s hydraulic motor for the tow winch was seriously damaged and several hydraulic connections were ruptured.

Figure 4: *Walcon Wizard* - collision damage

1.3.2 *Rickmers Dubai*

MAIB inspectors boarded *Rickmers Dubai* from a pilot boat at 1100 on 11 January 2014 while the ship was at anchor off Newhaven. They informed the master that damage to the bow area, above the waterline, was clearly visible **(Figure 5)**. The ship's crew then identified that the vessel's hull had been punctured on its stem and port side in way of the forecastle store **(Figure 6)**.

Figure 5: *Rickmers Dubai* - collision damage (external)

Figure 6: *Rickmers Dubai* - collision damage (internal)

1.4 *RICKMERS DUBAI*

1.4.1 Management and crew

Rickmers Dubai was managed by Reedereiverwaltung Heino Winter GmbH & Co. KG, a family owned company, based in Hamburg, Germany. The company managed 13 vessels, 9 of which it owned. The fleet consisted mainly of heavy lift multipurpose cargo vessels, but three were feeder container vessels. The ship manager crewed its vessels through Marlow Navigation, based in Cyprus. Most of the officers were eastern Europeans while ratings were Filipino or Tongan. Crew retention was good.

All of *Rickmers Dubai*'s officers were Ukrainian and held the appropriate level of certificates of competency (CoC) for their posts on board. The officers' contract length was usually 4 months. The ratings' contract length was approximately 11 months.

1.4.2 Bridge manning

The deck officers on board *Rickmers Dubai* had all received formal training in the use of an Electronic Chart Display and Information System (ECDIS). At sea, they kept bridge watches as follows:

- second officer: 0000 – 0400 and 1200 – 1600
- chief officer: 0400 – 0800 and 1600 – 2000
- master/third officer: 0800 – 1200 and 2000 – 0000

During the hours of darkness, one of the vessel's able seamen (AB) was nominated as a lookout for each of the bridge watches. The vessel carried a bosun plus four ABs. Of the four ABs, three were scheduled to keep bridge watches; the remaining AB was available to assist the bosun.

The master was 48 years old and had served on board a variety of different ship types. The master's first command was in 2007 and he joined *Rickmers Dubai* in September 2013.

The second officer was 35 years old and had qualified as an OOW in 2006. He spoke reasonably good English and had served in a variety of ship types. The second officer had been on board *Rickmers Dubai* for 3 months; this was his second contract on board. He was well rested and did not feel tired during his watch on the morning of 11 January 2014.

The AB nominated to keep watch with the second officer during the morning of 11 January 2014 was Tongan and 31 years old. He had been at sea for 11 years and had been on board *Rickmers Dubai* for 8 months.

The lookout was not on the bridge at the time of the collision. It is reported that the lookout had accompanied the second officer on the bridge during his watch and had informed the second officer about seeing the lights of another vessel ahead before leaving the bridge to conduct safety rounds.

1.4.3 Bridge equipment

The main navigation and control console on *Rickmers Dubai*'s bridge was offset to starboard **(Figure 7)** to improve the view ahead, which was partially obscured by deck cranes on the vessel's port side **(Figure 8)**. The console had navigation stations at each end, which were fitted with ECDIS and radar displays. The vessel's primary means of navigation was ECDIS and no paper charts were carried.

The central section of the main console contained the CPP operating lever, helm controls and the autopilot. It also contained a VHF radio and the VDR emergency back-up button. A second VHF radio was on the global maritime distress and safety system (GMDSS) console.

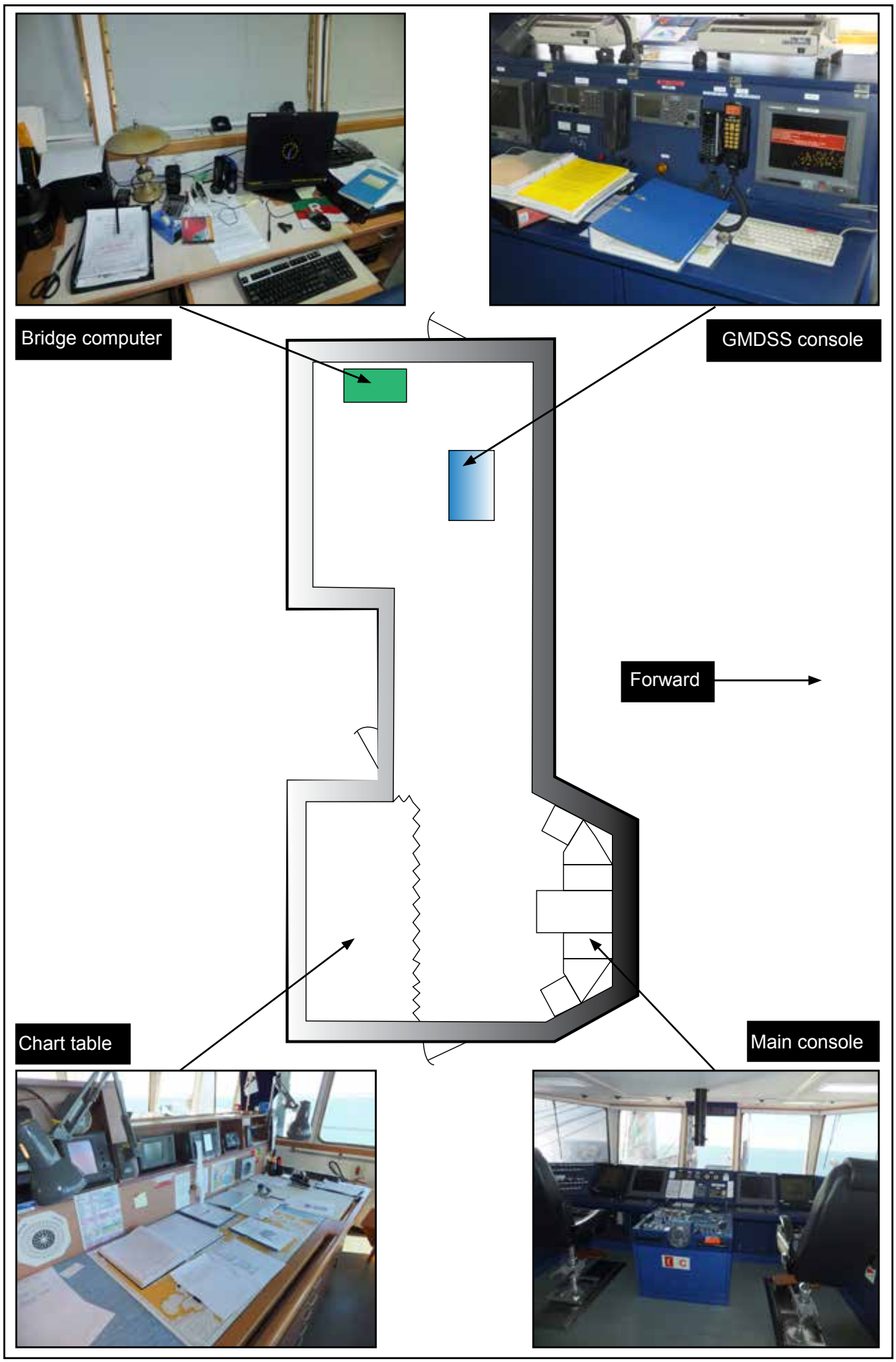

Figure 7: *Rickmer's Dubai* - bridge layout

Figure 8: *Rickmer's Dubai* - view ahead from navigation console

The ship was fitted with one S-band and two X-band radars. One of the X-band radars was bow-mounted for use in restricted and/or congested waters. The radar display at the port side navigation station showed the S-band radar, while the display at the starboard station could be switched between the X-band radars. The second officer mainly used the X-band radar display during his watches. On taking over the bridge watch prior to the collision, he had adjusted the settings on the X-band radar display; the second officer did not adjust or use the S-band radar display.

The radar displays were each equipped with an automatic radar plotting aid (ARPA) and were able to show AIS information for operator-selected targets. Up to three targets could be selected manually using ARPA or AIS and their details were displayed on the right of the radar screen **(Figure 9)**.

A Bridge Navigational Watch Alarm System (BNWAS) was switched on and off using a key on a panel on the main console. The system was intended to require the OOW to acknowledge a visual and audible alarm every 10 minutes in order to prevent an alarm sounding in the master's cabin. The key was in the control panel but the system was not switched on at the time of the accident.

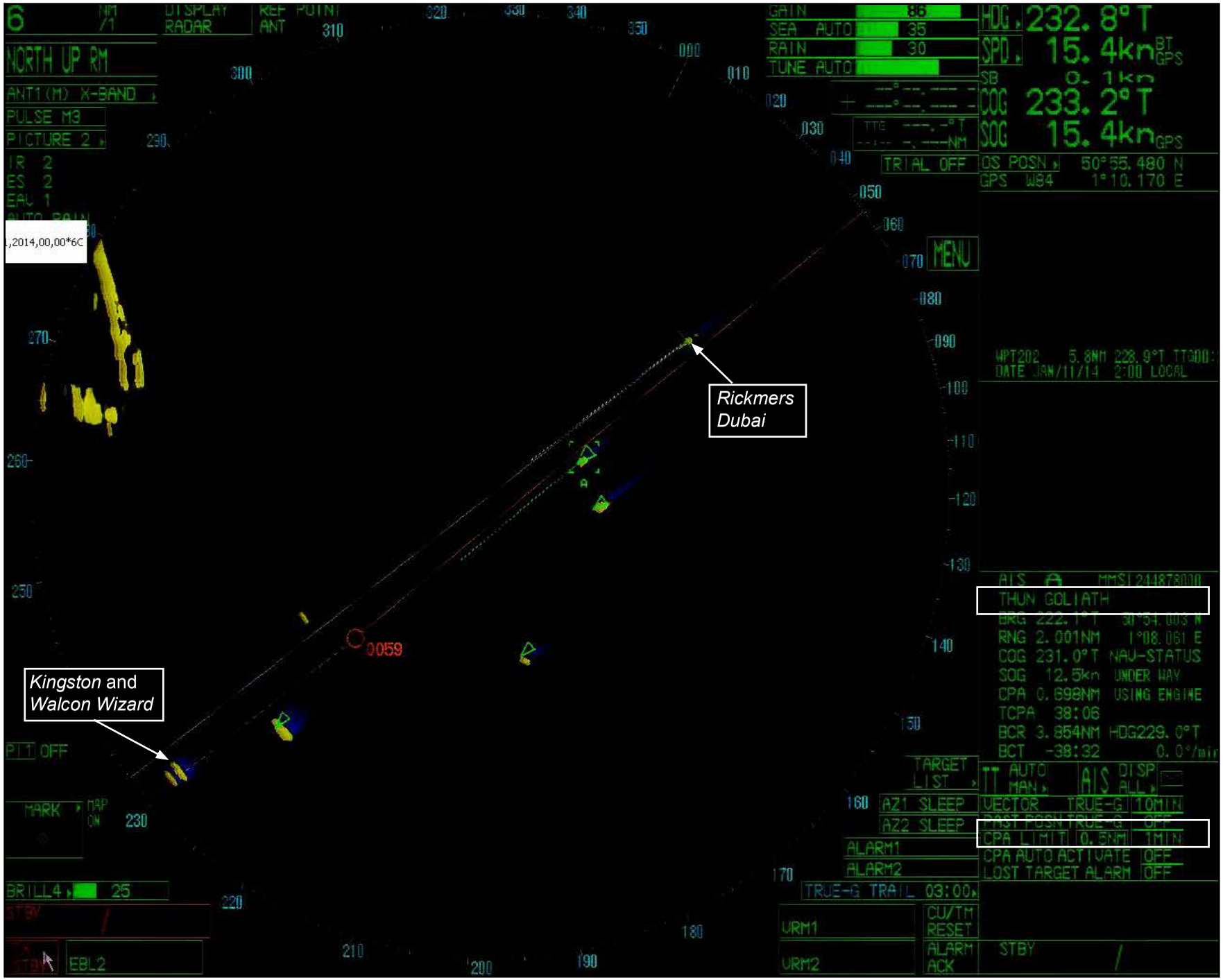

Figure 9: Radar display at 0100

1.4.4 Voyage data recorder

Information recorded by *Rickmers Dubai*'s VDR was saved when the vessel was at anchor off Newhaven. Review of the recorded data identified, amongst other things, that:

- The X-band radar display was set to the 6nm range scale and the origin was offset to the north east in order to extend the view ahead. By 0100, the radar targets of both *Kingston* and *Walcon Wizard* were visible at a range of 10nm **(Figure 9)**.
- The radar targets associated with *Kingston* and *Walcon Wizard* merged between 0147 and 0150 when at a range of about 1nm **(Figure 10)**.
- A radar alarm of 5 cables/1 minute was set on the ARPA for operator selected targets only **(Figures 9** and **10)**.
- *Thun Goliath* was the only AIS target selected after midnight **(Figures 9** and **10)**.
- No radar targets were acquired using ARPA.
- The vessel had been on a steady course and speed since 0100 and was approximately 3 cables to the north of its intended track.
- There was no crossing traffic in close proximity.
- The VHF radios were set to channels 11 and 16. Safety broadcasts transmitted by Dover Coastguard were loud and clear.
- No English was spoken on the bridge during the second officer's watch.
- There was no evidence of persons entering or leaving the bridge during the hour before the collision.
- Recorded music was being played throughout on the computer sited on the port side of the bridge **(Figure 7)**.

The VDR was saved by the vessel's crew to a Universal Serial Bus (USB) dongle, which was bright orange and labelled as 'only for use with the VDR'. When MAIB inspectors cloned the USB dongle, they identified that a movie had been deleted.

1.4.5 Safety management system and procedures

Rickmers Dubai's safety management certificate (SMC) was issued by Germanischer Lloyd on behalf of the Republic of Liberia, following an initial ISM audit on 17 January 2012. The audit identified three non-conformities and made three observations, none of which were related to navigation or bridge watchkeeping.

