Report on the Investigation of

the grounding

of the passenger ferry

Trident V

In the Alligande Passage, approaches to Herm Island

On 22 April 2016

States of Guernsey

Extract from

The Merchant Shipping (Accident Reporting and Investigation)

(Bailiwick of Guernsey) Regulations 2009 Regulation 5:

"The sole objective of a safety investigation into an accident under these Regulations 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 13(9) of the Merchant Shipping (Accident Reporting and Investigation) (Bailiwick of Guernsey) Regulations 2009, 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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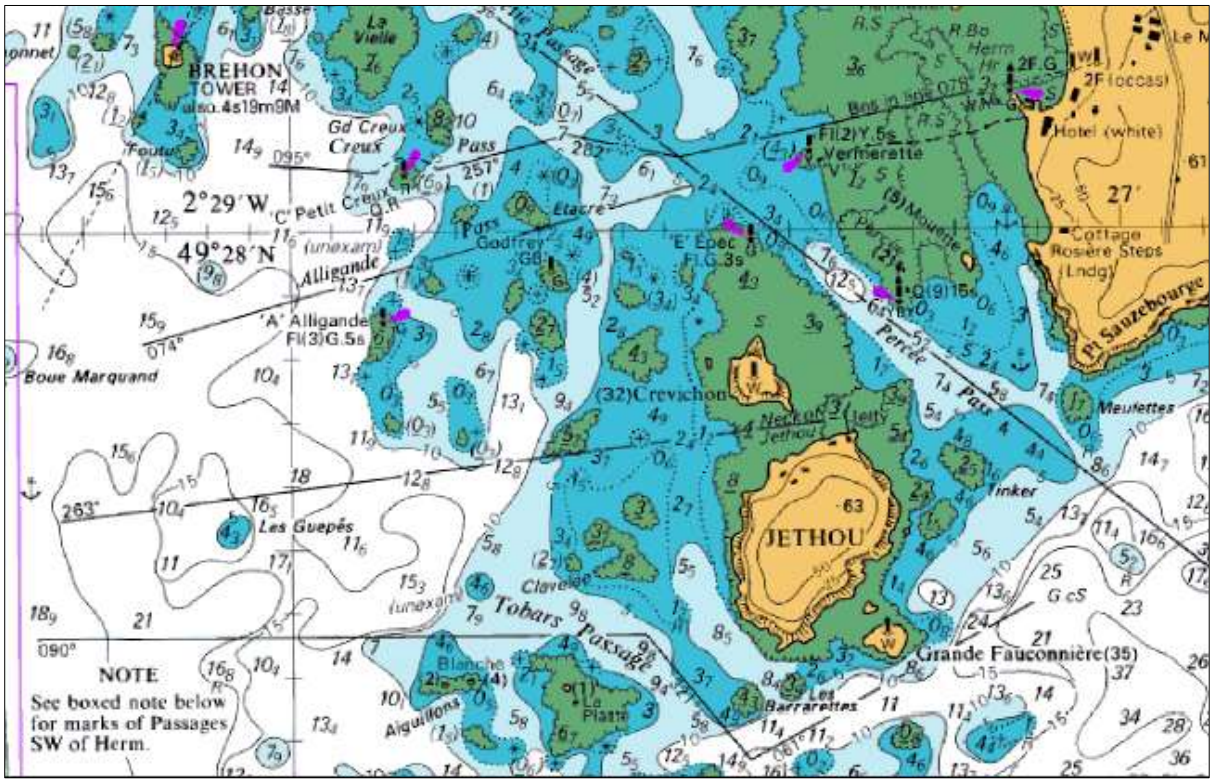
SYNOPSIS

At approximately 1230 on 22 April 2016, the domestic passenger ferry Trident V grounded on a charted, rocky reef in the Alligande Passage, on the approaches to Herm Island. On board, there were 35 passengers and 3 crew. No-one was injured and there was no pollution. However, there was significant damage to the starboard hull, skeg, propeller shaft, propeller and rudder.

The grounding caused a noisy bang and shuddering. The manoeuvrability of the vessel was significantly reduced. Despite the indications of the grounding, the crew initially assessed that the shaft had de-coupled from the gearbox. The Coastguard and passengers were notified of an engine problem however the grounding was not considered and no emergency procedures were followed on board. The passengers were transferred to a sister vessel and Trident V was towed to St Peter Port harbour.

The investigation found that there had been insufficient passage planning for the voyage and ineffective navigational techniques; in particular, the reduced visibility and low tide were not properly considered.

Safety recommendations have been made to Trident Charter Company and Guernsey Harbours, designed to ensure appropriate levels of proficiency in the conduct of safe navigation.



SECTION 1 – FACTUAL INFORMATION

1.1 PARTICULARS OF TRIDENT V AND ACCIDENT

SHIP PARTICULARS	
Vessel's name	*Trident V*
Flag	Guernsey
Type	Domestic passenger ferry
Registered owner	Trident Charter Company
Manager(s)	Trident Charter Company
Construction	Steel hull, wooden superstructure
Year of build	1989
Length overall	22.5m
Beam	10.0m
Draft	1.0m
Minimum safe manning	3
VOYAGE PARTICULARS	
Port of departure	St Peter Port, Guernsey
Port of arrival	Rosaire Landing, Herm Island
Type of voyage	Domestic passenger service
Cargo information	Passengers
Manning	3
MARINE CASUALTY INFORMATION	
Date and time	22 April 2016, 1230 local
Type of marine casualty	Serious marine casualty
Location of incident	Alligande Passage, Guernsey east coast
Place on board	Starboard hull and propulsion
Injuries/fatalities	None
Damage/environmental impact	Hull, shaft, rudder and propeller damage
Ship operation	On passage
Voyage segment	Mid water
External & internal environment	Wind: north-easterly, force 3 Sea state: calm to slight Visibility: poor
Persons on board	3 crew and 35 passengers

1.2 NARRATIVE

At 1217 on 22 April 2016, Trident V sailed from St Peter Port heading for Rosaire Landing, Herm Island with 3 crew and 35 passengers on board. The Master had determined to approach Herm Island via the Alligande and Percee Passages.

On clearing St Peter Port harbour, the visibility was poor and assessed as being approximately 1 cable. The Master liaised with the pilot on board an inbound cruise ship which was heading to anchor. The cruise ship was not visible but was monitored by AIS and radar. The Master was helming the vessel as well as monitoring the radar with the Engineer acting as look-out. The Third Hand remained in the passenger cabin.