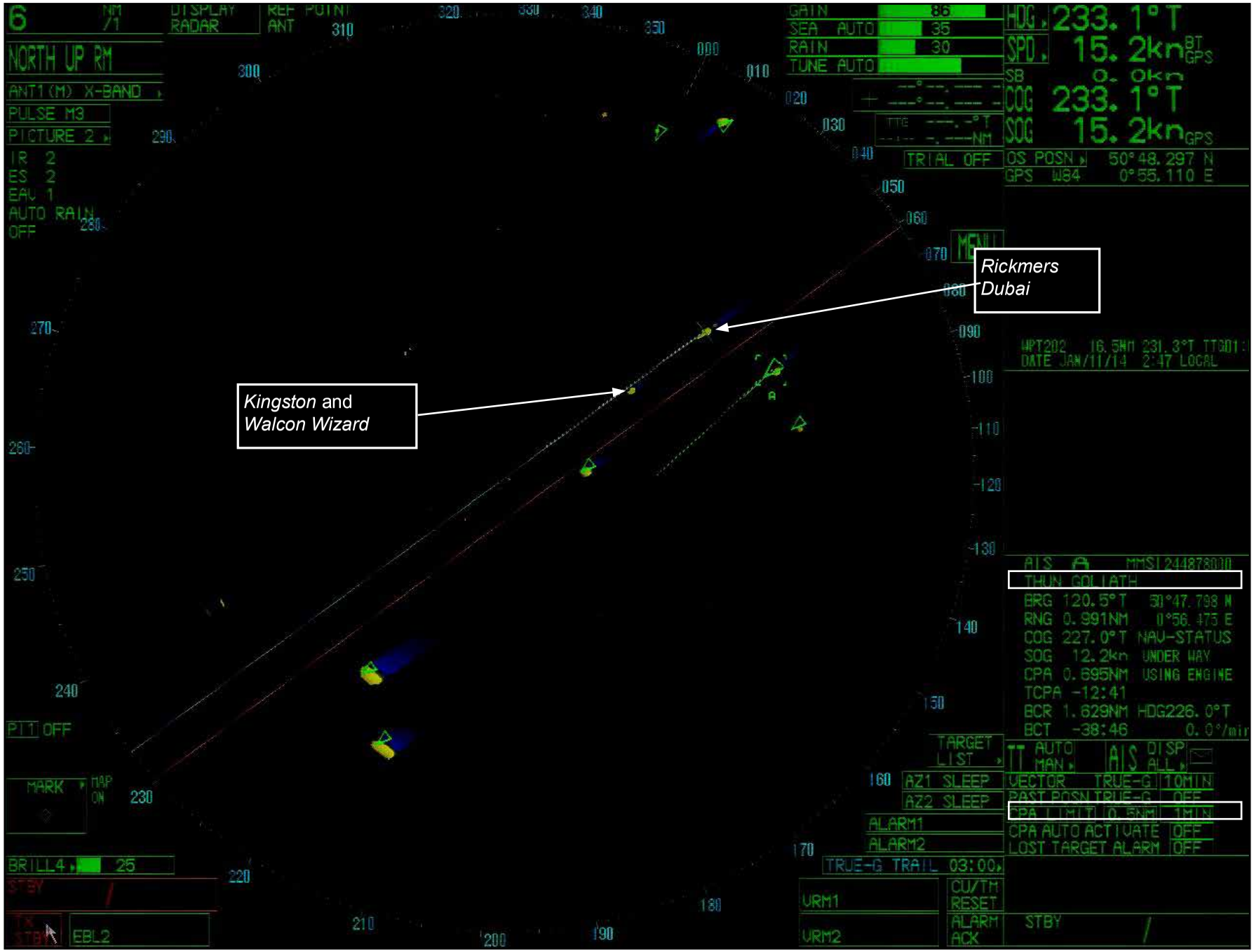

Figure 10: Radar display at 0147

Since the ship entered service in 2011, four internal audits had been completed, the last of which was on 8 January 2014. In general, the internal audits found the ship to be well maintained and run, and that the crew were familiar with the safety management system (SMS). In addition to the audits, the ship managers also visited its vessels, including *Rickmers Dubai*, whenever the vessels were in Hamburg.

Rickmers Dubai's SMS was detailed and included procedures for all aspects of shipboard operations. The navigation section included bridge standing orders **(Annex A)**, instructions for keeping a navigational watch **(Annex B)** and watch arrangements **(Annex C)**. It also warned about the dangers of navigators placing too much reliance on the ECDIS.

The SMS provided guidance on the posting of lookouts and required a watchman to be on the bridge in all conditions except in daylight when the vessel was in open water with clear visibility. In these situations, a watchman was still required to be readily available if needed. The watchman was primarily to be assigned as a lookout. The SMS left the need for the bridge watchman to conduct safety rounds to the master's discretion, but recommended that, in any case, the safety rounds be completed before or after a watch.

During the evening of 10 January 2014, the master had written night orders, which stated:

Approaching to the area with dense traffic and bad weather in Biscay Bay.

1. Always comply with the Colreg, Company and Master's standing orders.

2. Make all reports as required along our passage.

3. In Biscay during bad weather try to keep vessel on such courses to minimize pitching and rolling of the vessel.

4. In case of any doubts call master to the bridge immediately.

Good watch [sic]

1.5 *KINGSTON*

1.5.1 Management

Kingston was one of four tugs owned and managed by Griffin Towage & Marine, which provided towage and other marine services both around the UK and outside of UK waters. All of the company's tugs were certified under the Small Commercial Vessel and Pilot Boat (SCV) Code **(See paragraph 1.10)**.

In general, the tugs were crewed by a master and engineer; additional crew were employed as and when required. For voyages outside UK waters STCW[2] certified masters were temporarily appointed.

[2] STCW – International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended (STCW Convention)

1.5.2 History and certification

Griffin Towage and Marine purchased *Kingston* in 2001. A significant amount of repair work followed in order for the vessel to meet the requirements of the SCV Code. Extensive modifications were also carried out, including:

- The fitting of a hydraulically powered tow winch and associated structure in 2003 which resulted in a weight increase of approximately 8 tonnes (t).
- The addition of a bow thruster with a dedicated generator.
- The fitting of a new propeller with a Kort nozzle.
- The addition of an electrical generator for domestic use.

Kingston was last surveyed against the SCV Code by MECAL, a certifying authority (CA), in February 2013. A small commercial vessel certificate, valid for 5 years, was subsequently issued **(Annex D)**. Although greater than 24m in length, *Kingston* was permitted to be certified under the SCV Code as the definition of "small vessel" in the Code includes vessels less than 150 tons whose keel was laid before 21 July 1968.

1.5.3 Crew

Kingston's crew comprised a master, a mate, an engineer and a deckhand. At sea, the master kept a wheelhouse watch with the deckhand and the mate kept watch with the engineer. Each watch lasted 6 hours. At the time of the collision, the mate was on watch in the wheelhouse; the engineer was in the toilet. The master and the deckhand were in bed.

The master was 50 years old and had been employed on workboats, tugs and fishing vessels for all his working life. He held a commercially endorsed Yachtmaster Offshore CoC since 1999 and had been *Kingston*'s master for about 12 months. He was previously the master of the tug *Knighton*, also owned by Griffin Towage & Marine.

The mate was 39 years old and was Bulgarian. He held an STCW II/2 CoC, and since going to sea in 2001 he had served on board oil tankers and cargo ships. The mate joined *Kingston* in April 2013.

Kingston's engineer was an ex fisherman and he had worked for Griffin Towage & Marine for 3½ years. The deckhand had recently joined the tug on a temporary contract.

1.5.4 Wheelhouse equipment

Kingston's wheelhouse was small, with one seat positioned on the centreline. Navigation equipment **(Figure 11)** included:

- 2 radar displays (no ARPA capability)
- a differential global positioning system (DGPS)

- 2 VHF radios, one of which was fitted with digital selective calling (DSC)
- a Navtex receiver (no printing capability)
- a chart plotter
- a forward-facing chart table.

Figure 11: *Kingston* - wheelhouse

The master had installed his own personal computer in the wheelhouse, which contained an electronic chart system showing AIS information; the AIS receiver's antenna was temporarily positioned on the wheelhouse roof. *Kingston* was not fitted with an AIS transmitter.

At the time of the collision, one of the radar displays was set to the 1.5nm range scale with the other set on a greater range scale. Also, two paper charts were in use: British Admiralty (BA) charts 1406 and 2675. Both charts were worn and in one case ripped. Neither chart was corrected up to date. The tug's position was plotted hourly on a paper chart.

1.5.5 Towing arrangement

At build, *Kingston* was fitted with a towing hook, but when the towing winch was fitted, the towing hook was re-sited further aft. The towing hook was able to be released by a trigger that could be activated by attached ropes that were led to positions just aft of the wheelhouse on the port and starboard sides **(Figure 12)**.

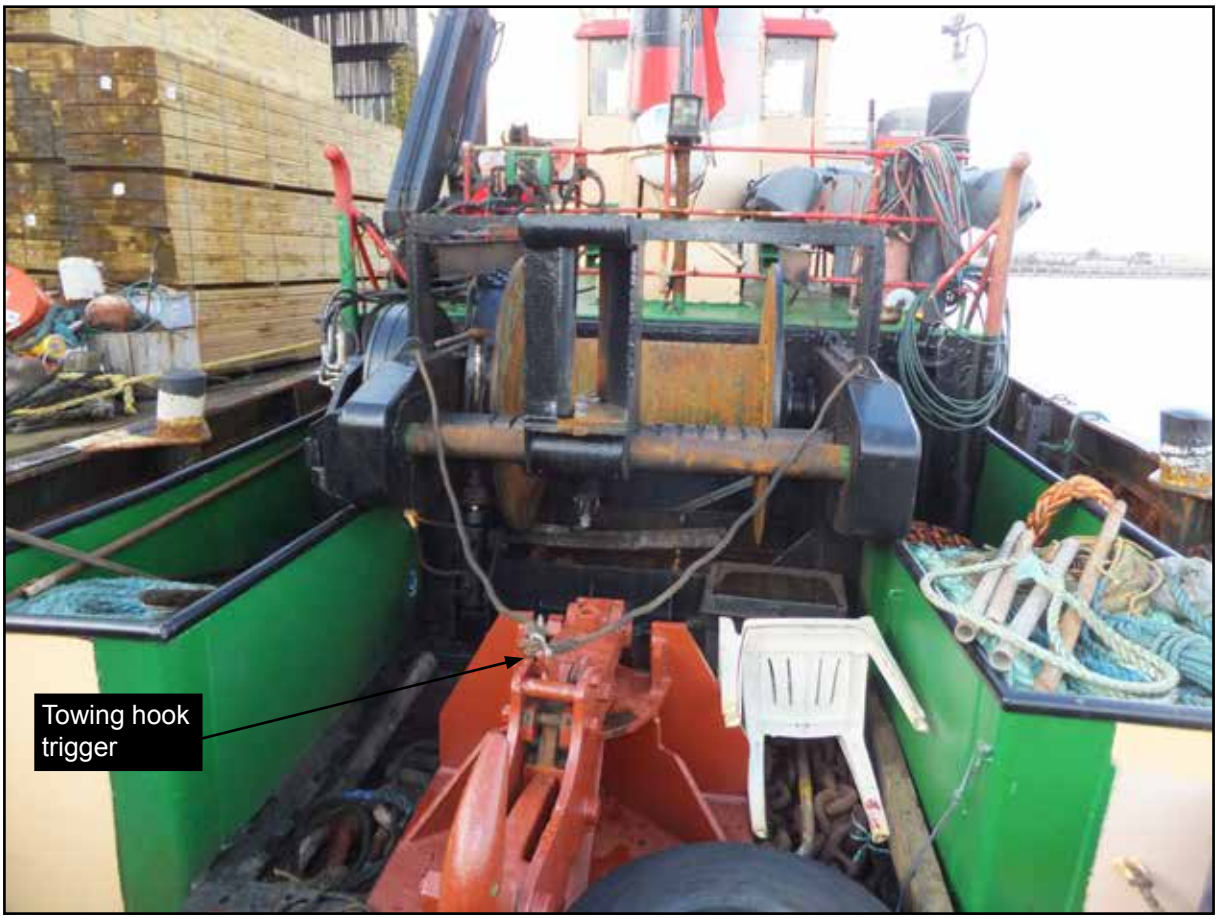

Figure 12: *Kingston* - towing hook release arrangement

The use of the tow hook was usually limited to harbour towing when the tow length was short. During testing in 2003, the tow hook held 35t and tripped correctly when under load. A further bollard pull test was conducted in 2005 that established, at full ahead, that *Kingston* could achieve a 23t pull.

For the passage from Ipswich to Southampton, the towline was secured to *Kingston*'s towing winch. This was usual practice when towing on passage where a longer tow was required. The towline was passed from the tow winch through a gob arrangement at the aft end of the deck. The gob arrangement consisted of a gob shackle and a gob rope[3] secured to bollards either side of the aft deck via a fairlead welded to the deck on the centreline **(Figure 13)**. A protective sleeve was fitted over the towline immediately aft of the gob shackle in order to prevent the wire from chafing on the aft deck. There was no formal record of inspection or certification for the gob rope.

1.5.6 Towing winch

The hydraulic towing winch **(Figure 14)** was tested to cope with a bollard pull of 30t. The winch was powered by a generator in the engine room, which also powered the foredeck winch. The tow winch was fitted with a hydraulically actuated band brake. The winch drum was fitted with 500m of 38mm diameter wire with a mean breaking load of 103t. The equipment associated with the towing winch was renewed in July 2013.

[3] The purpose of a gob rope is to ensure the towing point remains aft, thereby minimising the potential for the tug to be girted if the lead of the tow moves towards or on to the beam. On board *Kingston* the gob rope was a retired section of tow rope.

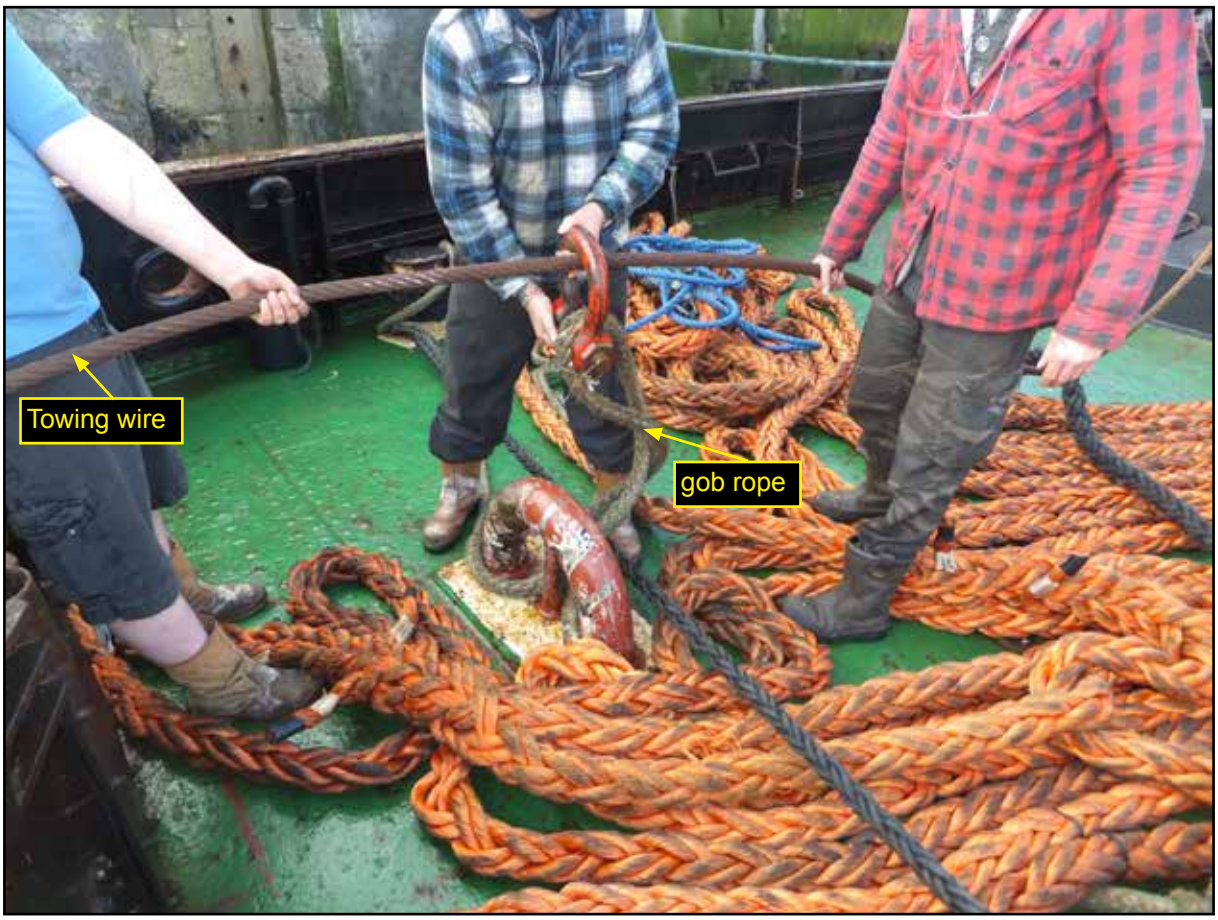

Figure 13: *Kingston* - gob rope arrangement

Figure 14: *Kingston* - towing winch

The towing winch was controlled from the aft end of the working deck **(Figure 15)**. With the spring-loaded lever (A):

- Pushed down - the winch brake released and the wire was heaved in.
- Centred - the winch brake was applied.
- Lifted - the winch brake released and the wire was veered.