The Master routed further north than normal to keep clear of the cruise ship. This caused the vessel to approach Alligande Rock from a position further north and west than usual. The tidal stream was setting the vessel to the south.

As the vessel approached the western end of the Alligande Passage, the vessel was already south of the recommended track. The Master failed to observe that the vessel was south, and setting further south. Visual leading marks were not available due to the restricted visibility and the radar was not configured in such a way to determine the vessel's position in relation to the track.

At 1231, whilst proceeding at 12.4 knots over the ground, a noisy bang and shuddering was experienced. Alligande was close on the starboard quarter of the vessel at this point. The starboard engine revolutions increased rapidly indicating a reduction in load and the vessel altered to starboard. The Master manoeuvred the vessel into safe water whilst the Engineer attended the starboard engine room. The Master called Guernsey Coastguard on a VHF working channel to advise them of an engine problem. No emergency was declared. A brief announcement was made to the passengers by the Engineer.

The Engineer and Third Hand then checked all other compartments to confirm there was no water ingress.

The Guernsey Harbours workboat Sarnia attended alongside at 1250 and prepared to tow Trident V to St Peter Port harbour. At 1300, Trident VI, a sister vessel who had been contacted by the Master by telephone arrived on scene and rafted up on the port side. All passengers were transferred to Trident VI and continued to Herm Island.

Trident V was then towed back to St Peter Port harbour by Sarnia where a dive inspection took place. Damage to the hull plating, skeg, propeller shaft, propeller

blades and rudder was evident. The Passenger Ship Safety Certificate was withdrawn by the Authorities. The vessel was then towed to Marine and General Shipyard at St Sampson's harbours for docking and repairs.

1.3 DAMAGE

The grounding caused significant damage including:

The shell plating of the starboard tank space (forward of the engine room) was subject to contact damage. **(Figures 1 & 2)**

The skeg of the starboard hull was distorted. **(Figure 3)**

The starboard rudder was heavily distorted out of position with contact damage to the rudder itself. **(Figure 4)**

The starboard propeller blades were heavily distorted or missing. **(Figure 5)**

The starboard shaft and 'P' bracket were distorted with contact damage. **(Figure 6)**

1.4 ENVIRONMENTAL CONDITIONS

1.4.1 Weather

Wind:	Light and Variable
Sea State:	Calm to slight
Visibility:	Poor, in daylight

1.4.2 St Peter Port tidal data for 22 April 2016

High water:	0739, 8.9m
Low water:	1403, 1.5m
Height at grounding:	2.6m

1.5 VESSEL

Trident V is a domestic passenger ferry which was purpose built in 1989. The vessel is owned and operated by Trident Charter Company (the company).

Trident V is a steel catamaran, with a wooden superstructure. There are 4 voids in each hull, an engine space and steering flat.

The wheelhouse equipment includes a main radar, a radar/chart plotter, a GPS, an AIS, 2 VHF DSC radios, a magnetic compass and a fluxgate compass

Figure 1: Shell plating damage to starboard hull

Figure 2: Shell plating damage to starboard hull

Figure 3: Distortion to starboard skeg

Figure 4: Starboard rudder distorted out of position

Figure 5: Starboard propeller blades heavily damaged or missing

Figure 6: Starboard shaft and 'P' bracket distorted

1.6 CREW

Trident V's crew typically consists of a Master, Engineer and Third Hand. The Master and Engineer are required to undertake local examinations in order to be issued with a domestic licence to operate a passenger vessel in Bailiwick of Guernsey waters.

The Master was 57 years old and had held a domestic licence since 1985. He had joined the company as a permanent Master in November 2015. He has a good working knowledge and extensive experience of navigation in the waters around Guernsey, Herm and Sark.

The Engineer was 34 years old and had held a domestic Engineer licence since December 2015. He joined the company as a Third Hand in June 2015.

The Third Hand was 71 years old and also held a domestic Engineer licence since July 2012. Until recently, he had sailed as either Engineer or Third Hand but now chose to only sail as Third Hand and remain with the passengers. He had joined the company in 2012.

1.7 NAVIGATION BETWEEN ST PETER PORT HARBOUR AND HERM ISLAND

Herm Island lies 3 nautical miles to the east of St Peter Port harbour. There area is subject to numerous rocky reefs, heads and shallows. There are recognised passages available to pass the various navigational hazards. These allow for passages to both the north and south of the small island of Jethou.

The depth of water within the recognised passages to the north of Jethou is sufficient for Trident V at all states of tide however, the availability of navigable water between hazards is severely restricted and leaves very little margin for cross-track error.

The syllabus for the local Man-in-charge licence training is detailed and requires a sound knowledge of all striking marks for the various hazards as well as clearing and leading marks for the passages.

Navigation in these areas relies heavily on visual transit marks however radar techniques using parallel indexing and variable range markers are available and effective.

1.8 PASSAGE PLANNING AND EXECUTION

1.8.1 International requirement

The International Maritime Organization's (IMO) Resolution A.893(21) *Guidelines for Voyage Planning* requires Masters to plan every voyage, identifying a route that takes into account all navigational hazards and ensures sufficient sea room for the safe passage of the vessel. The IMO guidelines explain that:

'The development of a plan for voyage or passage, as well as the close and continuous monitoring of the vessel's progress and position during the execution of such a plan, are of essential importance for safety of life at sea, safety and efficiency of navigation and protection of the marine environment.'

The guidance sub-divides passage planning into four key stages: appraisal, planning, execution and monitoring. The initial voyage planning **appraisal** stage involves the gathering of all information relevant to the intended voyage. The next stage requires the detailed **planning** of the whole voyage from berth-to-berth. The third and fourth stages are the effective **execution** of the plan and **monitoring** the progress of the vessel during the implementation of the plan.

1.8.2 Company guidance on passage planning

The investigation found that there was no company guidance on approved routes nor were there any navigational risk assessments.

1.8.3 Onboard preparations

Prior to commencing the daily schedule, the Master and Engineer typically have an informal tool-box talk about the day. The Master typically makes the decisions about tides and which landing point to use in Herm[1]. This is not questioned by the Engineer or Third Hand as it is understood that the Master has the most experience. During adverse weather, discussions take place regarding revising the schedule or delaying the service.