To enable the winch to freewheel when setting the length of the tow, the by-pass valve lever (B) was lifted to the vertical position. The control lever (A) was also lifted to release the brake.

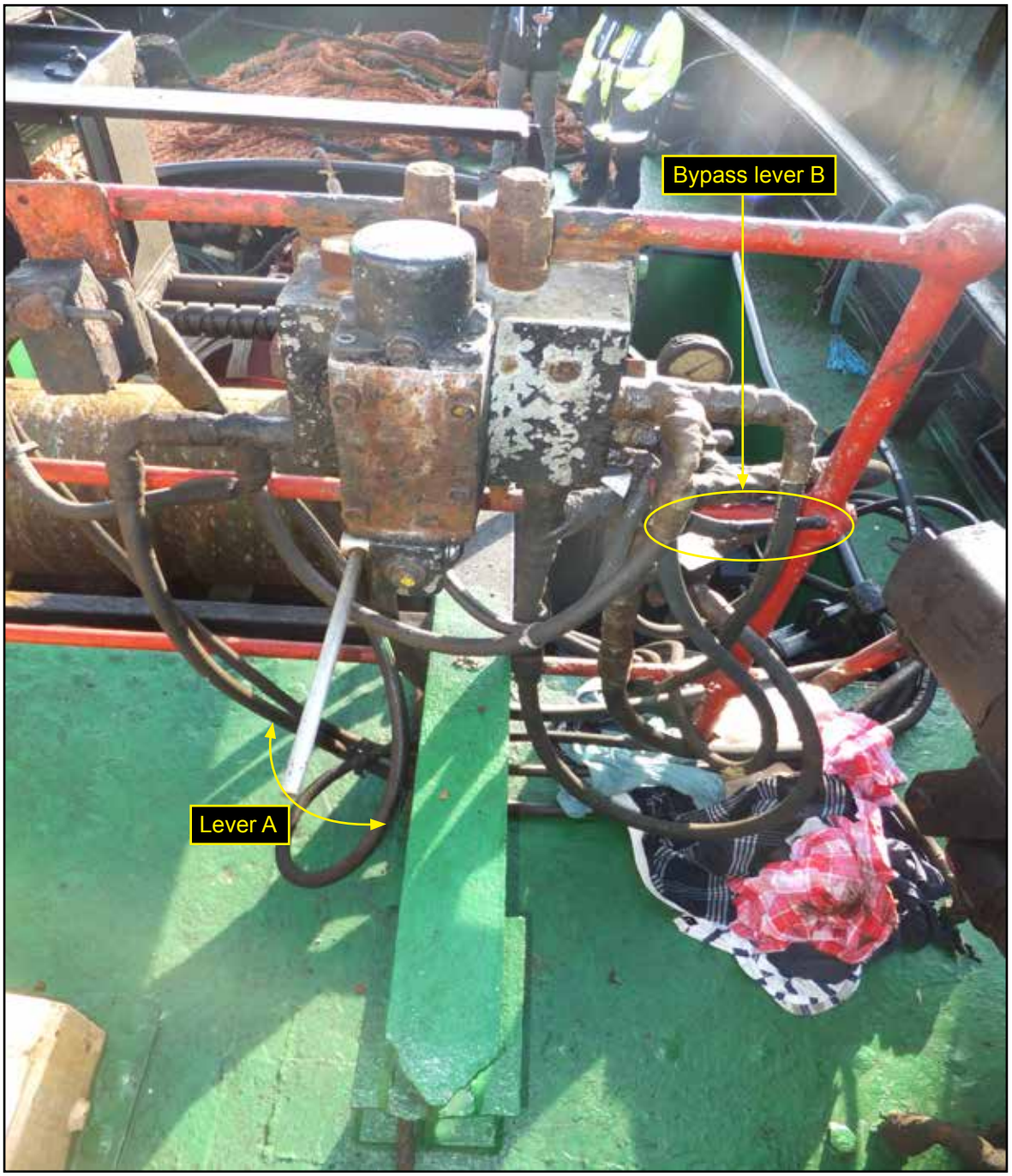

Figure 15: *Kingston* - towing winch hydraulic controls

Onboard instructions **(Annex E)** specified how the winch should be veered, hauled and freewheeled. They also required the crew to tighten the brake band manually using a ratchet spanner once the correct tow length had been achieved when conducting a 'serious pull'. The appropriate spanner was left on the nut ready for immediate use.

To release the tow in an emergency, the instructions were to lift the bypass lever and then manually loosen the brake in a clockwise direction until the wire veered. The instructions noted the emergency procedure could be followed without the hydraulics being switched on, but that about £10,000 of damage to the winch could result.

1.5.7 Towing lights

At the time of the accident, *Kingston* was displaying side lights, three masthead lights in a vertical line, a stern light and a towing light above the stern light **(Figure 16)**. A flood light, shining aft, also illuminated the towline.

Lights indicating that the vessel was restricted in its ability to manoeuvre (RAM)[4] were rigged from the cross-trees **(Figure 17)**. However, on the day before the accident the mate had discovered that the bulb in the white RAM light was defective. Consequently, the RAM lights were not in use. It is reported that the white RAM light had been unreliable for some time. This was thought to be due to a loose electrical connection which was affected by the vessel's movement.

1.6 *WALCON WIZARD*

*Walcon Wiza*rd was primarily used to maintain jetties and marinas. The barge was self-propelled and had a maximum speed of 8kts, but when on longer sea passages it was occasionally towed with no crew on board. *Walcon Wizard* was certified under the SCV Code up to category 3, which enabled the barge to operate at sea up to 20nm from a safe haven.

When the barge was struck by *Rickmers Dubai,* it was displaying light emitting diode (LED) side lights and a stern light that were visible from 3nm. Each light was supplied by its own battery.

[4] Three all-round lights in a vertical line. The highest and lowest of these lights being red and the middle light being white.

The term 'vessel restricted in her ability to manoeuvre' means a vessel which from the nature of its work is restricted in its ability to manoeuvre and therefore is unable to keep out of the way of another vessel. 'Vessels restricted in their ability to manoeuvre' includes a vessel engaged in a towing operation such as severely restricts the towing vessel and its tow in their ability to deviate from their course (see paragraph 1.7).

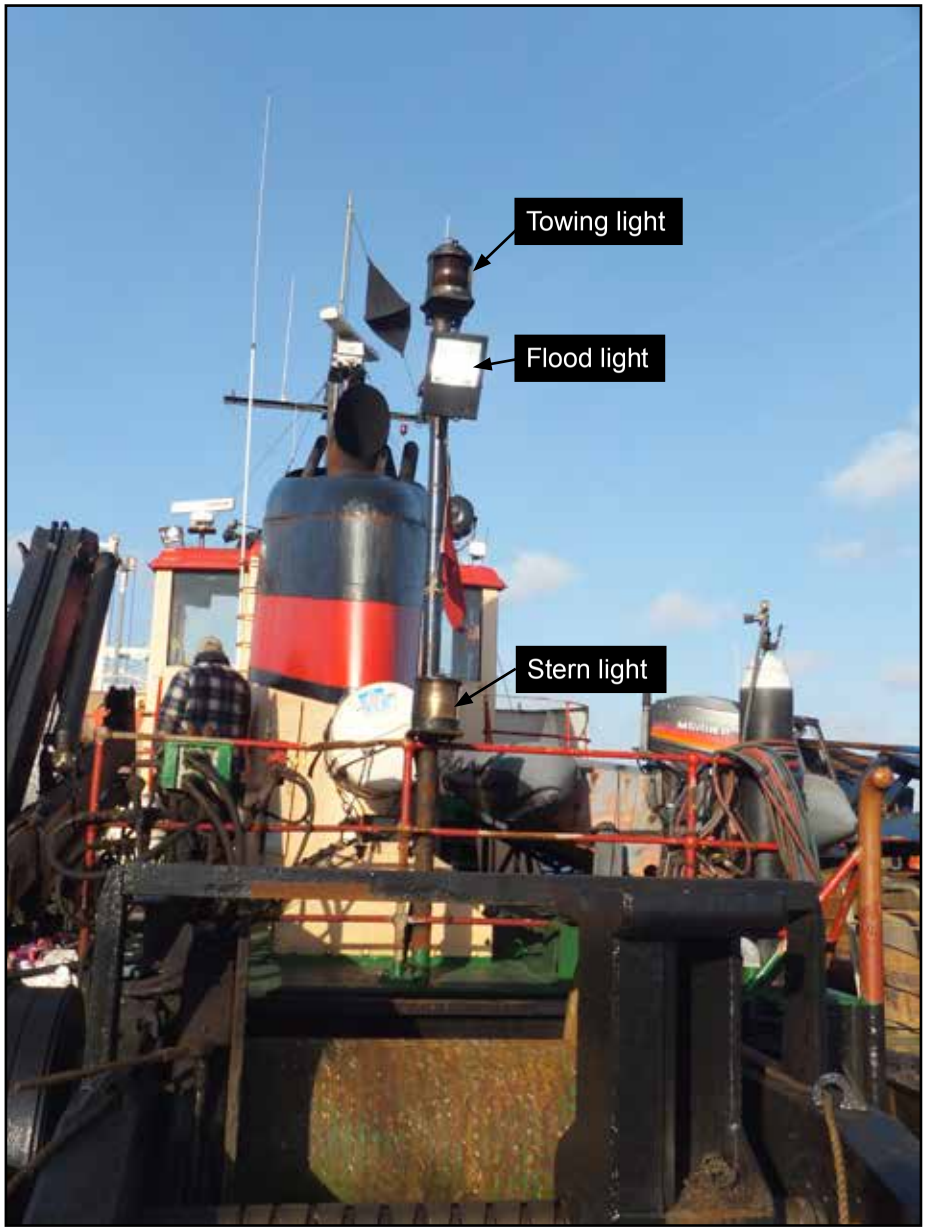

Figure 16: *Kingston* - lights aft

Figure 17: *Kingston* - Restricted in ability to manoeuvre lights

1.7 COLLISION REGULATIONS

The following summarised rules from the International Regulations for the Prevention of Collisions at Sea 1972 (COLREGS) are particularly relevant to this accident:

Rule 5 - Look-out

"Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions to make a full appraisal of the situation and risk of collision."

Rule 10 - Traffic Separation Schemes. This rule specifies the responsibilities between vessels operating in a traffic separation scheme including:

"(d) (i) A vessel shall not use an inshore traffic zone when she can safely use the appropriate traffic lane within the adjacent traffic separation scheme. However, vessels less than 20 metres in length, sailing vessels and vessels engaged in fishing may use the inshore traffic zone."

Rule 13 - Overtaking. This rule states that the overtaking vessel must keep out of the way of the vessel being overtaken.

Rule 24 – Towing and Pushing. This rule requires that a power-driven vessel when towing shall exhibit: (i) instead of the light prescribed in Rule 23 (a)(i) or (a)(ii), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow exceeds 200 meters, three such lights in a vertical line; (ii) sidelights; (iii) a sternlight; (iv) a towing light in a vertical line above the stern light.

The rule also requires that a vessel or object being towed, other than those mentioned in paragraph (g) of this Rule, shall exhibit: (i) sidelights; (ii) a sternlight. The required visibility of these lights is 2nm (Rule 22).

Rule 27(c) – This rule requires that a power-driven vessel engaged in towing operations such as severely restricts the towing vessel and her tow in their ability to deviate from their course shall display RAM lights and shapes.

1.8 THE CARRIAGE AND USE OF AIS

1.8.1 Carriage requirements

The International Convention for the Safety of Life at Sea 1974, as amended (SOLAS), requires all cargo ships of 300gt and over which are engaged on international voyages to be fitted with AIS. European Union (EU) Directive 2002/59/EC extended this requirement to all cargo ships greater than 300gt trading domestically as well as high speed craft. Directive 2009/17/EC, amending Directive 2002/59/EC, establishing a Community vessel traffic monitoring and information system, requires European Community fishing vessels of more than 15m length overall to operate an AIS at all times.

1.8.2 Guidance

International Maritime Organization

The International Maritime Organization (IMO) provided guidelines for the use of AIS in its Resolution A.917 (22). The guidelines include:

INHERENT LIMITATIONS OF AIS

31. The officer of the watch should always be aware that other ships, in particular leisure craft, fishing boats and warships, and some coastal shore stations including Vessel Traffic Service centres, might not be fitted with AIS.

32. The OOW should always be aware that other ships fitted with AIS as a mandatory carriage requirement might switch off AIS under certain circumstances by professional judgement of the master.

33. In other words, the information given by the AIS may not be a complete picture of the situation around the ship.

35. The accuracy of the information received is only as good as the accuracy of the AIS information transmitted.

36. The OOW should be aware that poorly configured or calibrated ship sensors (position, speed and heading sensors) might lead to incorrect information being transmitted. Incorrect information about one ship displayed on the bridge of another could be dangerously confusing.

38. It would not be prudent for the OOW to assume that the information received from the other ship is of a comparable quality and accuracy to that which might be available on own ship.

USE OF AIS IN COLLISION AVOIDANCE SITUATIONS

39. The potential of AIS as an anti collision device is recognised and AIS may be recommended as such a device in due time.

40. Nevertheless, AIS information may be used to assist collision avoidance decision making. When using the AIS in the ship to ship mode for anti collision purposes, the following precautionary points should be borne in mind:

a. AIS is an additional source of navigational information. It does not replace, but supports, navigational systems such as radar target tracking and VTS; and

b. The use of AIS does not negate the responsibility of the OOW to comply at all times with the Collision Regulations

41. The user should not rely on AIS as the sole information system, but should make use of all safety relevant information available

43. Once a ship has been detected, AIS can assist tracking it as a target. By monitoring the information broadcast by that target, its actions can also be monitored. Changes in heading and course are, for example, immediately

apparent, and many of the problems common to tracking targets by radar, namely clutter, target swap as ships pass close by and target loss following a fast manoeuvre, do not affect AIS. AIS can also assist in the identification of targets, by name or call sign and by ship type and navigational status.

The IMO guidelines for the use of AIS have been included in MGN 324 (M+F) – Radio: Operational Guidance on the Use of VHF Radio and Automatic Identification Systems (AIS at Sea), which was published in 2006.