The Engineer will conduct engine space checks to prepare the vessel for service. The Master tests equipment in the wheelhouse. Other than determining the destination at Herm, there are no other passage planning considerations.

[1] Herm Harbour is not accessible from approximately half tide down until half tide up. Rosaire Landing is used over the low water.

1.8.4 Passage execution

The usual configuration in the wheelhouse is for the Master to helm the vessel and control the engines which also being responsible for the navigation. Typically, the other crew attend the wheelhouse as there is no designated rest area on board.

In restricted visibility, common practice is for the crew to be employed to assist the Master. The Master will monitor the navigation by radar and chart plotter whilst a crew member will take the helm. The other crew member will perform look-out duties.

This was not the configuration when the vessel grounded. The Master was helming and monitoring the navigation with the Engineer in the wheelhouse as look-out. The Third Hand was in the passenger cabin.

1.8.5 Company guidance on passage execution

There was no formal guidance at the time of the grounding. Following the accident, the company issued a directive on how the wheelhouse should be manned and the vessel routed in restricted visibility. **(Annex A)**

1.9 INSPECTION AND AUDITS

Trident V is considered as a Class VI passenger vessel. The vessel is surveyed annually to the relevant UK Construction Standards by an approved surveyor of the MCA. The vessel was last surveyed on 8th March 2016. The report of inspection noted 6 minor deficiencies which were all rectified by the operator.

The vessel is also inspected/audited in accordance with the requirements of the Safety Management Code for Domestic Passenger Ships in the Bailiwick of Guernsey by a representative of Guernsey Harbours. *Trident V* was audited on 14th April 2016 and was found, in general, to be in good order with a competent Master and crew demonstrating a very tidy and well run vessel. The audit did not assess navigational competence, company guidance or risk assessment of routes.

On this basis, a Domestic Passenger Ship Safety Certificate was issued by the Harbour Master, on behalf of the Public Services Department, States of Guernsey on 15th April 2016.

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 GROUNDING

Trident V suffered significant damage to the starboard hull, skeg, propeller shaft, propeller and rudder after grounding on a charted, rocky reef in the Alligande Passage. The Master did not have good positional awareness in the restricted visibility and was unaware of the limits of safe water available. The lack of risk appreciation occurred because insufficient passage planning had taken place prior to the voyage; in particular, the low tide and limited navigable sea room, coupled with the poor visibility were not properly assessed.

2.3 PASSAGE PLANNING

The route between St Peter Port harbour and Herm Island is well established. In the height of summer, Trident V will make some 8 to 10 return voyages per day. The passages used have been followed for decades with navigational knowledge being passed down through generations.

It is therefore unsurprising that, prior to sailing, the Master did not consider and specific passage planning requirements for the particular voyage.

Passage planning factors not properly taken into account by the bridge team of *Trident V* were the height of tide, visibility and navigational monitoring techniques.

For mariners planning passages through unfamiliar waters, consideration of the height of tide, interaction and the calculation of UKC and LDLs are no more than the application of basic navigation principles. However, where the passage is through familiar waters navigated daily all year round for many years by special pilotage licence holders, such planning action may not appear necessary.

As the vessel approached the Alligande, the Master was aware that the vessel was following an unusual track, as there had been the requirement to deviate further north than normal due to a cruise ship in the Little Russel. However, without visual

references and correct configuration of the radar, accurate assessment of the available width of safe water in relation to the position of the vessel was not available and the Master did not appreciate that the vessel was beyond the limit of navigational safety.

Irrespective of a vessel's size, its operational function or, in some cases, the repetitive nature of its journeys, it is imperative that every voyage is properly planned taking into account all relevant factors necessary to ensure that hazards are avoided. Complacency can be defined as 'repeated exposure to risk without consequence', and the evidence in this case clearly indicates that the repetitive nature of the task was a causal factor.

2.4 HEIGHT OF TIDE

The mean spring range of 7.9m in St Peter Port is significant and requires awareness of its applicability to each passage; specifically, how the height of tide affects the width of safe water available. The grounding occurred approximately 1.5 hours before low water when the height of tide was 2.6m. Although the Master was aware of the time and height of low water, no action was taken to assess its significance.

2.5 CALCULATING THE SAFETY DEPTH

The master was aware of the charted rocky reefs in the Alligande passage. The minimum charted depth in the area is a head of rock known as Tasse, which dries at 1.5m above chart datum. There is also an isolated head just NE of Alligande rock which is charted as awash at chart datum. He was also aware of the height of tide of approximately 2.6m.

There was no consideration of a minimum UKC or the potential effects of squat.

Thus his planning appreciation of the navigational situation should have been:

Draught = 1.2m

Height of tide – charted depth – draught = - 0.1m

It is important to note that, with very strict track control, there is sufficient water for Trident V to use Alligande passage at the height of tide at the time, however, the width of navigable water severely restricts the vessel to deviate from the track.

Had an accurate assessment of the safety depth been made prior to the voyage, alternative plans, such as selecting an alternative route or rescheduling the service may have been considered.

2.6 PASSAGE EXECUTION AND MONITORING

2.6.1 Route

Admiralty sailing directions, British Admiralty charts and the Special Pilots Syllabus all identify the Alligande Passage as a route between the Little Russel and the island of Herm.