1.9 KEEPING A NAVIGATIONAL WATCH

STCW 95 states *inter alia*:

Part 4-1 - Principles to be observed in keeping a navigational watch

17 In determining that the composition of the navigational watch is adequate to ensure that a proper lookout can continuously be maintained, the master shall take into account all relevant factors, including those described in this section of the Code, as well as the following factors:

.1 visibility, state of weather and sea;

.2 traffic density, and other activities occurring in the area in which the vessel is navigating;

.3 the attention necessary when navigating in or near traffic separation schemes or other routeing measures;

.4 the additional workload caused by nature of the ship's functions, immediate operating requirements and anticipated manoeuvres.

MGN 315 (M) Keeping a Safe Navigational Watch on Merchant Vessels, provides guidance for masters and officers in charge of a navigational watch and specifies:

- *"In certain circumstances of clear daylight conditions the Master may consider that the OOW may be the sole look-out."*
- *"The officer of the watch should notify the master when in any doubt as to what action to take in the interests of safety;"*

1.10 SMALL COMMERCIAL VESSEL CODES

Small commercially operated vessels that are registered in the UK must comply with the applicable code of practice for the sector in which they are engaged. The existing Codes are:

- The Safety of Small Commercial Motor Vessels – A Code of Practice (Yellow Code).
- The Safety of Small Commercial Sailing Vessels – A Code of Practice (Blue Code).
- The Code of Practice for the Safety of Small Workboats & Pilot Boats (Brown Code).

- The Code of Practice for the Safety of Small Vessels in Commercial Use for Sport or Pleasure Operating from a Nominated Departure Point (NPD) (Red Code).

In 2004, the MCA issued MGN 280 (M) Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats – Alternative Construction Standards, in order to harmonise the four small vessel codes. This Code, which is known as the SCV Code, has not yet been established in law but is accepted as an equivalent standard to the other Codes.

The MCA delegates the survey and certification of vessels to which the Code applies to authorised CAs.

Section 25.2 of the SCV Code provides specific requirements for vessels engaged in commercial towing **(Annex F)**. It covers stability, navigational lights and shapes, crew qualification, towing arrangements and watertight integrity. With regard to towing arrangements, the section includes:

25.2.2.2 The towing hook or towline should have a positive means of release which can be relied upon to function correctly under all operating conditions.

25.2.2.4 The release mechanism should be controlled from all conning positions and the hook itself. The local control at the hook should be of direct mechanical type capable of independent operation.

The section does not specifically cover the use of towing winches.

1.11 TOWING GUIDANCE

The British Tugowners Association (BTA) represents the interests of port towage operators from large corporate to small privately owned companies. The Association has developed training and guidance to improve safety in the tug industry. Its “Towing winch- quick release guide” is at **Annex G**.

Guidance on towing is also available in the IMO’s “Guidelines for Safe Ocean Towing” (published in December 1998) and in the MCA’s Code of Safe Working Practices (CoSWP).

1.12 CHANNEL NAVIGATION INFORMATION SERVICE

1.12.1 Purpose

The Channel Navigation Information Service (CNIS) was introduced in 1972 and provides a 24-hour radio and radar safety service for shipping in the Dover Strait. By collecting, recording and disseminating maritime information, the CNIS aims to provide the latest safety information to shipping in the CNIS area. CNIS is jointly provided by the UK and French Maritime authorities in Dover and Gris Nez respectively. In the UK, the MCA is responsible for the operation of CNIS, which it delegates to Dover Coastguard. A chart showing the area covered by the Dover Strait/Pas-De-Calais reporting system is at **Figure 18**.

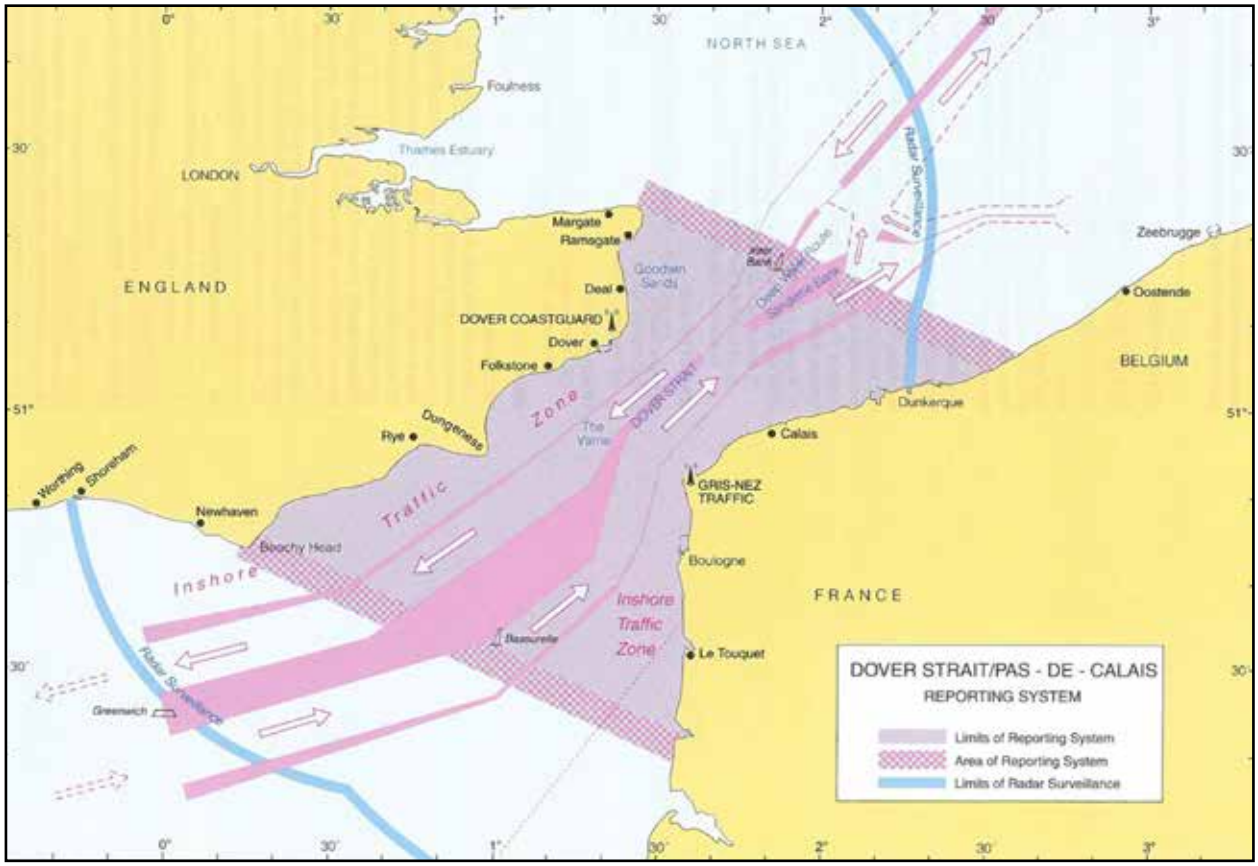

Figure 18: Dover Strait/Pas-de-Calais reporting system

1.12.2 Vessel traffic services

Merchant Shipping Notice (MSN) 1796, issued by the MCA in April 2006, designated vessel traffic service (VTS) stations in the UK in accordance with the Merchant Shipping (VTS Reporting Requirements) Regulations 2004. This notice defined the level of service available to shipping operating in designated VTS areas. Annex A of MSN 1796 designated the CNIS as an 'information service' which it defined as:

- *'A service to ensure that essential information becomes available in time for on-board navigational decision making'*

1.12.3 CNIS duties

The CNIS station within Dover Coastguard contains an array of displays showing integrated radar and AIS information that provide operators with a good situational awareness of shipping in the area. Operators also have access to VHF voice and digital selective calling (DSC) communication systems.

The CNIS operators' tasks include preparing and transmitting routine broadcasts as well as managing reports from ships entering the area. Vessels that are restricted in their ability to manoeuvre, vessels constrained by their draught, and vessels not under command are displayed in different colours to readily indicate their status.

Operators are able to zoom into different areas to monitor specific vessels or vessels in close proximity. Guard zone alarms can be set on fixed objects. CPA alarms can also be set globally, but not for individual vessels.

The CNIS station is continuously manned and, as well as monitoring the radar picture, the operator has to prepare and transmit routine service broadcasts at 40 minutes past the hour, and manage reports from ships entering the area.

1.12.4 Watch system

To provide 24 hour coverage, 365 days a year, Dover Coastguard operated a four watch system. The duty watch was responsible for four key functions: CNIS, Sunk VTS[5], the monitoring of VHF channel 16 and search and rescue (SAR). This requires a minimum of four qualified operators within each watch to be available at all times. However, it was policy to have six operators (including trainees) available for day watches[6] and five for night watches[7].

During the 12 hour shift, the aim was for operators to switch desks approximately every 2 hours to keep staff fresh and, with 5 staff on duty, it was possible to also schedule a 1-1.5 hour break.

The watch on duty overnight on 10 January 2014 comprised:

- a watch manager
- a watch manager from a different watch covering as a watch officer
- 2 watch officers

1.12.5 Actions before the collision

At 2246 on 10 January 2014, the third officer on board *Rickmers Dubai* called the CNIS at a designated reporting point **(Figure 18)** and relayed the vessel's destination, quantity of cargo and that the vessel had no damage or defects.

At 2342, Dover Coastguard issued an information safety broadcast on VHF channel 11. Included in the broadcast were warnings that two tugs engaged in towing were in the Dover Strait TSS: *Kingston* with a 250m tow and *Vortex* with a 330m tow. The safety broadcast was repeated at 0041. With regard to *Kingston*, the broadcast stated:

> *Tug and tow information……Also in the south-west lane, the Kingston is towing a barge, length of tow is 250m, current position 50°51.1' north, 001°01.7' east, and that's bearing 191°from the CS3 at a distance of 0.71nm, approximate track 231°and approximate speed 5.9kts.*

The safety information broadcast scheduled for 0140 was not made because the watch manager, who was manning the CNIS desk, had been busy dealing with reporting traffic and had forgotten. As 0200 approached, the watch manager was coming to the end of over 4 hours on the CNIS desk and was about to switch to the SAR desk. He did not notice the close proximity of *Rickmers Dubai* with *Kingston* and *Walcon Wizard.*

[5] The North Sea Sunk area VTS is operated by Dover Coastguard

[6] 0800 – 2000 local time

[7] 2000 – 0800 local time

1.13 SIMILAR ACCIDENTS

1.13.1 Dover Strait TSS – south-west traffic lane

The number of collisions and hazardous incidents (that resulted in a HAZREP report being issued)[8] in the south-west traffic lane of the Dover Strait TSS recorded by Dover Coastguard between 2009 and 2013 is at **Table 1**.

	2009	2010	2011	2012	2013
Hazardous Incident Reports	49	54	39	28	29
Collisions	0	1	2	1	2
Total of reporting vessels	39096	39125	39074	36804	35551

Table 1 – Collisions and hazardous incidents in the south-west traffic lane of the Dover TSS (Source: Dover Coastguard 2014)

The collision data has been collected from incidents involving merchant and/or fishing vessels. The total volume of reporting vessels includes those vessels that are required to observe the CALDOVREP mandatory reporting system. The figures do not include fishing vessels and yachts that due to their size are not required to report to Dover Coastguard.

1.13.2 Collisions while overtaking in the Dover Strait

The following collisions occurred in the Dover Strait TSS and were the subject of MAIB investigation reports.

- *Eastfern and Kinsale*

  On 25 September 2000, the bulk carrier *Kinsale* collided with the general cargo ship *Eastfern* in the south-west traffic lane of the Dover Strait TSS. *Kinsale* was the overtaking vessel and its OOW was preoccupied with other duties. He failed to see *Eastfern* ahead. The bridge lookout had left the bridge 20 minutes before the collision. (MAIB investigation report 18/2001.)

- *Ash* and *Dutch Aquamarine*

  On 9 October 2001, the chemical tanker *Dutch Aquamarine* collided with the general cargo vessel *Ash* in the south-west traffic lane of the Dover Strait TSS. *Ash* was holed in the collision, listed quickly to starboard, capsized and sank. The master of *Ash* drowned. Although the weather was fine and the visibility good, the OOW on *Dutch Aquamarine* did not notice *Ash* either visually or on radar until it was too late to avoid a collision. Although the OOW on board *Ash* had seen *Dutch Aquamarine* approaching from astern he was

[8] A HAZREP is a notification of an apparent breach of a COLREG other than rule 10. The data in the table represents both reported and unreported incidents. A reported incident is where a vessel makes a complaint about the conduct of another. An unreported incident is one in which two vessels are involved in an apparent close quarter situation where neither vessel makes a complaint about the other.

distracted by a mobile phone call minutes before the collision. *Ash* had been overtaken at a distance of only 0.1nm previously so the OOW assumed that *Dutch Aquamarine* might do likewise. (MAIB investigation report 7/2003.)

- *Spring Bok* and *Gas Artic*

  On 24 March 2012, the general refrigerated cargo ship *Spring Bok* collided with the liquefied petroleum gas tanker *Gas Arctic* in the south-west traffic lane of the Dover Strait TSS in visibility of less than 2nm. There were no injuries or pollution, but both vessels suffered structural damage. Although both OOWs had detected and identified the other vessel by radar and AIS, neither OOW made a full appraisal of the risk of collision, nor took appropriate action to prevent the collision. Even though both vessels' SMSs required additional safety precautions in visibility less than 3nm, neither posted a lookout nor sounded signals. Cumulative fatigue was also considered a contributory factor in the decision making of the OOW on *Spring Bok*. (MAIB investigation report 24/2012.)

1.13.3 Collisions involving tug and tows

The following case was the subject of a preliminary examination by the MAIB in 2006 and involved a fishing vessel colliding with a tug and tow.

- *Natalie* and *Bay Protector*

  On 12 August 2006, the fishing vessel *Natalie* collided with an unlit barge that was being towed by the tug *Bay Protector*. The barge lights had failed and the tug did not issue any warnings via VHF radio. Neither of the skippers involved used all the available means to assess if there was a risk of collision.

1.13.4 Tug capsize accidents

The following MAIB investigations of the capsize of tugs while towing identified safety issues regarding the use and/or effectiveness of towline emergency release mechanisms.

- *Flying Phantom*

  On 19 December 2007, *Flying Phantom* girted and sank with the loss of three crew while operating as a bow tug in thick fog. Although activated, the tow winch emergency release was slow to operate, resulting in the tug capsizing and the tow rope parting. As the engine room watertight door was left open, rapid downflooding followed. The investigation also identified that crew training and the procedures to operate in the conditions encountered were inadequate. Recommendations were made to CAs to develop a standard for towline release systems and to ensure that the systems were tested. (MAIB investigation report 17/2008.)

- *Ijsselstroom*

  On 14 June 2009, *Ijsselstroom* was operating as a stern tug, running astern, with a single wire connected over the stern to a large barge. The tug skipper had intended to maintain his position and heading by using differential thrust on his two engines. As the tug towing the barge increased speed, *Ijsselstroom* yawed uncontrollably. The tug sheered, girted and then sank. The tug's crew were rescued. It was identified that the tow speed was too fast, no gob rope or bridle was in use to prevent the tug girting, and that the towline emergency release system was not operated. (MAIB investigation report 4/2010.)

- *Chiefton*

  On 12 August 2011, *Chiefton* capsized and foundered following a collision with a crane barge it was towing on the River Thames. One crewman died. The inability to lengthen the tow placed *Chiefton* in danger when transiting at high speed. Also, the tow hook emergency release was not used and, even if it had been, it would probably have been ineffective. Poor watertight integrity allowed rapid downflooding, which led to the loss of the tug.