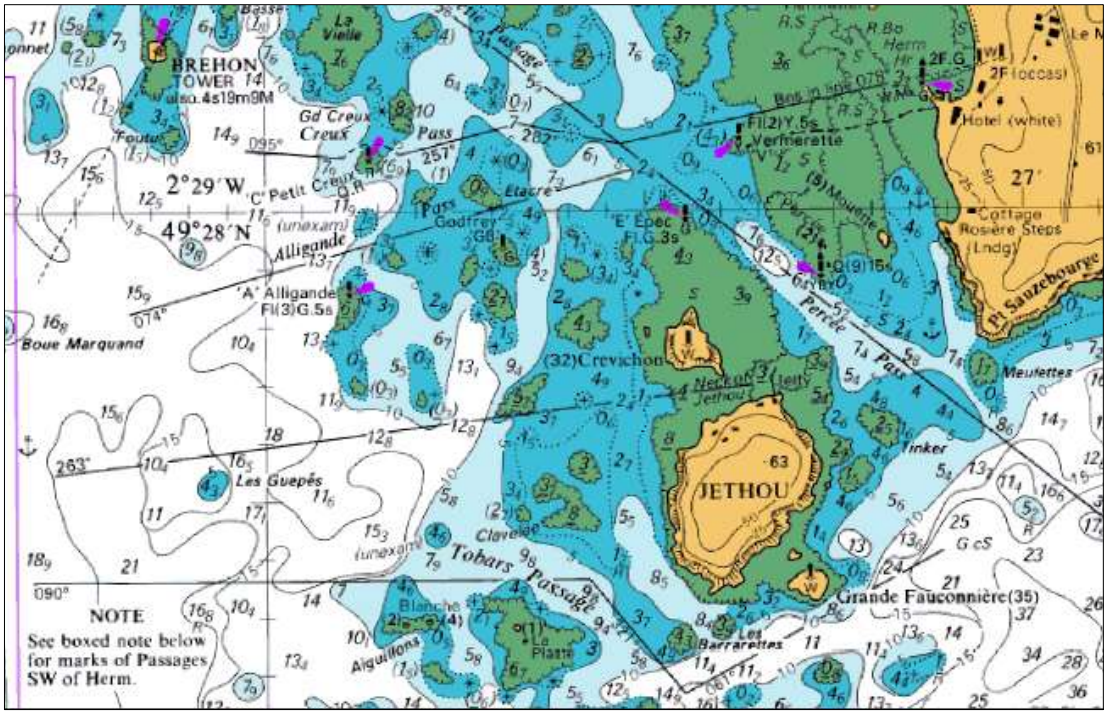


Figure 7: Admiralty chart extract of Alligande Passage

It is clear that the charted 074° track passes close to a number of hazards both to the north and south, and strict track control is required. The visual transit to maintain the track is Vermerette Beacon in line with Herm harbour pierhead white patch. This is followed until either the Percee passage track is adopted or the approach into Herm harbour, depending on the height of tide.

The absence of leading transit marks due to restricted visibility meant that it was not possible to visually monitor the vessels position and that it was vital that radar navigational techniques were employed to ensure strict monitoring of the vessels position in relation to the hazards.

Whilst the route is recognised locally, there was no company guidance or risk assessment of the route and therefore decision making was solely left with the Master.

Figures 8 & 9 show the AIS track of time and COG taken by the vessel. It also shows the charted 074° track (magenta). In the approach to the grounding, *Trident V* was always to the south of the approved track. The vessel then passed perilously close south of Tasse before being manoeuvred into safe water.