  A recommendation to the MCA resulted in the issue of a surveyor's advice note (SAN) 57 in December 2013 which was aimed at ensuring that surveyors' checklists included a test of the emergency release system from all operating positions **(Annex H)**. (MAIB investigation report 12/2012.)

SECTION 2 - ANALYSIS

2.1 AIM

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

2.2 THE COLLISION

As *Rickmers Dubai*'s heading was altered to port at 0154, in order to cross under *Kingston*'s stern, *Walcon Wizard* was very close off the cargo ship's port bow **(Figure 19)**. The cargo ship's port bow struck the crane jib protruding from the stern of *Walcon Wizard*, causing the jib to buckle. The cargo ship's port bow then made heavy contact with the barge's superstructure causing considerable damage **(Figure 4)**. As *Walcon Wizard* passed down the port side of *Rickmers Dubai*, the cargo ship's bow snagged the towline between the barge and *Kingston* **(Figure 20)**.

On board *Kingston*, the lead of the towline quickly changed from astern to ahead, as *Rickmers Dubai* passed by. The gob rope prevented the tug from girting but *Kingston* was pulled through 180º and was then towed stern-first at 14kts, almost the same speed as the cargo ship.

At such a speed, it is not surprising that the tug's aft deck was quickly awash and that the tow winch brake started to render. As the wire was pulled from the tow winch, the resulting back pressure in the winch's hydraulic system caused joints to rupture. The smoke on the deck was caused by the tow winch brake overheating.

After the end of the towline had been pulled completely from the tow winch drum, it dropped to the seabed. *Rickmers Dubai* sailed on, leaving *Walcon Wizard* anchored by the wire towline with *Kingston* stopped in the water heading towards the north-east. In the circumstances, it was extremely fortunate that *Kingston* did not capsize and that none of its crew were injured.

2.3 *RICKMERS DUBAI*

2.3.1 Lookout

Before the collision, the radar targets associated with *Kingston* and *Walcon Wizard* were clearly painting on the X-band radar display on *Rickmers Dubai*'s bridge for nearly 55 minutes **(Figure 9)**. Also, as the cargo ship was closing the tug and tow with a speed advantage of approximately 9kts **(Figures 1**, **2** and **3)**, and the range of the lights fitted on board *Walcon Wizard* was 3nm, the aft lights on the tow would have been visible from *Rickmers Dubai* for at least 20 minutes before the collision. Therefore, *Rickmers Dubai*'s OOW had ample time to detect, assess and take avoiding action. However, it is evident from his alteration to port when only 2 cables from the tug, and his failure to see *Walcon Wizard* at all, that the OOW had not been keeping a proper lookout and had only seen the tug just before he altered. Although at the time of the alteration the barge's lights were possibly obscured by the port side deck cranes **(Figure 8)**, they would have been clearly visible beforehand despite the moderate to rough seas.

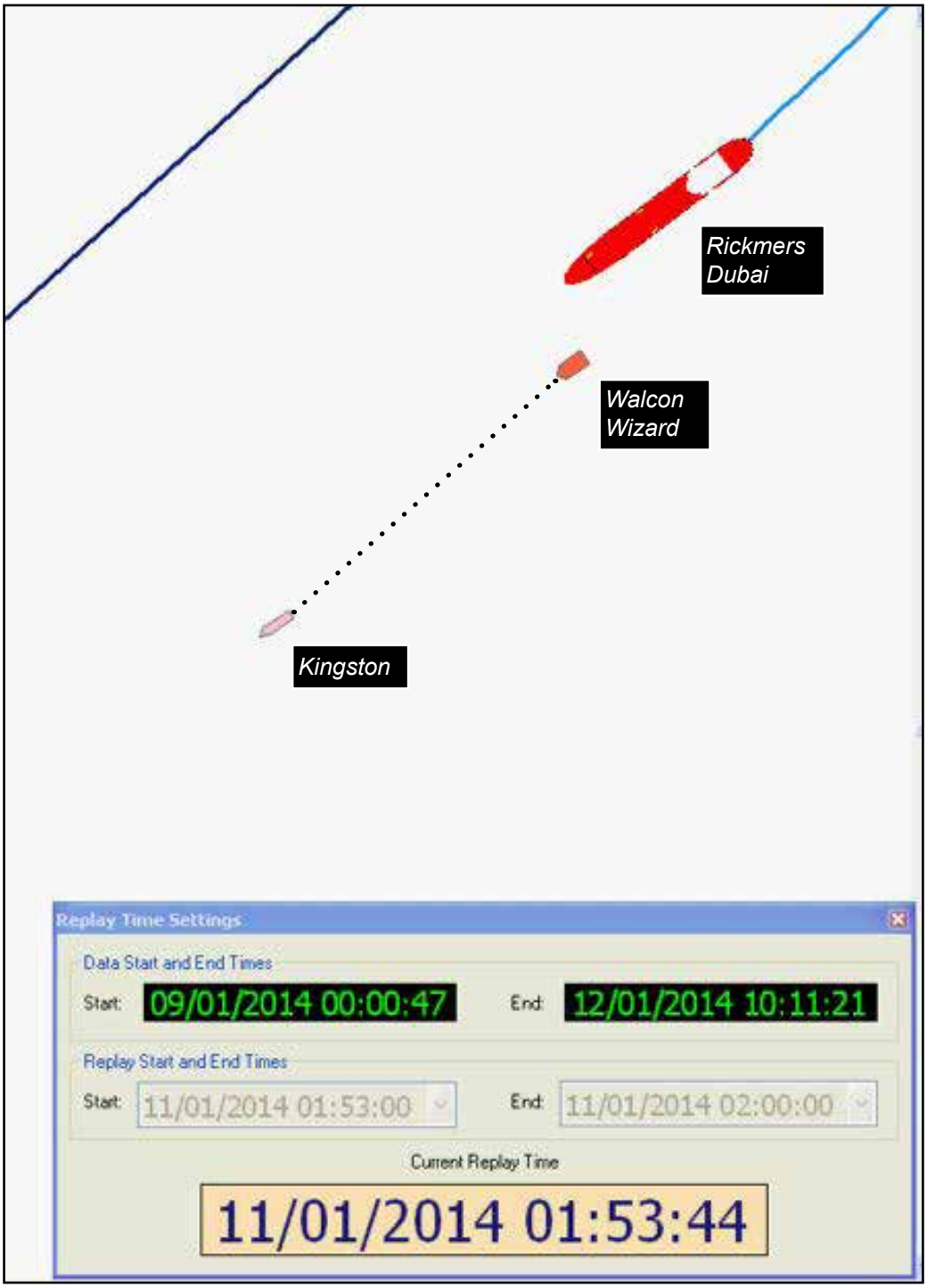

Figure 19: Simulation of the situation at 0153:44

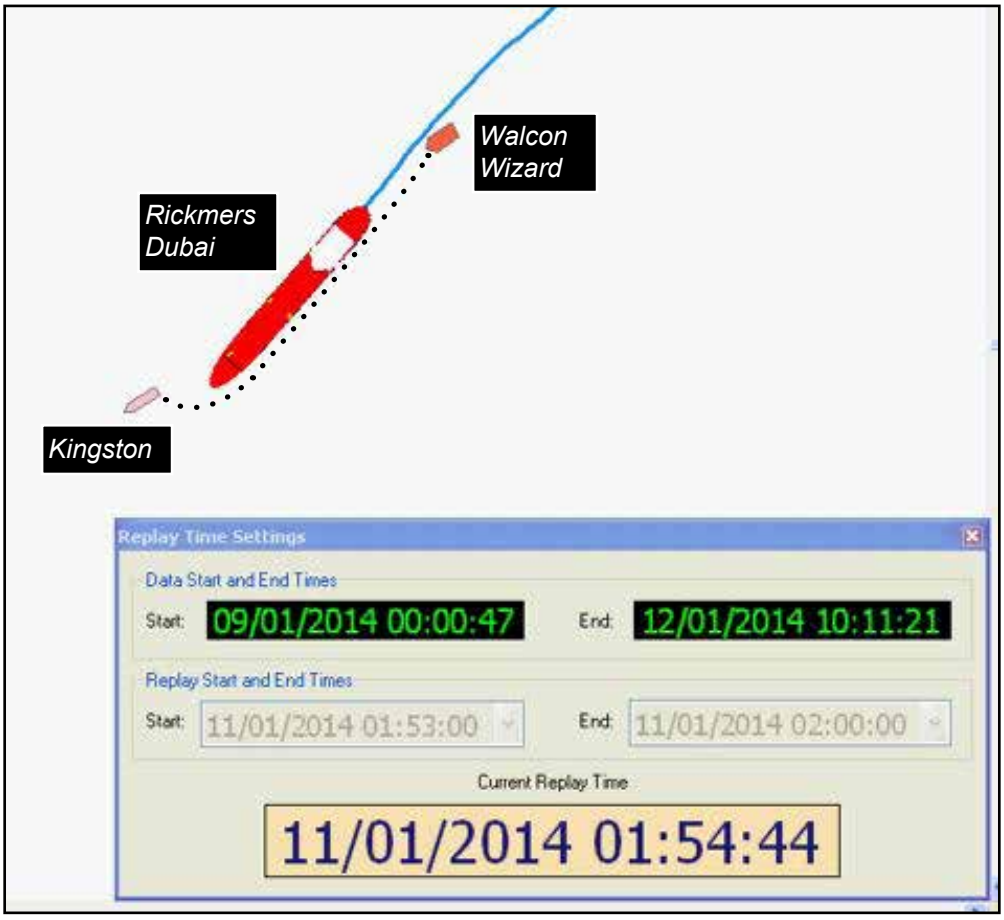

Figure 20: Simulation of the situation at 0154:44

2.3.2 Visual assessment

When *Rickmers Dubai*'s OOW saw *Kingston*'s lights ahead, it is evident that he did not associate the tug's lights with a vessel engaged in towing. This was possibly because although *Kingston* was showing a towing light above its stern light, these lights were potentially difficult to see due to the glare from the floodlight sited between them **(Figure 16)**. In addition, the three masthead lights indicating a tow over 200m in length would not have been visible from astern[9]. Consequently, as the tug was also not displaying lights to indicate that it was restricted in its ability to manoeuvre, and the OOW did not see *Walcon Wizard*, his avoiding action was based on his assumption that *Rickmers Dubai* was overtaking a single vessel, not a tug and its tow.

2.3.3 Reliance on ECDIS and AIS

In view of *Rickmers Dubai*'s OOW's comments to Dover Coastguard following the collision **(paragraph 1.2.2)**, which highlighted that *Kingston* had not been transmitting on AIS, it is almost certain that his late detection of *Kingston* and his ignorance of the proximity of *Walcon Wizard* were due to his reliance on AIS information shown on the ECDIS.

[9] A masthead light is required to be visible from right ahead to 22.5º abaft the beam on either side of the vessel (namely an arc of 225º)

ECDIS is capable of providing a wealth of information to the user, including charts, waypoints, safe water and overlaid AIS information. However, it is not a 'one-stop shop' which is able to provide all of the information required by an OOW. ECDIS must be used in conjunction with other aids to navigation and collision avoidance, particularly radar and visual lookout.

In this case, the OOW had set up the X-band radar display at the start of his watch. However, VDR evidence **(paragraph 1.4.4** and **Figures 9** and **10)** indicates that the OOW did not see the radar targets of *Kingston* and *Walcon Wizard*, or that he saw them but did not acquire them using ARPA. The absence of AIS information for the radar targets associated with *Kingston* and *Walcon Wizard* should have prompted the OOW to use ARPA to determine if a risk of collision existed. The detection of radar targets directly ahead and closing should also have prompted the OOW to look out of the window and attempt to correlate the targets with visual information. As the OOW took neither of these actions, and the targets were on the X-band display for almost 1 hour, it is likely that the OOW was not monitoring the radar display at all.

The guidance issued by the IMO and the MCA regarding the use of AIS in collision avoidance **(Paragraph 1.8.2)** highlights its advantages and disadvantages, and a balance needs to be struck between over-reliance and effective use. To achieve such a balance, it is important that OOWs are fully aware of the system's capabilities and limitations. In this case, the second officer's reliance on the AIS information displayed on ECDIS for collision avoidance strongly indicates that he was not aware that many vessels, such as small fishing vessels, leisure craft, warships and vessels under 300gt might not be displayed.

2.3.4 OOW stimulation

Until seeing *Kingston*, *Rickmers Dubai*'s second officer's bridge watch had been quiet and uneventful. The ship was near to its intended track and the adjacent vessels were all heading in the same direction **(Figures 1**, **2**, **3)**. Other than selecting the AIS target of *Thun Goliath* on the X-band radar display, there is no evidence of the OOW's other activities. In short, he appears to have been largely inactive until he altered course to port to avoid *Kingston*. The music playing on the bridge throughout the watch, the ease of monitoring the information available on the ECDIS, the lack of a periodic alarm from the BNWAS, and the absence of the watchman would all have contributed to the OOW's 'relaxed' state.

Although the OOW was well rested and did not feel tired, research has shown that alertness and performance tend to be at their lowest during the early hours of the morning. The human circadian rhythm is synchronised with the normal pattern of daytime wakefulness and sleep at night. Therefore, given that the collision occurred at 0154 (0254 ship's time), it is likely that, although the OOW might not have fallen asleep, his level of arousal was low. Consequently, the second officer was not proactive in maintaining his situational awareness or reactive to changing circumstances. This is supported by his failure to use radar or ARPA and to keep an effective visual lookout.

2.3.5 Use of a watchman

Transiting the Dover Strait is a demanding passage that presents a series of significant navigational hazards for shipping, including dangerous shallows and a high traffic density. However, the area is well surveyed and charted, dangers are marked by navigation aids and it is closely monitored by VTS stations in the UK and France. Nevertheless, it is coastal navigation and requires a high state of alertness and the ability to react quickly to the potential dangers.

Although the passage through a TSS is not specifically covered in the watch arrangements detailed in *Rickmers Dubai*'s SMS **(Annex C)**, the potential dangers of heavy traffic and the proximity of navigational hazards warranted a cautious approach **(paragraph 1.9)**, particularly regarding the use of lookouts. However, this was not reflected in the master's night orders **(paragraph 1.4.5)**, which focused on the passage across the Bay of Biscay rather than the precautions required in the Dover Strait.

At the time of the collision, the AB nominated as the watchman was not on the bridge. It was reported that he had been on the bridge and had informed the OOW of lights ahead of the ship before he left to conduct safety rounds. However, there is no evidence on the VDR to support this. Furthermore, even if the watchman had been on the bridge for most of the second officer's watch, his departure to conduct safety rounds as the cargo ship was about to overtake another vessel at close quarters was ill-timed.

Rickmers Dubai's manning level was greater than the minimum permitted by her safe manning certificate and the number of ABs carried on board was sufficient to allow the provision of a bridge watchman without detriment to other work. Therefore, there was no reason why a watchman could not have been on the bridge throughout the night.

It is impossible to determine whether the watchman's presence on the bridge would have assisted the OOW in making a more accurate assessment before altering towards *Walcon Wizard*. However, it would have increased the probability of the tow as well as the tug being seen. His presence possibly would also have helped to keep the OOW alert.