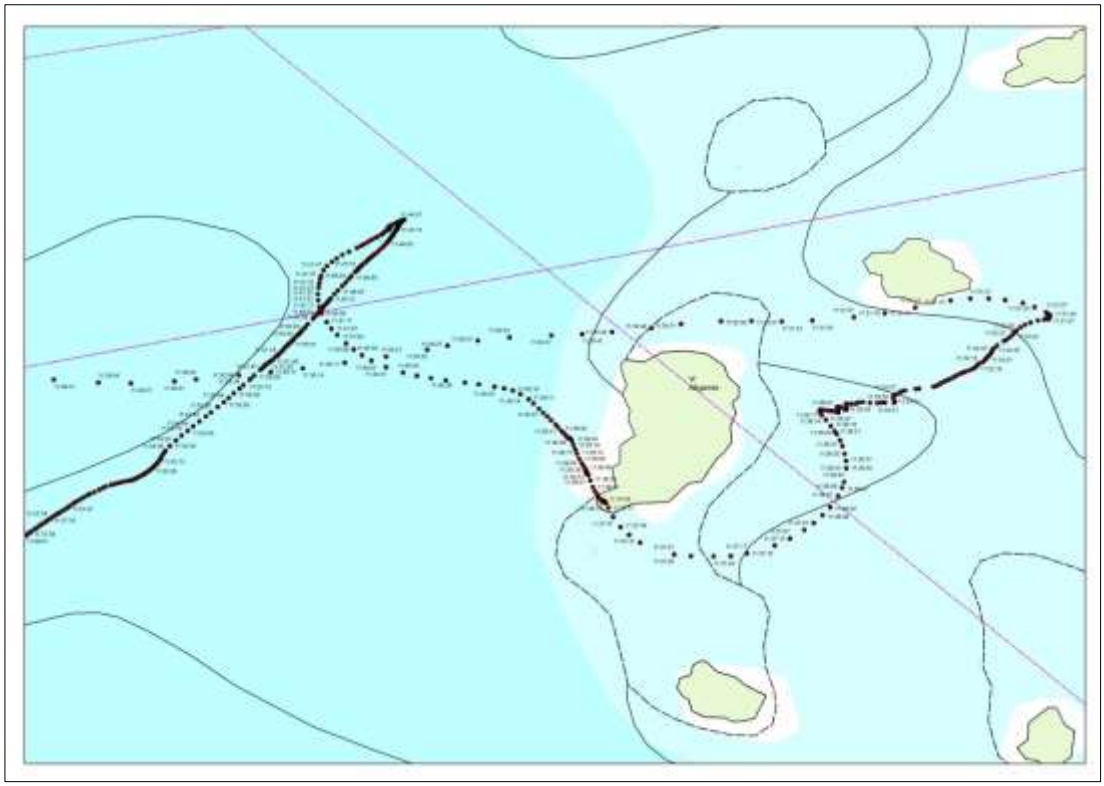


Figure 8: AIS data showing vessel position and time

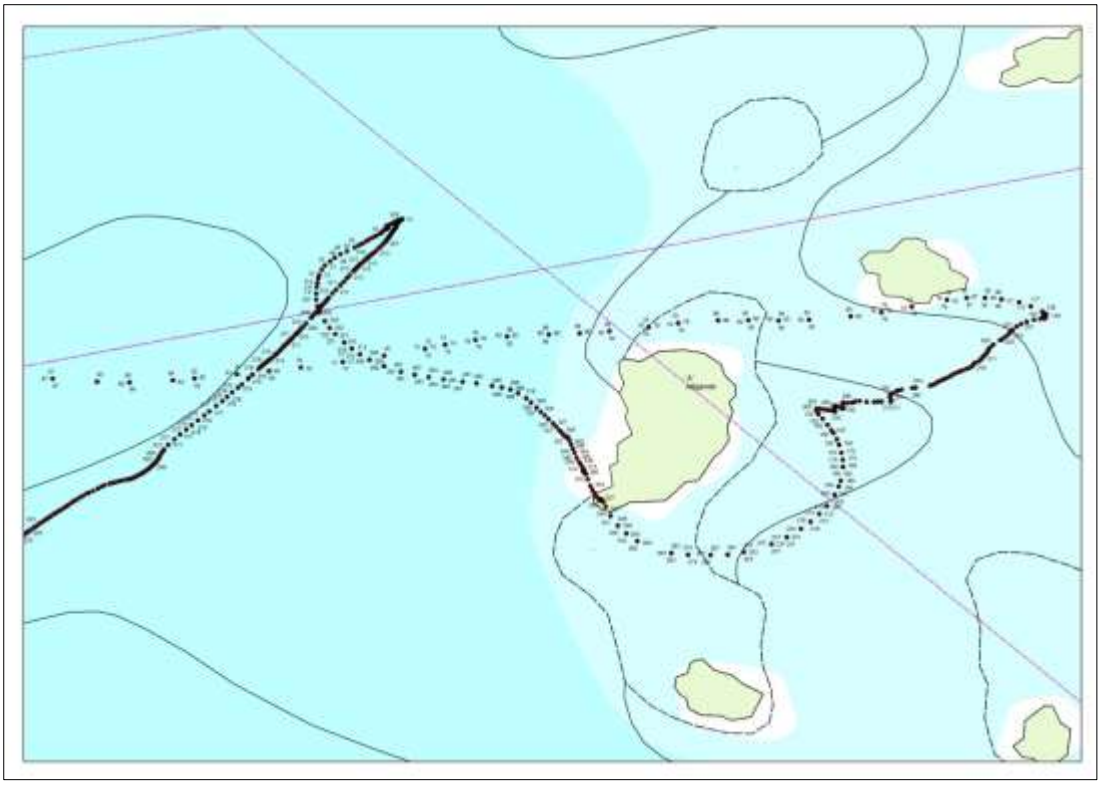


Figure 9: AIS data showing vessel position and COG

2.6.2 Monitoring

Positional awareness in the Alligande Passage was primarily achieved visually using the 074º transit; however, the margins of safety were extremely limited. Radar techniques using VRM or Parallel Indices are effective and used by other Masters. At the point of grounding, the vessel was to starboard of the intended track. Such limited distances of navigable sea room require highly accurate levels of situational awareness to remain on track; there is also effectively no sea-room to allow for other vessels. Nevertheless, had the Master followed, with precision, the charted route through the Alligande Passage, *Trident V* would not have grounded.

Teamwork in the wheelhouse is vital, especially in pilotage waters where maintaining continuous, high levels of situational awareness is required and frequent decisions relating to navigational safety are being made. Key to this is a common understanding of the plan. Pre-departure and pre-arrival briefings provide one method of delivering this.

Had the Master briefed the team on his intentions prior to *Trident V* entering the Alligande passage, he would have improved the capability of the Engineer to monitor his subsequent actions. Absence of this insight hampered the Engineer's ability to assist the Master by monitoring his actions and providing timely inputs to the command decision making process.

A culture existed within the team and, to a lesser extent, the wider company where the crew did not feel they were able to question the Master. This was particularly the case with the team operating *Trident V* on the day of the grounding. This was either due to personal differences between individuals or a belief that the Master's experience should be respected and not questioned.

2.6.3 Use of electronic navigational aids

Although the primary means of maintaining track in the Alligande passage was visual, electronic navigation aids can provide vital additional data, aiding the team.

The main radar and chart plotter were in operation at the time of grounding. The Master did not set any references on the radar such as VRM or Parallel indices. The chart plotter did not have the route displayed and history trails were deselected.

The layout of the wheelhouse with the main radar fitted to the deck head on the centreline restricted options on configuring the team. The Master, who is primarily responsible for navigation was only able to observe the radar if stood at the helm. This meant he could easily be distracted by course keeping rather than interpreting the radar picture. The configuration of the rudders in relation to the shafts makes helming the vessel difficult as it is directionally unstable. The sister vessel *Trident VI* had the rudders reconfigured following a grounding but this alternation was not made to *Trident V*.

This also prevented the Engineer having ready access to the radar and, in turn, adversely affected the level of support he could give to the Master. **Figure 10** is an extract from *Trident V's* Safety & Emergency File showing the layout of the wheelhouse.