2.3.6 Emergency response

The response of *Rickmers Dubai*'s crew following the collision was slow and lacked rigour. The OOW's initial lack of appreciation of what had happened reflected his low state of arousal. His subsequent actions also indicate that either he continued not to appreciate the seriousness of the situation, or that he lacked integrity.

After the OOW had reduced speed on hearing the broadcast on VHF radio by *Kingston*'s mate and replying immediately when called by Dover Coastguard, he then made no attempt to establish whether *Kingston*'s crew were safe and made no offer of assistance. He also increased speed 17 minutes after the collision without having informed the master of the occurrence, despite the potential seriousness of the situation and being prompted to do so by the chief engineer. The OOW also did not take any action to establish whether the cargo ship was damaged.

It was only after the chief officer had taken over the bridge watch that a visual search for damage from the deck was conducted. However, the chief officer did not inform the master of the collision until the vessel was instructed by Dover Coastguard to leave the TSS and to anchor.

Even when the master arrived on the bridge and arranged for a more thorough damage assessment, the damage to the bow **(Figures 5** and **6)** was not identified until MAIB inspectors arrived on board 7 hours later as damage this far above the waterline was not anticipated and sea conditions were unsuitable to launch the ship's rescue boat. In the circumstances it was fortunate that the damage to *Rickmers Dubai* was not more serious and that the vessel was ordered to anchor. Otherwise, the vessel could have easily encountered difficulties in rough seas in the Bay of Biscay as it continued on passage to Genoa.

2.4 TUG AND TOW VISIBILITY

2.4.1 AIS

The importance and use of AIS as an aid to collision avoidance and navigation safety has increased significantly since its introduction. Indeed, the use of AIS on board *Rickmers Dubai* and on board other vessels[10] shows that many OOWs are using it as the primary aid for collision avoidance. Therefore, notwithstanding the obligations of OOWs to maintain a proper lookout and use all available means to determine if a risk of collision exists, in some circumstances the carriage and use of AIS by vessels that are not required to do so, potentially has significant benefits.

Many skippers of small fishing vessels, other small commercial vessels and leisure craft users have already fitted AIS to enable their vessels to be seen by other vessels and also to establish what vessels are nearby and their likely intentions. Both *Kingston* and *Walcon Wizard* were less than 300gt and therefore neither vessel was required to carry or transmit on AIS. Nonetheless, *Kingston*'s skipper had recognised the benefits of AIS by providing his own AIS receiver integrated with his chart PC. Unfortunately, the installation was of limited use as it was only capable of receiving AIS data and its reception of AIS signals was poor.

In this case, *Kingston* and *Walcon Wizard* were required to follow the traffic lane in the Dover Strait TSS where, given their slow speed, it was inevitable they would be frequently overtaken by larger vessels. The potential danger of the tug and tow was recognised by Dover Coastguard, which it intended to include in its hourly safety broadcasts, and *Kingston*'s master biased his vessel's track to the northern edge of the traffic lane in order to keep out of the way of other traffic as much as possible. 'Towing lights' were also displayed. However, had AIS information been transmitted from one or both of these vessels, the probability of them being noticed at an early stage by *Rickmers Dubai*'s OOW would have been increased significantly. The status of the vessels being engaged in towing could also have been indicated.

[10] e.g. MAIB investigation report of the collision between *Paula C* and *Darya Gayatri* in the Dover Strait on 11 December 2013 (MAIB investigation report 25/2014)

2.4.2 Navigation lights

The glare from the floodlight on *Kingston*'s stern potentially obscured the tug's towing and stern lights **(Figure 16)**. Consequently, when *Rickmers Dubai*'s OOW eventually saw *Kingston*'s aft lights (but did not see *Walcon Wizard*), he was completely unaware of the status of the vessel ahead.

In addition, *Kingston'*s all-round RAM lights were not available for use due to the defective white light. However, although the RAM lights would have provided further indication to *Rickmers Dubai*'s OOW that a tug and tow lay ahead, they were only required to be displayed on board *Kingston* when the towing operation severely restricted the tug and tow's ability to deviate from their course. It is common to see many tugs engaged in towing operations routinely display RAM lights and shapes but, in this case, there is no evidence to indicate that *Kingston* would have had any difficulty in manoeuvring to keep clear of other vessels or navigational dangers.

2.5 TOWLINE RELEASE

After the towline caught on *Rickmers Dubai*'s bow and its lead to *Kingston* moved from the tug's stern to ahead, the gob rope undoubtedly prevented the tug from capsizing. However, being towed rapidly stern first was potentially hazardous and the uncontrolled release of the towline from the drum caused significant damage to the winch and its hydraulics. Given the system's design, this could not have been avoided.

The 'free-wheeling' procedure **(Annex E)** was the easiest method of veering and releasing the tow line. However, the procedure required the tug's hydraulics to be running. In situations in which hydraulic power was not available or could not be started without an acceptable delay, the 'emergency free-wheeling' procedure **(Annex E)** required lifting the free-wheel valve and then manually loosening the brake band from a position behind the winch. This was a lengthy and hazardous process requiring a crewman to reach round the winch drum to use the ratchet spanner **(Figure 14)**. Therefore, the process was unsuitable for use in all operating conditions as required by the SCV Code **(Annex F)** and as advised by the BTA **(Annex G)**. The procedure was certainly not suitable for use in an emergency in the dark and in rough seas.

The SCV Code also required the '*release mechanism to be controlled from all conning positions and at the hook itself*'. In this respect, the wording of the Code is ambiguous and it could be interpreted to mean that the requirement only applied to a tow hook release mechanism. SAN 57 **(Annex H)** also refers to '*Towing hook functionality and survey'*. In this case, *Kingston*'s towing arrangements had been last approved by MECAL in February 2013. However, although the tug's tow hook could be released from outside the port and starboard wheelhouse doors, as well as at the hook itself **(Figure 12)**, the inability to release the towline from the tow winch in an emergency is of concern. The circumstances of this accident, together with others which have resulted in the capsize of tugs **(paragraph 1.13.4)**, indicate there is a strong case for the emergency release arrangements for towing gear to be more clearly articulated at the earliest opportunity.

2.6 SAFETY MANAGEMENT

2.6.1 *Rickmers Dubai*

The SMS on board *Rickmers Dubai* was comprehensive and the limited number of internal and external audits conducted of *Rickmers Dubai*'s SMS had not identified any shortcomings with the crews' compliance. However, the circumstances of this accident, particularly the OOW's ineffective lookout, his reliance on AIS and ECDIS, the absence of the watchman from the bridge and the actions taken following the collision, indicate that the safety culture among the bridge watchkeeping officers was still embryonic. This is also supported by the fact that the BNWAS was switched off.

The effective audit of bridge watchkeeping practices is a problem faced by all ship managers, which is not easily solved. The onus of setting standards on ships' bridges rests chiefly with the masters, but some managers have adopted the use of 'sea-riders' or the periodic scrutiny of VDR data, both of which are useful to some degree. Irrespective of the methods used, it is evident that *Rickmers Dubai*'s ship manager must adopt a more robust approach to developing a positive safety culture on board its vessels if the disconnection between its intent and the behaviour of its vessels' crews is to be addressed successfully.

2.6.2 *Kingston*

Kingston was not required by the SCV Code to maintain an SMS. Nonetheless, in view of the nature of the vessel's operations and the inherent risks involved, the provision of suitable equipment and instructions for key operations was prudent. In this respect, instructions had been provided for, among other things, connecting barges, the operation of the tow winch and passage planning. However, a more considered approach to safety might have assisted in preventing *Rickmers Dubai*'s collision with *Walcon Wizard*, reducing *Kingston*'s risk of capsize and minimising the damage on board. In particular:

- The provision of AIS would have enhanced the vessel's safety when transiting busy waters.

- In view of the importance of the gob rope to the tug's safety when towing, the use of a dedicated rope, properly certificated and regularly inspected, would have been more appropriate than a retired piece of towline.

- The instructions for the operation of the tow winch were not practical. For example, they required that the brake be tightened before conducting a significant tow. Had this instruction been followed, the outcome of this accident could have been significantly worse.

2.7 ROLE OF CNIS

The CNIS provides an important service to vessels in the Dover Strait. The circumstances of this accident and other recent MAIB investigations,[11] indicates that a shortage of operators has occasionally adversely affected its effectiveness. In this case, as only four operators were on watch, instead of five, their ability to rotate between different functions and to take breaks was reduced. Consequently,

[11] Notably the grounding of the chemical tanker *Ovit* on the Varne Bank in the Dover Strait on 18 September 2013 – MAIB investigation report 24/2014.

the CNIS operator at the time of the collision had been busy on the CNIS desk by himself for almost 4 hours. In such circumstances, it would have been very difficult to maintain concentration. This contributed significantly to his oversight when he forgot to issue the safety broadcast at 0140. It also possibly contributed to the operator not noticing the close proximity of *Rickmers Dubai* to *Kingston* and *Walcon Wizard* immediately before the collision.

Although the failure to make the safety broadcast at 0140 was a significant omission, it is impossible to determine whether the broadcast would have influenced the actions of *Rickmers Dubai*'s second officer. The second officer spoke reasonable English and the earlier safety broadcasts were received on board **(paragraph 1.4.4)**. Therefore, a further broadcast was likely to have been heard. However, as the second officer did not register the significance of the earlier broadcasts at 2342 and 0041, there is no certainty that a third broadcast would have been given any more attention. This was particularly so in view of the second officer's low level of arousal.

The purpose of the safety broadcast is to advise vessels transiting the Dover Strait of any potential dangers or unusual occurrences that may be encountered. Tugs and tows operating in the area are clearly of interest and their inclusion in the safety broadcasts is warranted. However, the information in the broadcasts made at 2342 and 0041 regarding *Kingston* and *Walcon Wizard* was limited to their position and movement. In view of the increasing use of AIS in collision avoidance, the inclusion in the broadcast that the tug and tow was not transmitting on AIS would also have been useful. This would not only have made the broadcasts more informative, but it is also possible that it would also have attracted the attention of some OOWs.

The ability of the CNIS operator to detect the close proximity of *Rickmers Dubai* with *Kingston* and *Walcon Wizard* was not only limited by his workload. He also had a large area to watch and the equipment available did not allow the operator to monitor individual vessels using dynamic guard zones. Moreover, as overtaking situations generally develop more slowly than crossing situations, and as vessels frequently accept smaller CPAs when overtaking, it is extremely difficult for CNIS operators to detect potentially dangerous overtaking situations in time to make a successful intervention. It would certainly have been impossible for the CNIS operator to predict and try to prevent *Rickmers Dubai*'s sudden and unexpected alteration into *Walcon Wizard.*

2.8 VDR DONGLE

It is of concern that the USB dongle used to save the VDR data following the accident had previously been used to store a movie. The abuse of dedicated VDR equipment in this way, whether by ship's crews or service technicians, risks corrupting valuable data.

SECTION 3 - CONCLUSIONS

3.1 SAFETY ISSUES DIRECTLY CONTRIBUTING TO THE ACCIDENT THAT HAVE BEEN ADDRESSED OR RESULTED IN RECOMMENDATIONS

1. *Rickmers Dubai*'s OOW was not keeping a proper lookout and had only seen *Kingston* just before he altered course towards *Walcon Wizard*. [2.3.1]

2. *Rickmers Dubai*'s OOW did not see *Walcon Wizard* or recognise that *Kingston* was engaged in towing. [2.3.2]

3. It is almost certain that the late detection of *Kingston* by *Rickmers Dubai*'s OOW and his ignorance of the proximity of *Walcon Wizard* were due to an over-reliance on AIS information shown on the ECDIS. [2.3.3]

4. The radar targets of *Kingston* and *Walcon Wizard* were on the X-band radar display on board *Rickmers Dubai* for almost 1 hour, but the OOW did not use ARPA to determine if a risk of collision existed, or look out of the window to try and correlate the targets with visual sightings. Therefore, it is likely that he was not monitoring the radar display at all. [2.3.3]

5. It is likely that *Rickmers Dubai*'s OOW's level of arousal was low. Consequently, he was not proactive in maintaining his situational awareness or reactive to changing circumstances. [2.3.4]

6. *Rickmers Dubai*'s OOW was on the bridge by himself at the time of the collision despite the vessel being in the Dover Strait at night. [2.3.5]

7. No dedicated lookout was posted on the bridge of *Rickmers Dubai* despite an AB being rostered for the purpose. [2.3.5]

8. Neither *Kingston* nor *Walcon Wizard* were transmitting on AIS, which would have increased the probability of them being noticed at an early stage by *Rickmers Dubai*'s OOW. [2.4.1]

9. *Kingston*'s towing light and stern light were potentially obscured by the glare of a floodlight. [2.4.2]

10. The lack of a safety culture among *Rickmers Dubai*'s bridge watchkeeping officers was demonstrated by a disconnection between their behaviour and the ship manager's intentions on how the vessel was to be run. [2.6.1]

11. A more considered approach to the provision of equipment and instructions on board *Kingston* might have helped to prevent *Rickmers Dubai* colliding with *Walcon Wizard*, reduce the risk of capsize and minimise the damage on board. [2.6.2]

3.2 OTHER SAFETY ISSUES DIRECTLY CONTRIBUTING TO THE ACCIDENT

1. A balance needs to be struck between the over-reliance on AIS and its effective use. Therefore, it is important that OOWs are fully aware of the system's capabilities and limitations. [2.3.3]

2. The effective audit of bridge watchkeeping practices is a problem faced by all ship managers, which is not easily solved. [2.6]

3.3 SAFETY ISSUES NOT DIRECTLY CONTRIBUTING TO THE ACCIDENT THAT HAVE BEEN ADDRESSED OR RESULTED IN RECOMMENDATIONS

1. The procedure for releasing the towline from the winch on board *Kingston* was unsuitable for use in all operating conditions as required by the SCV Code. It was certainly not suitable for use in an emergency in the dark and in rough seas. [2.5]

2. The circumstances of this accident, together with others that have resulted in the capsize of tugs, indicate there is a strong case for the emergency release arrangements for towing gear to be more clearly articulated at the earliest opportunity. [2.5]

3. A safety broadcast, which should have been issued at 0140, was not issued because the CNIS operator was busy and he had been at the CNIS desk for almost 4 hours. [2.7]

4. The inclusion in the CNIS safety broadcasts that the tug and tow was not transmitting on AIS would have made the broadcasts more informative and might have assisted in attracting the attention of some OOWs. [2.7]

5. The RAM lights on board *Kingston* were not available for use because the white light was defective. [2.4.2]

3.4 OTHER SAFETY ISSUES NOT DIRECTLY CONTRIBUTING TO THE ACCIDENT[12]

1. The response of *Rickmers Dubai*'s crew following the collision was slow and lacked rigour. [2.3.6]

2. The damage to *Rickmers Dubai* was not identified until MAIB inspectors boarded the vessel several hours after the collision as the crew had been unable to launch the rescue boat and they had not anticipated damage so far above the waterline. [2.3.6]

3. The USB dongle, which should only have been used with the VDR, had been used to store a movie. Such abuse of equipment has the potential to corrupt valuable data required to determine the circumstances of an accident.

[12] These safety issues identify lessons to be learned. They do not merit a safety recommendation based on this investigation alone. However, they may be used for analysing trends in marine accidents or in support of a future safety recommendation

SECTION 4 - ACTION TAKEN

4.1 MAIB ACTIONS

The **MAIB** has:

Proposed to the MCA that the Brown Code is amended to ensure that:

- Towlines on winches can be released from the conning position and local to the winch.
- The emergency release system is independent of normal powered operation.
- The towline is connected by a weak-link to the drum to allow it to run free in an emergency.
- The release system is tested routinely and during surveys.

4.2 ACTIONS TAKEN BY OTHER ORGANISATIONS

The Maritime Coastguard Agency has:

Revised the Brown Code following growing concern in the workboat industry that the SCV Code was too generic, along with the problems associated with the SCV Code not being recognised by other European member states. The revised "The Safety of Small Workboats and Pilot Boats – A Code of Practice" (Brown Code), published on 1 June 2014, has taken into account the MAIB's proposed amendments. The requirements for emergency release systems (release positions, maintenance, inspection and routine testing) now apply to towing winches as well as tow hooks.

The Maritime Coastguard Agency in conjunction with **Dover Coastguard** has also:

- Included the composition of the Dover Coastguard watches as a standing agenda item at monthly management meetings.
- Made arrangements for adjacent coastguard stations to take over Dover's SAR responsibilities in extremis to enable Dover Coastguard to focus on its VTS responsibilities (CNIS and Sunk).
- Invited watch officers at other coastguard stations to move to Dover Coastguard.

Reedereiverwaltung Heino Winter GmbH has:

Conducted an internal investigation and ISM audit. During the audit, two non-conformities were identified which required immediate rectification. The company has also issued fleet circulars highlighting the lessons from this accident, including:

- The dangers of over reliance on ECDIS.
- The importance of keeping the master informed.
- Reminding masters that the BNWAS must be engaged whenever the ship is

underway at sea under autopilot.

- A proper lookout is to be maintained by ratings during the hours of darkness.
- Safety rounds conducted by the bridge lookout are to be carried on completion of the watch handover and the results are to be reported back to the OOW.
- The master, as far as is practical, should not leave the OOW alone on the bridge during areas of dense traffic.
- Specified minimum CPA- 2nm in open sea and 0.5nm in narrow waters and areas with dense traffic.

The ship manager has also started work to interface the BNWAS to the VDR in order to verify its use.

MECAL Ltd has:

Conducted an annual survey for *Kingston* on 15 April 2014. The survey identified a significant number of defects, including that the safety release arrangements for the tow winch were inadequate. MECAL suspended the vessel's certification under the SCV Code until the defects were rectified.

SECTION 5 - RECOMMENDATIONS

The Maritime and Coastguard Agency is recommended to:

2014/147 Ensure that CNIS safety broadcasts highlight when AIS information is not being transmitted by vessels that may pose a risk to navigation, such as tugs operating with tows.

Reedereiverwaltung Heino Winter GmbH is recommended to**:**

2014/148 Take action to ensure the behaviour of bridge watchkeepers on board its vessels accords with its instructions and guidance, with particular emphasis on the contents of its recent fleet circular concerning:

- Over-reliance on ECDIS and AIS.
- The use of additional lookouts.
- The potential for low levels of arousal.

Griffin Towage and Marine is recommended to:

2014/149 Take action to enhance the operational safety of its vessels, taking into account, inter alia:

- The importance of the ability to release a tow both from the tow winch and from the conning position when normal power is not immediately available.
- The usefulness of AIS in enabling other vessels to detect and monitor its vessels when towing.
- That the gob rope should be regularly inspected and maintained in a serviceable condition.
- The need to ensure that all navigation lights are working and are not obscured.

Bridge standing orders

BRIDGE STANDING ORDERS

1. The OOW is the Master's representative on the bridge and his primary duty at all times is the safety of the vessel and navigation. Any other activity is to be avoided. Bridge equipment is for safe navigation and should be used judiciously. Master's presence on the bridge or that of a Pilot doesn't relieve OOW of his responsibilities unless it is clearly expressed by Master.
2. OOW must fully understand and appreciate that while in charge of navigation watch he is fully responsible for the safety of the ship and her safe navigation. To execute his duties and responsibilities properly, OOW should exercise all his knowledge and experience according to his competency certification. If, for whatever reason, due to lack of knowledge, or experience, or health conditions, OOW feels unable to execute his duties and responsibilities properly, he must report the same to the Master and request dismissal immediately.
3. OOW should at all times provide compliance with the latest applicable maritime legislation and Company SMS.
4. OOW should never leave the bridge under any circumstances until **properly** relieved by his reliever or Master.
5. Always keep lookout visually as well as by properly set radar as required, any additional help should be summoned when required, without hesitation, especially in restricted visibility or high dense traffic, when keeping watch by hearing particularly, or another help will be required
6. The engine is at your disposal, do not hesitate to use it when necessary giving due regard to the consequences
7. When turning the watches, if you have any doubt about the reliever's ability to carry out his duties efficiently, do NOT hand the watch over, but inform Master.
8. Company Drug and Alcohol Policy, C/L E7F41, E7F42, E7F43, E7F40 as applicable, should be always complied with.
9. Prior taking over the watch, OOW should completely familiarize / satisfy himself with:
    - his vision is adjusted to the light condition
    - Master's standing / night orders are fully understood
    - the position, course, speed, engine order, draft, movement / motion of the vessel
    - the present and expected state of sea, tide, current, weather, visibility and effect of these on her course and speed
    - the operational condition of all navigational and safety equipment, AIS voyage data set correctly
    - errors of gyro and magnetic compasses
    - navigational dangers, expected traffic likely to be encountered during watch
    - the possible effect of heel, trim, water density and squat on under keel clearance
    - if a manoeuvre is being carried out at the time of turning watches, the relief is to be deferred until such action is completed and it's positive effect is ascertained
10. OOW should regularly check that :
    - the helmsman or automatic pilot is steering the correct course and set CPA is always provided
    - courses being steered by gyro and standard compasses are compared frequently, at least hourly and when altering. Compass errors shall be determined regularly whenever circumstances permit
    - navigation and signal lights, navigational and radio equipment functioning properly. The flags and signals are properly displayed.
11. OOW should ensure that manual steering is being employed well before manoeuvre to prevent any potentially dangerous situation of malfunction that might develop during change over at the last moment. Always keep in mind your actions to change over for secondary / emergency means of control in case of failure of those currently in use.
12. All electronic navigational aids are to be used when appropriate to compliment each other. Conventional navigation (position fixing by radar, bearing taking, PI technique, etc., including celestial observations) to be always exercised. Thus comparing positions, obtained by different means, error will be avoided. OOW should not rely upon GPS and AIS only.
13. In coastal waters fixes are to be charted as frequently as possible having due regard to the available depth of water and proximity of navigational dangers, despite continuous monitoring of her position and track provided by electronic aids.
14. OOW should not engage himself in any other business that would preclude executing of the primary duties of OOW
15. Deck Log, GMDSS Log, Compass Log to be filled every watch as appropriate.
16. All the time keep good all round look out, keep vessel on charted course as plotted according to E7F44 Voyage Plan
17. Give wide berth to other vessels. Maneuver to avoid collision should be undertaken in ample time always in compliance with COLREG. Maneuver in contravention of COLREG should be avoided to the maximum extent, circumstances permitting.
18. Call Master under the circumstances listed below, but not limited to:
    - if restricted visibility is encountered or suspected
    - if the traffic or the movement of other vessel are causing concern
    - if difficulties experienced in maintaining course, or otherwise
    - on failure to sight land/navigational mark or to obtain soundings by the expected time or any of these occurring unexpectedly
    - on break down of Main Engine, steering gear, power failure or navigational equipment failure
    - if the weather deteriorates significantly or if in doubt about possibility of weather damages
    - in any situation when you are in doubt or just need a help
    - when you are in doubt whether to call Master or not, call Master
19. While calling Master, don't hesitate to take immediate actions for the safety of the ship, where circumstances so require
20. All incidents of concern including ballasting, deballasting, communication to be logged accurately
21. All weather forecasts and navigational warnings received must be read and required steps to be taken with Master's consent

Read and understood by Deck Officers in the course of Bridge Familiarization (C/L C6.F4)

[redacted]

AT ANCHOR

Anchor watch to be maintained continuously while at anchor, along with listening watch on appropriate VHF channels according to regulations. Attend to all boats/barges coming alongside note names and time of make fast/cast off. In any damages to vessel call Master, register it with barge Master. In pirate areas lights to be kept hanging over side, deck patrol maintained, initiate anti piracy plan. Monitor vessel position regularly. In case of dragging, give E/R notice immediately to get engine ready, call Master, Ch. Officer. No unauthorized boats to come alongside. SMS C/L E7F2 Permit for craft alongside to completed.

IN PORT

Follow Ch. Officer's instructions for loading, discharging, ballasting, deballasting, fresh water intake. Safe access to the vessel shall be provided, moorings and gangway to be tended at all times. No unauthorized personnel allowed on board and in accommodation. One entrance at shore side at the lower level to be kept open. All stores and lockers to be locked on deck. Fire patrol, deck patrol to maintained.

SHORE LEAVE

Shore leave will be allowed only by permit properly obtained from the Head of Department, in accordance with local immigration and other regulations as appropriate. Crew going ashore shall be properly briefed prior leave, particularly on term of leave.

PRIOR SAILING

Whenever possible keep voyage sailing plan ready 12 hrs before departure. For inspection GM (liquid), departure draft and arrival draft to be furnished as soon as possible. E/R to be informed 2 hrs before sailing and controls to be tested 1 hr before. Carry out stowaway and drug search (this to be carried out before entering port also and logged). Vessel to be ready for sea, i.e. securing of hatches, manholes etc. Before Pilot arrival on board check pilot ladder as per regulations. SMS C/L E7F42 to be completed prior departure.

GARBAGE DISPOSAL

Comply with regulations and maintain Log daily. No environment pollution.

OIL POLLUTION PREVENTION

Comply with regulations and maintain Log. Port State Control can be contacted at any time. Please note last check and advice any deficiencies well in advance to rectify.

BUNKERING

Safe bunkering procedures to be followed as per marine safety recommendations. SMS C/L E3 to be completed prior operations.

It is really impossible to give all instances when to call Master, but normally when normal becomes abnormal call Master.
The foregoing is not meant to be exhaustive and covering all, but only to serve as a guideline for operation of the vessel safely and due observance of good seamanship to ensure a safe and sound voyage.

Read and understood by Deck Officers in the course of Bridge Familiarization (C/L C6.F4)

Date: 25.12.2013

Annex B

Instructions for keeping a navigational watch

Code 7 – SHIPBOARD OPERATIONS		Form 5
	**NAVIGATIONAL WATCH**	Name: C7.F5 Rev.No: 1 Date: 07.10.13 Page: 1/2

Before performing any duties on a bridge: make yourself familiar with the complete bridge. You are only familiar with it when you can find and operate everything in the dark without hesitation. (e.g. communication equipment, navigation equipment and material, books, alarms etc.)

BE AWARE THAT THE SAFETY OF THE VESSEL IS IN THE HANDS OF THE OFFICER ON DUTY

A. Just before watch take over, check:

a. The charts/watch order book for instructions
b. The sailing plan b.
c. Position in chart & actual position
d. Course in chart & actual course/speed
e. Weather situation & forecast
f. Traffic situation
g. Nearest land fall (when & where)
h. Magnetic compass deviation & gyro error
i. Automatic pilot manually
j. If VHF is on & set to channel 16 a
k. If watch receiver(s) DSC are on
l. If fire alarm/hold smoke detectors are on

B. Regularly:

a. Check navigation lights
b. Check situation on deck (open manholes,
c. doors, hatch covers etc.)
d. Check alarm/engine temperatures on bridge
e. Check actual course
f. e. Make position plot

C. Every watch, compare:

a. Gyro compass with magnetic compass
b. Repeaters with master gyro compass
c. Check and record compass error
d. Received weather charts/Navtex messages
e. Satcom safety messages
f. Log compass azimuth calculations if possible
g. Check AIS and VDR

D. Continuously

a. Maintain a good lookout
b. Check radar(s) (incl. adjustment)
c. c. Make use of all available navigation aids to
d. determine the vessel's position during your watch. Keep the vessel on the intended track as far as practical

E. When course change (to give way) is required:

a. Follow the rules of the road
b. Do it in time, sufficiently and explicitly as far as practical, necessary and possible
c. Always plot position after change of course

F. In heavy Seas/when the weather deteriorates:

a. Warn Master & Engineer of the watch
b. Warn crew and instruct them to secure
c. Plot position regularly
d. Follow "Navigation" procedure

G. In congested waters:

a. Call Master
b. Call extra lookout, as far as practical
c. Man at the wheel, when necessary
d. Radars on & manned
e. Checked courses/helmsman
f. Echo sounder standby

H. If visibility is (or threatens to become) less than 3 miles or during heavy traffic:

a. Inform the Master
b. Radars on/sharp monitoring of VHF
c. Inform the engine room that speed might be reduced by the Master
d. Sound fog signal/whistle
e. Plot position more often

I. Before finishing your watch:

a. Call the next watch
b. Inform the Officer about the general situation of vessel & her position etc.
c. Complete any manoeuvring which is still in progress

J. On finishing your watch:

a. Fill in the logbooks
b. Check vessel for abnormalities

K. Always call the Master in case of doubt and also (but no limited to):

a. If movements of other vessels cause concern
b. If land or navigation marks are sighted or if sounding are not obtained within the expected time
c. If land or navigation marks are sighted unexpectedly or if an unexpected reduction of soundings occurs
d. On breakdown of any essential navigation machinery or equipment
e. If weather damage is suspected
f. If indicated heading cannot be maintained
g. Upon receipt of SOS / urgent messages

It is always better to call the Master a few times too often than once too late

Of course the Officer of the watch should not hesitate to take immediate action to ensure the safety of the vessel whenever the circumstances require such corrective action.

L. Watch-keeping and route monitoring methods:

The following are considerations when conducting the Monitoring phase (not exhaustive):

- Sensor input check. (refer to Departure and Arrival checks);
- Check that the date and time is correct (correspond to GPS);
- Check heading and speed input to the ECDIS (they must correspond to Gyro and Speed Log);
- Check ship's position visually whenever possible, always maintain a proper lookout;
- Check safety parameter settings (also Speed/Date/Route Name/XTE limit/Chart type);
- At regular intervals check that the displays are not "frozen":
  a) Check if the Latitude and Longitude coordinates are moving along with the ship;
  b) When the ship is in True Motion (™), the screen should auto offset the ship's position;
  c) Compare display between the Master unit and Backup unit.
- NEVER acknowledge alarms and warnings before the message from the warning system is fully understood;
- Ensure that the most suitable scale and mode of display are used at all times;

Check that the position offset is set to ZERO or the required value if applicable. Please reconfirm if any offset is necessary in that case!

Watch arrangements

Objectives:
To ensure the bridge is at all times sufficiently manned under all various conditions at sea following guidance shall be observed.

Responsibilities for process

The Master has to ensure that watch arrangements on board are properly implemented to meet below mentioned guidelines. He may assign on his own discretion additional watch-keepers, if necessary.

The Chief Officer is responsible to prepare a watch plan which allows the manning of the bridge as given in this procedure.

The Watch Officer is responsible to arrange the bridge manning appropriate to the conditions as described below.

Description of process

General

The below given watch arrangements are to be seen as the minimum manning.