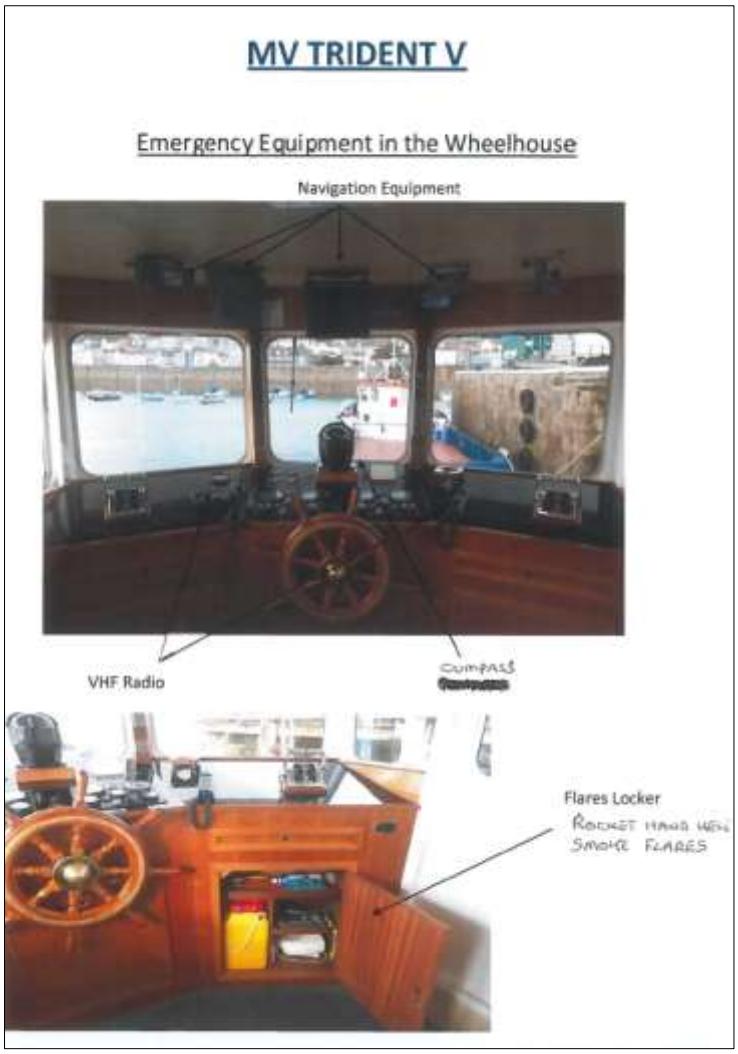


Figure 10: Extract from Safety & Emergency file showing wheelhouse configuration

The vessel was not fitted with an echo sounder. Use of an echo sounder as a safety barrier during pilotage can be effective but relies on two conditions: the expectation of danger, and seabed contours that would show reducing soundings in sufficient time to react. In this case, the steep sided nature of the rocky pinnacles in the area would not have provided sufficient forewarning that the vessel was about to run aground.

2.7 EMERGENCY RESPONSE AND DAMAGE ASSESSMENT

2.7.1 Denial

The severity of the noise and vibration during the grounding alarmed the crew and many passengers. The fact that the Master immediately reduced power is evidence that he knew something significant had happened. However, the Master was

convinced that there had been sufficient water where the vessel had passed and concluded that the vibration had probably been caused by a string of fishing pots becoming snagged around the propellers or some other engine failure.

2.7.2 Appropriate response

In the event of such a loud and shuddering vibration, it is vital that action is taken immediately to identify any damage that might have been suffered. The grounding checklist **(Annex B)** was not referred to however, the crew did check all compartments for damage and water ingress.

The coastguard were notified by VHF of an engine problem but an emergency was not declared by the Master.

The passengers were not kept informed of the situation other than one very brief announcement by the Engineer which was confusing and, due to the poor content, caused concern rather than put them at ease.

Even once it became clear that the vessel had grounded, the Master did not consider introducing safety measures such as instructing passengers and crew to don lifejackets.

Mobile telephone was used to alert the sister vessel *Trident VI* and the Harbour workboat *Sarnia* that assistance was required. This prevented the coastguard and surrounding shipping to monitor the situation which, if it had resulted in water ingress, could have led to the loss of the vessel or the loss of life due to delays in responding.

2.12 SAFETY MANAGEMENT

2.12.1 Onboard guidance

Onboard guidance is limited. There is a General Layout of Emergency Equipment file which provides details of all safety related equipment as well as a Station Bill and check-lists to cover a limited number of emergency scenarios **(Annex D).**

In addition, There are 5 Standard Operating Procedures (SOPs). These, in most cases, duplicate the check-list contained within the General Layout of Emergency Equipment file.

There is no onboard guidance on navigation, approved routes or passage planning.

2.8.2 Audits and inspections

The degree of navigational risk routinely being taken on board *Trident V* and highlighted in this investigation had not been identified as a concern by any of the recent or external audits or inspections of the vessel.

Audits and inspections are recognised as a sampling process, and it is not possible to check every facet of a vessel's navigational safety and compliance. Nevertheless, *Trident V's* lack of navigational techniques and company guidance ought to have been detected by audits and inspections.

2.8.3 Training and readiness

Whilst it is clear from the Monthly Log (extract at **Annex C**) that regular training occurs for certain scenarios, it is evident from *Trident V's* internal training records that the response to grounding is not exercised. The possibility of grounding given *Trident V's* scheduled service suggests a requirement for such training. Thus, if grounding or damage control had been strong themes in the programme of internal training, then the onboard response would potentially have been more instinctive.

There is no training in navigational techniques, particularly blind pilotage exercises.

2.8.4 Domestic licencing and monitoring

Domestic legislation directs that a Man – in – Charge licence is required to operate a domestic passenger vessel. This is categorised by the number of passengers to be carried. The Master held a valid Man – in – Charge licence for up to 250 passengers which was issued in 1985.

A syllabus exists which focuses heavily on the pilotage within the area the licence applies. There is little or no focus on navigational competence or use of electronic navigation aids. There is also no requirement for any formal, independent, industry recognised qualification which would ensure the wider requirements of acting as a Master are met.

There is also no arrangement in place for the issuing authority to ensure continued competence following initial qualification. The licence holder has to declare a

minimum number of days at sea during the preceding year in order to qualify for revalidation.

SECTION 3 - CONCLUSIONS

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

1. *Trident V* grounded on a charted, rocky shoal in the Alligande Passage because insufficient passage planning had been undertaken. In particular, the extremely low tide and the poor visibility had not been properly taken into account. [2.3, 2.4, 2.5]

2. The absence of sufficient passage planning meant that the Master was unaware of the limits of safe water so approached danger without appreciating the hazard. Furthermore, a safer course of action was available - use of alternative passages. [2.3,2.4, 2.5]

3. The highly repetitive nature of *Trident V's* schedule induced a degree of planning and navigational complacency. [2.3]

4. Although the primary method of navigating in the Alligande Passage was visual, in poor visibility, radar and the electronic chart plotter was not utilised effectively as a navigation aid. In particular, no radar techniques were used to accurately monitor the vessels position nor was the route displayed on the chart plotter. [2.6]

5. The layout of the wheelhouse restricted the Master in configuring the team. With the main radar fitted to the deck head on the centreline, the Master, who is primarily responsible for navigation was only able to observe the radar if stood at the helm. This meant he could easily be distracted by course keeping rather than interpreting the radar picture. [2.6.3]

6. The significant navigational risk routinely being taken by *Trident V* went undetected by audits and inspections. [2.8.2]

7. Despite a noisy, shuddering vibration, the Master did not immediately follow the grounding-raking checklist. Company procedures requiring passengers to don lifejackets and to transmit the appropriate GMDSS broadcast (Pan Pan) to coastguard were not implemented. This has the potential of delaying an emergency response and placing the passengers and crew at risk. [2.7]

8. Passengers were not kept informed of the situation other than a very brief and confusing announcement by the Engineer causing more concern than reassurance. [2.7]

9. The company did not have in place continuation training for Masters to practice radar navigation techniques. [2.8.3]

10. The domestic licencing requirements for Masters do not currently formally assess radar competence or require professional radar qualification. [2.8.4]