If two Officer, or the Master and one Officer are assigned on a watch, the responsibility shall always rest with the Senior Officer. The conning may be taken by the Junior Officer under supervision.

A watchman on stand—by may be assigned to any other duty during his watch, if arrangements were taken to swiftly call him on the bridge at any time. The watchman is primarily to be assigned as a lookout, If he has to take other duties (e.g. steering) and a lookout is required the stand-by watchman is to be called.

All watch personnel employed on the bridge must hold the required watch—keeping certificates according to STCW'95.

Watch Arrangements

a) Open Water - Clear Visibility - Daytimes (sunrise to sunset):

- Watch Officer
- Watchman on stand-by

b) Open Water - Clear Visibility - Nighttimes (sunset to sunrise):

- Watch Officer
- Watchman

c) Restricted Visibility (short period):

- Master
- Watch Officer
- Watchman
- Watchman on stand-by

d) Restricted Visibility (longer period):

Two alternating bridge teams are to be formed:

Team A	Team B
Master	Chief Officer
3. Officer	2. Officer
Watchman	Watchman
Watchman on stand-by	Watchman on stand-by

e) Restricted Waterways:

- Master
- Watch Officer
- Watchman A
- Watchman on stand-by

f) Visibility Obstructing Cargos

Where visibility from the bridge is constricted due to oversized cargo on deck, following watch arrangement is considered as the minimum, being raised when deemed necessary.

1) Open Water (day and night)
   - Watch Officer
   - Two watchman (to grant visibility from the bridge wings)
2) Confined or narrow waters or rivers (day and night)
   - Watch Officer
   - Two watchman (to grant visibility from the bridge wings)
   - Lookout on the forecastle/forward anchor

A watchplan considering the special circumstances shall be set up and posted on the bridge.

Annex D

Small Commercial Vessel Certificate

MECAL LTD
Ocean Building
Queen Anne's Battery Marina
Plymouth
PL4 0LP
Tel: #44(0)1752 251211, Fax: #44(0)1752 251212
email: admin@mecal.co.uk
Website: www.mecal.co.uk

SMALL COMMERCIAL VESSEL CERTIFICATE
"KINGSTON"
MECAL Unique No. M02WB0250162

Issued under the authority of the Maritime & Coastguard Agency of the United Kingdom Department for Transport

Name of Owner/Managing Agent	Griffin Towage and Marine
Address	Organford Manor Organford POOLE BH16 6ES
Type Of Vessel	Workboat
Use of Vessel	Workboat Duties
Official Number	302876
Port of Registry	London
Gross Tonnage	113.24
Hull Identification Number	
Maximum number of persons onboard	Category 0 & 1 voyages - 5 persons Category 2 voyages > 24 hrs 5 persons Category 2 voyages < 24hrs 14 persons (includes a maximum of 12 passengers)
Length Overall	27.2m
Load Line Length	24.1m
Date of Build	1961

This is to certify that the above named vessel was examined by MECAL Authorised Examiner, J. McMinn **from 15 September 2012 to 07 February 2013 at Portsmouth & Poole** and found to be in compliance with the requirements of the Code of Practice for the construction, machinery, stability, operation, manning & examination of commercial vessels up to 24 Metres load line length that do not carry more than 12 passengers by compliance with the equivalent provisions in the Annex to Marine Guidance Note 280 (M).

This certificate will remain valid until **06 February 2018** subject to the vessel, its machinery and equipment being efficiently maintained, annual examinations and manning as required by the Code of Practice

For limitations & conditions please see the reverse of the certificate.

Maximum loading condition	**Total loading of persons and equipment is not to exceed the loading conditions as defined in the Stability Information Book.**
Permitted area of operation	**Category 0 (Unlimited)** **Category 1 (Up to 150 miles from a safe haven)** **Category 2 (Up to 60 miles from a safe haven)**
Midterm examination by a MECAL Authorised Examiner due on/ or before (Please note certain Vessels require this to be done out of water)	**06 February 2015**

This certificate was issued at Plymouth on: **08 March 2013**
This certificate expires on: **06 February 2018**
Name: [redacted] for and on behalf of *MECAL Technical Committee.*
Signature: [redacted]

INTERNATIONAL MARINE CONSULTANTS
MECAL
MECAL Official Surveyor

Towing winch instructions

Tow Winch Instructions – M.T. Kingston (transcribed for clarity)

Heaving/Veering:

- The main control lever protrudes forward from the controls
- To HEAVE push the lever DOWN
- To VEER lift the lever UP

Speed:

- To the Starboard side of the main control block, mounted separately on the railing is the speed switch lever
- Normally this lever is to STARBOARD which gives SLOW speed and maximum pull
- If there is little load on the winch and a FASTER speed is desired move this lever to PORT
- A noticeable click should be felt in the lever when either fast or slow is engaged
- ALWAYS REVERT THE LEVER BACK TO SLOW when you no longer require it in fast

Freewheeling:

- To the portside of the main control block, mounted on the pipework, is the freewheeling valve
- This valve is used when the wire is required to veer off the winch freely, and is normally a better way to lengthen the tow than powered veering
- To VEER FREELY lift the freewheeling valve straight up to unlock the motor then lift the main control lever up to release the brake
- If the wire is veering quickly then engage the brake gradually by slowly lowering the main control valve to avoid a sudden snatch
- NEVER PUSH THE MAIN CONTROL LEVER DOWN WHEN IN FREEWHEELING MODE BECAUSE THE WINCH CANNOT HEAVE IN THIS MODE AND YOU WILL SERIOUSLY OVERLOAD THE HYDRAULICS!
- ALWAYS REVERT THE FREEWHEELING VALVE BACK TO HORIZONTAL as soon as you have finished freewheeling

Brake:

- When the wire is set at the required length for towing, prior to applying any serious pull the brake must be manually tightened
- To TIGHTEN the brake turn it ANTICLOCKWISE as viewed from above
- Once tightened, prior to heaving or veering the brake must be manually slackened
- To SLACKEN the brake turn it CLOCKWISE as viewed from above. The brake must be slackened enough to allow the hydraulics to be able to lift it a bit, but too much or the brake will become in-effective. The perfect position is such that when the hydraulics is operated to move the winch, the brake shaft should be seen to lift up about ¼ inch to 1 inch

- If the brake squeaks when the winch is turning then it may need slackening off a little more

EMERGENCY FREEWHEELING

IF THE WINCH NEEDS TO BE QUICKLY RELEASED **IN AN EMERGENCY** THEN:

- LIFT THE FREEWHEELING VALVE STRAIGHT UP AND
- MANUALLY LOOSEN THE BRAKE (CLOCKWISE) UNTIL THE WIRE VEERS OFF FREELY

The hydraulics do not need to be on, but this procedure could possibly do up to £10,000 of damage to the winch

Annex F

Section 25.2 of the Small Commercial Vessel Code

25.2.1.1 Reference should be made to Section 11.7 for stability of vessels engaged in towing and to Section 17 - Navigation Lights, Shapes and Sound Signals, for requirements for towing and towed vessels.

25.2.1.2 In addition to the qualifications required by Annex 3, vessels of 80 GT and over, engaged in towing, or assisting the handling, berthing or un-berthing of ships or other floating objects over twice their displacement, shall be manned by suitably experienced personnel, competent for the area and type of operation and size and type of the vessel.

25.2.1.3 For seagoing tows the owner/managing agent should consider the duration of the tow with regard to safe manning requirements in accordance with Annex 3, paragraph 8.

25.2.1.4 The owner/managing agent should ensure that the skipper is aware and has copies onboard the vessel of relevant Merchant Shipping Notices (MSN) which give guidance on safety of vessels engaged in towing.

Particular attention is drawn to the guidance provided currently in MGN 199 (M+F) Dangers of Interaction.

Due regard should be given to other relevant Merchant Shipping Marine Guidance Notes (MGNs) which may be issued from time to time, which give guidance on the safety of vessels which tow.

25.2.2 Towing arrangements

25.2.2.1 The design of towing gear should minimise the overturning moment due to the lead of the towline.

25.2.2.2 The towing hook or towline should have a positive means of release which can be relied upon to function correctly under all operating conditions.

25.2.2.3 The towing hook (or equivalent fitting) and the supporting structure should be strong enough to withstand loads imposed during towing operations.

25.2.2.4 The release mechanism should be controlled from all conning positions and at the hook itself. The local control at the hook should be of the direct mechanical type capable of independent operation.

25.2.2.5 Towing arrangements should be appropriate to the task in hand and maintained to ensure that they are in an efficient working condition.

25.2.3 Weathertight integrity

25.2.3.1 Doorways in superstructures, deckhouses and exposed machinery casings situated on the weather deck and which enclose accesses to spaces below deck should be provided with efficient weathertight doors. Weathertight doors should be secured in the closed position when the vessel is towing and the doors should be marked clearly to this effect.

25.2.3.2 Machinery air intakes and machinery space ventilators which must be kept open during towing operations should be served by means of high coaming ventilators as protection from downflooding.

25.2.3.3 Generally, airpipes and ventilators should be kept as far inboard as possible and be fitted with automatic means of closure when downflooding to the compartments served would endanger the safety of the vessel.

25.2.4 The towed vessel or floating object

A vessel, pontoon, barge or floating object which is towed to sea from a place in the UK should be surveyed and issued with an appropriate load line certificate for the towed voyage. Certification for non-self-propelled vessels which make voyages under tow is permitted in accordance with Section 25.5.

25.3 Cargo Carrying

25.3.1 When a vessel is engaged in carrying cargo all such cargo should be stowed and secured in a manner which will not adversely affect the safe operation of the vessel.

25.3.2 Particular attention should be paid to the means for securing the cargo and the strength of securing points, the free drainage of water from cargo stowed on open deck, safe access in way of cargo stows and unobstructed visibility from the wheelhouse.

25.3.3 Cargo hatchways to dry cargo holds or spaces should be of an efficient weathertight construction.

25.3.3.1 In general, a cargo hatch coaming should be not less than 760mm in height. Hatch covers and coamings should be designed to withstand (without permanent deformation) a hydrostatic load of not less than 1.5 tonnes/metre² overall and associated buckling stress, and be fitted with efficient means to be closed and secured weathertight to the coaming. In any case, the coaming and hatch cover should be sufficiently strong to withstand the hydrostatic loading and/or the loading due to cargo stowed on the hatch cover, whichever loading is limiting.

25.3.3.2 Proposals for a cargo hatchway with a reduced coaming height or a flush hatch should be subject to special consideration by the Certifying Authority and may be approved when the safety of the vessel is judged to be at least equivalent to Section 25.3.3.1.

25.4 Vessels fitted with a Deck Crane or Other Lifting Device

25.4.1 Reference should be made to Section 11.6 for requirements for safety standards for vessel stability during lifting operations.

25.4.2 Generally, a vessel fitted with a deck crane or other lifting device which will be used when the vessel is at sea should be a decked vessel with a watertight weather deck in accordance with Section 4.1.1 and 4.3.1.1 or be considered under Section 4.1.3.2.

Agreement should be obtained from the Administration for any proposal to fit a deck crane or other lifting device on a vessel which is not a decked vessel.

25.4.3 The vessel's structure, the crane or other lifting device and the supporting structure should be of sufficient strength to withstand the loads that will be imposed when operating at its maximum overturning moment and maximum vertical reaction.

25.4.4 Load tests and inspections to verify the safe operation of the crane or other lifting device, its foundation and supporting structures should be carried out to the satisfaction of the Certifying Authority. Tests should be conducted in accordance with a recognised standard for the installation. Such tests should be repeated after modifications, including any structural modifications, take place. A visual inspection of the crane or lifting device should be carried out annually.

Typically, the crane or other lifting device should be subjected to a 25% overload test. (In special circumstances a reduced overload may have to be accepted but in no case should this be less than 10 %.) During the overload test, the hoist, slew and luff performance should be tested at low speed, as appropriate. Tests for a variable load-radius type of crane or other lifting device should correspond to its rated performance (e.g. load radius chart).

BTA Tow winch quick release guide

BRITISH TUGOWNERS ASSOCIATION

TOWING WINCH - QUICK RELEASE GUIDE

1. Suitability

The winch quick release system must be appropriate for the planned towage operation and the release operating mechanisms must positioned in suitable locations.

2. Operational procedures

A risk assessed procedure to operate the quick release mechanism must be posted at each quick release position, and should include:

all steps under normal conditions
all steps under blackout conditions
expected release time(s)

A pre-operational check system should be in place.

It is essential that operators are instructed on specific winch types and are aware of release mechanisms when in-gear, out of gear, brake on and brake off.

3. Maintenance procedures

There must be a maintenance programme in place.

Manufacturer's designed interval to release and minimum release loads are to be maintained. Operators must have a full understanding of these values.

4. Testing

The release mechanisms are to be tested, including in blackout conditions.

5. Training and familiarisation

Operational training is to be in place for everyone onboard in order to ensure a thorough knowledge and understanding of the quick release mechanism and its mode(s) of operation, including location, capabilities, limitations, testing and accidental activation protection of the release mechanisms.

6. Audit and inspection

There should an audit and inspection regime in place.

November 2013

Surveyor Advice Note 57

	Maritime and Coastguard Agency SURVEYOR ADVICE NOTE	Document number: SAN 57
Revision: **01**	The Small Commercial Vessel Codes - Examination of Towing Arrangements	**Date:** 18/12/2013
Target document:	SCV2 Survey Checklist	-
Distribution	**HQ and Marine Offices** **Certified Authorities, Red Ensign Group**	-
Expiry date:	25/11/2014	-

1. General

The requirements for vessels engaged in towing and towing arrangements is described in The Code of Practice for Safety of Small Workboats and Pilot Boats (the Brown Code) and its equivalence the Small Vessels in Commercial Use for Sport of Pleasure, Workboats and Pilot Boats Alternative Construction Standards (MGN280), which is also know as the SCV Code. Both the Brown Code and the SCV Code deal with towing in the same way under Sections 25.2.

2. Towing hook functionality and survey

Skippers and crew of vessels engaged in towing must have confidence that tow ropes can be quickly released in an emergency, such as an impending girting[1]. To achieve this, it is essential that the towing hook and associated emergency release systems are properly maintained and regularly tested.

MGN 280 requires that the condition of the towing hook arrangements is regularly monitored, especially to ensure the smooth and efficient action of the quick release system. It also requires that the results of related inspections should be recorded and that there should be an appropriate, recorded towing equipment maintenance system for each vessel. Specifically, Section 25.2.2.5 of MGN 280 requires that: *"Towing arrangements should be appropriate to the task in hand and maintained to ensure that they are in an efficient working condition."*

3. Action by Certifying Authorities

Certifying Authorities are requested to ensure their SCV2 Survey Checklists reflect the content of Section 25.2.2 of the SCV Code, by including a requirement to check the efficient operation of the emergency release system from all operating positions.

The Certifying Authorities are also requested to ensure that the operator has in place a risk assessment addressing the risks of towing and a structured or documented procedure for the maintenance and routine testing of its vessels' towing equipment, including the towing hooks and emergency release system.

Author	[redacted]	**Job Title**	[redacted]
Authorised by	[redacted]	**Job Title**	[redacted]

[1] Girting is the risk of capsizing, especially of vessels engaged in towing of conventional designs (a vessel with its propulsion aft and towing point amidships), due to high athwartships tow line forces. It is also known as girding, girthing or tripping.

Marine Accident Report