11. There was no company guidance on how the vessel shall be navigated in restricted visibility. [2.8.1]

12. There was no company guidance or risk assessment of approved routes. [2.8.1]

13. A culture exists within the company where the crew do not feel able to challenge the Master's decisions, either due to personal differences or a belief that the Master's experience should not be questioned. [2.6.2]

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

1. The possibility that the vessel had grounded was denied; this was reinforced by the Master's conviction that there had been sufficient depth of water where the vessel had passed. [2.7.1]

2. Man – in - charge licence holders were thoroughly trained; however, there was no provision for continuous professional development after their initial qualification. [2.8]

3. At no time did the Master comply with the requirements of the International Collision Regulations by sounding the appropriate sound signal in restricted visibility. [Observation only]

4. Maintaining a course can be difficult due to the position of the rudders requiring excessive concentration. Following a grounding of the sister vessel, *Trident VI*, a recommendation was made to modify the rudder arrangements. This was only applied to *Trident VI* and not *Trident V*. [2.6]

SECTION 4 – ACTIONS TAKEN

Trident Charter Company has:

- Imposed a restricted visibility procedure where a second Master will be called in when visibility is less than 0.25NM and the height of tide is less than 1.7m. The vessel will also take an alternative route.
- Formalised radar techniques for monitoring the vessel's position using VRM settings which are posted in the wheelhouse.
- Introduced minimum manning of 3 within the wheelhouse during restricted visibility to provide support to the Master.
- Imposed the requirement that the Master will brief the crew prior to each voyage on the passage plan and intended route.
- Relocated the main radar set to the console and offset it from the helm position so that the Master may navigate by radar without having to helm the vessel.

Guernsey Harbours, acting on behalf of the States Supervisory Trading Board has:

- Re-instated the Passenger Ship Safety Certificate for *Trident V* following its revocation due to the damage to the vessel. This was re-instated following satisfactory re-examination of the vessel and a Declaration of Survey being issued by the MCA.
- Suspended the Man – in – Charge licence of the Master for 6 months. The Master will be required to undertake a full examination process before a Man – in – Charge licence is issued.
- Required that the Master undertake an approved radar operator course.

SECTION 5 - RECOMMENDATIONS

Trident Charter Company is recommended to:

01/2016 – TV/1 Introduce regular blind pilotage navigation training for all Masters.

01/2016 – TV/2 Risk-assess and approve routes to be taken by company vessels.

01/2016 – TV/3 Modify the rudder arrangements to allow for improved directional stability.

01/2016 – TV/4 Consider fitting auto-pilot.

01/2016 – TV/5 Consider fitting an automated sound signalling device to ensure compliance with the requirements of International Regulations for the Prevention of Collisions At Sea.

01/2016 – TV/6 Ensure the Safety Management System of the company allows for all employees to have direct contact to a Designated Person Ashore (DPA) to facilitate an efficient and effective method of raising concerns. All employees are to be made aware of this arrangement.

01/2016 – TV/6 Review onboard guidance and training to ensure all potential situations are covered. To include but not be limited to collision, pollution, fire in passenger area, enclosed space rescue, navigational training and blind pilotage training.

Guernsey Harbours, acting on behalf of the States Supervisory Trading Board is recommended to:

01/2016 – GH/1 Update the domestic syllabus for Special Pilot Man – in – Charge licence to include blind pilotage assessment.

01/2016 – GH/2 Introduce the requirement that a Special Pilot Man – in – Charge licence holder shall have undertaken an approved radar operator course within the previous 12 months prior to being examined.

01/2016 – GH/3 Amend the Domestic Safety Management Code audit and inspection process to include the checking of navigational training for all Masters.

01/2016 – GH/4 Develop an annual 'check-trip' for all Man – in –charge licence holders to ensure continuous professional development following initial qualification.

Safety recommendations shall in no case create a presumption of blame or liability

Annex A

Restricted Visibility Company Procedure

Trident Charter Company Limited

Visibility Procedures

With immediate effect 6th May 2016

Company procedures regarding visibility:

It is proposed that risk assessments are undertaken each morning prior to the first trip on each day and will give due consideration to the visibility at the time and the forecasted visibility. All navigation equipment will be checked and in good working order prior to departure.

It is suggested that visibility below 0.25 miles and a tide height of 1.7 and below a second skipper will be called in; also the Alligande passage will be avoided. Vessels will reroute to the Lower Heads and then up to a position east of Goubiniere and from there to Rosiere. A second skipper will be made available at short notice on a roster basis.

VRM's (variable range markers) will be set prior to the vessels departure and adjusted as required.
A copy of these VRM's and courses will be kept on board each vessel and will be easily available to the crew.

Three crew will man the wheelhouse, the skipper will be on radar, Engineer to steer compass courses given to him and the third man to keep a good watch. If a second skipper is in then he shall be used where most applicable. The skipper will brief the crew prior to each trip as to which route will be taken. Regular training sessions will be carried out and logged.

Peter Wilcox
Managing Director

Annex B

Grounding Check - List

GROUNDING

After grounding, engines to neutral. Immediately inform Coast Radio Station.

Passengers to don life jackets.

Assessment of damage made. Assessment of situation and action to be made, depending on damage and water ingress.

Pumps, motor, electric and hand, all manned if necessary, and if afloat and not unduly damaged the vessel will return to Port or be beached, whichever is nearest or safest.

If the damage to the hull is deemed too great, no effort will be made to move the vessel.

Life rafts will be made ready for immediate evacuation if the vessel is in a sinking condition.

Two crewmen to assist at life raft stations on the port and starboard quarters.

Passengers evacuated in as orderly manner as possible.

Coastal Radio Station kept constantly informed and any other vessels asked to assist if in the vicinity.

"MAYDAY" PUT OUT IF NECESSARY.

Annex C

Monthly Log extract of training

TRIDENT MONTHLY CHECKS / EXERCISES

CHECKS	DATE	BY	COMMENTS	DATE	BY	COMMENTS
RUDDERS	4/3/16	Rolly	All ok			
FIRE HYDRANTS	4/3/16	Rolly	All ok			
EXTINQUISHERS	4/3/16	Rolly	All ok			
ANCHOR	4/3/16	Rolly	ok			
FIRST AID KIT	4/3/16	Rolly	All ok			
FLARES	4/3/16	Rolly	All ok			
ESCAPE WINDOWS	4/3/16	Rolly	All ok			
LIFERAFTS	4/3/16	Rolly	All ok			

EXERCISES

CHECKS	DATE	MASTER	CREW	DATE	MASTER	CREW
MAN OVERBOARD	4/3/16	Tony	Scott and Rolly			
ENGINE ROOM FIRE	4/3/16	Tony	Scott and Rolly			
ABANDON SHIP	4/3/16	Tony	Scott and Rolly			
LIFEJACKET DONNING	4/3/16	Tony	Scott and Rolly			
ANCHORING	4/3/16	Tony	Scott and Rolly			
HANDHELD VHF	4/3/16	Tony	Scott and Rolly			
FLARES	4/3/16	Tony	Scott and Rolly			

COMMENTS:

melody press printers

States of Guernsey

Annex D

On board guidance

TRIDENT CHARTER CO LTD

DAILY RISK ASSESSMENT

To be assessed by the Master in Charge

1. **Weather, sea and tidal conditions – Check weather reports.**
2. **Bad weather, difficult sea conditions, darkness – only crew in wheelhouse.**
3. **Check shipping movements in bad visibility / darkness.**
4. **Check with crew that all is well before departure e.g. Engines, Ropes, Equipment etc.**
5. **Make sure that a list of emergency numbers is available to you.**
6. **Engine room checks – for safety reasons the engineer must have assistance.**
7. **Crew to wear life jackets at all times & report back to wheelhouse after every departure.**
8. **Any faults to be reported to management or authorities.**
9. **DO NOT SAIL IF YOU HAVE ANY DOUBTS WITH REGARD TO THE ABOVE – REMEMBER ONE LIFE LOST IS ONE TO MANY.**

TRIDENT MASTER IN CHARGE

DUTIES/RESPONSIBILITIES

1. Risk Assessment Once you have carried out Risk Assessment, only set sail when all is in order and you are happy that NO RISKS will be taken.
2. Ensure vessel is ready for use. Check with the engineer that he has carried out his duties and then complete the log.
3. Check weather on a regular basis including expected sea conditions for the area. Enter weather checks in log.
4. Check Radio Communication.
5. Check for all shipping movements (especially fast ferry) in poor visibility.
6. Have plan for daily departures/arrivals inc. night trip. Allow for tides, weather & sea conditions when deciding on loading points.
7. Departure times to be displayed on the blackboard in the cabin area. Keep the kiosk and Herm informed of any late changes Nominate a member of crew to assist.
8. Check you have at least the minimum number of crew before setting sail.
9. Check navigational equipment inc. lights (see engineer)
10. Log book present and updated.
11. Liaise with office/Management for any changes to schedule.
12. Ensure that garbage is not disposed of at sea.
13. Procedures for reporting accidents/Incident are logged.
14. Master and Company Safety Officer to check Crew training on a regular basis. Manual is updated when required and available

for inspection. Ensure the crew are in complete understanding of their personal files.

15. Master to ensure crew abide by the Company Policy – No drugs or alcohol at work.

16. Passenger numbers must be correctly logged.

17. Safety of passengers & crew.

18. Safety of vessel

19. The Master has the authority to make decisions regarding the safety of the ship and persons on board. Assistance shall be available ashore at all times from the company.

20. Crew must wear life jackets.

21. Oversee cargo loading/off loading & re-fuelling.

22. Ensure crew report back to the wheelhouse after each departure.

23. Chain of command

EMERGENCY PROCEDURE

MUSTER STATIONS

RATING	COLLISION STATION	FIRE STATION	BOAT STATION
MASTER	In charge on bridge and in contact with passengers	In charge on bridge and in contact with passengers	In charge on bridge and in contact with passengers
ENGINEER	Ascertaining damage and reporting to Master	Starting fire pumps and taking control at point of fire	In charge of launching Life Rafts
3rd/4th HAND	Assisting Engineer	Assisting Engineer	Securing painter as required and Mustering Passengers

ALL CREW ARE ASKED TO READ & BE FULLY CONVERSANT WITH THE TRAINING MANUAL IN FULL

MASTER

DURING INCIDENT

1. Will control operations from wheelhouse.

2. Keep in contact with coastal radio stations or other mobile stations.

3. Try to maintain log of fire/grounding/collision, times, positions and radio contact.

4. Put out "MAYDAY" if deemed necessary.

5. Order the abandonment of the vessel.

6. Will be the last person to leave ship after abandonment when saving or salvage of vessel is impractical.

ENGINEER

DURING INCIDENT

1. Maintain power on main engines D.A.'s for manoeuvring/light/water pumps/fire pumps.

2. Fight small isolated fires with the aid of fire extinguishers.

3. Man emergency steering position on the aft deck if needed.

4. Take charge of the loading and releasing of inflatable life raft if necessary.

RAFT NOS TWO + FOUR PORT SIDE/AFT/MID SHIPS

GROUNDING Assess damage - Maintain power to main engines D.A. bilge pumps.

Keep wheelhouse informed of situation. If in danger of foundering, man life raft station.

COLLISION As above.

CAPSIZE Survive.

THIRD HAND

DURING INCIDENT

1. Try to calm passengers, but keep them informed of situation.

2. Order the donning of life jackets.

3. Move them to safest position on board.

4. Assist engineer if possible.

5. Man the emergency steering position on the after- deck if needed.

6. Take charge of the loading and releasing of inflatable life raft if necessary.

Maximum 65 persons Minimum 15 persons

RAFT NOS ONE – THREE STARBOARD SIDE AFT/MID SHIPS

GROUNDING Assist and calm passengers. Assist engineer if possible.

COLLISION As above.

CAPSIZE Survive.

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AIS	Automatic identification system
CIMA	Chief Inspector of Marine Accidents
COG	Course over ground
GMDSS	Global Maritime Distress and Safety System
IMO	International Maritime Organization
kts	Knots (1 knot = 1 nautical mile per hour)
LDL	Limiting danger line
m	metre
MCA	Maritime and Coastguard Agency
NE	North-east
nm	Nautical miles
UKC	Under keel clearance
UTC	Universal Time Constant
VHF	Very High Frequency (radio)
VRM	Variable range marker

TIMES: all times used in this report are UTC+1