

PORTS OF JERSEY

MV TRINITY

INCIDENT REVIEW AND RISK MITIGATION ASSESSMENT



Date	Version	Prepared by	Notes
04/10/2022	V1.0	PLN	Recommendation to be added
23/11/2022	V2.0	PLN	Minor edits
01/02/2023	V2.1	PLN	Final draft
15/11/2023	V2.1	PLN	Appendix 1 added

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Background

Trinity is an 81m general cargo 'Lo-Lo' (load on load off) vessel with a beam of 12m.

She has a carrying capacity of 3020t DWT and her draught is reported to be 3.9m. The vessel was built in 2007 and sails under the UK Flag. The vessel is owned and operated by Allied Traders / Channel Seaways, and routinely transits between the UK and the Channel Islands, sailing from Poole.

Trinity routinely arrives in St Helier twice a week, firstly on Tuesday evenings, works cargo Wednesday morning and departs before midday. The vessel returns on Friday's usually arriving around midday and departing around 1500hrs.

The vessel is a single screw with a maximum speed reported to be around 9knts and an average speed of 7.8knts.

Introduction

This paper was drafted following several occurrences relating to the Trinity being recorded in Ports of Jersey incident reporting software Q Pulse.

A decision was taken to conduct a more in-depth review of the reports to better understand the reason for so many occurrences being recorded.

Schedule of events

To perform a review of the vessel incidents, several groups were engaged across the Ports of Jersey Harbour team, including the Marine Pilots, the Harbourmaster, the Deputy Harbourmaster and the VTS Manager and his team.

The review was initially recommended through the weekly Q Pulse meeting. This decision later was supported by the Designated Person (PMSC DP).

The review was led by the Marine Quality Manager and initially the Marine Pilots were engaged to gain a greater insight into the variety of Occurrences reported. This meeting raised several key findings when discussing the list of occurrences (shown in **Table 1**). It was noted that a significant change to the vessels was made at the end of 2020 to aid the vessels handling and manoeuvrability. Further changes were reported to have been made to the propulsion system in 2021, by way of changing the pitch of the vessels propeller.

The characterisation of each incident was reviewed and one updated to show a more accurate representation of the primary causation factor. The meeting with the pilots also revealed more information was required to better understand each incident. It was also decided each incident should be categorised to reflect the major causation factor for the incident, this has been included in **Table 1**.

Table 1 Incidents involving the Trinity

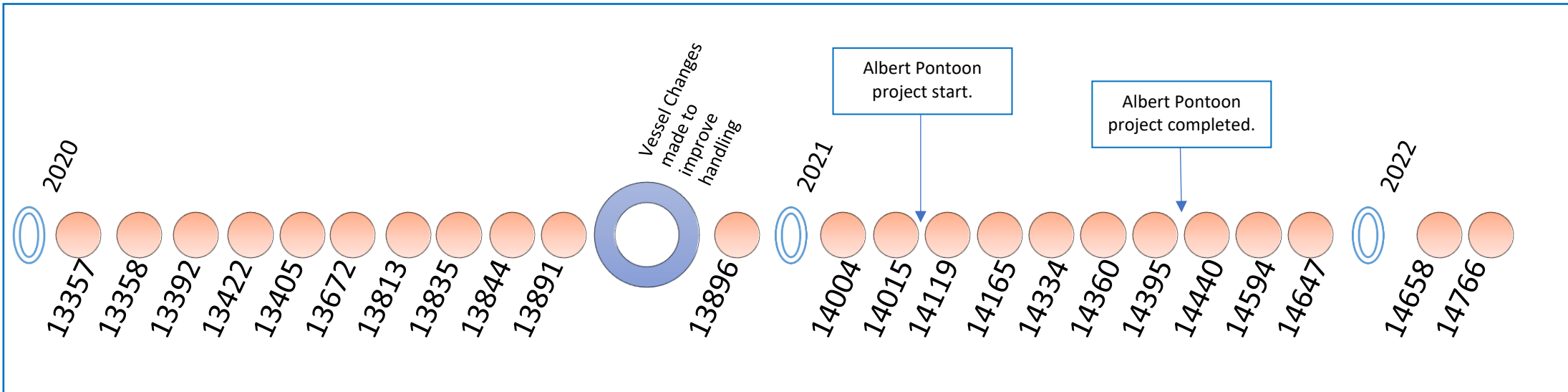
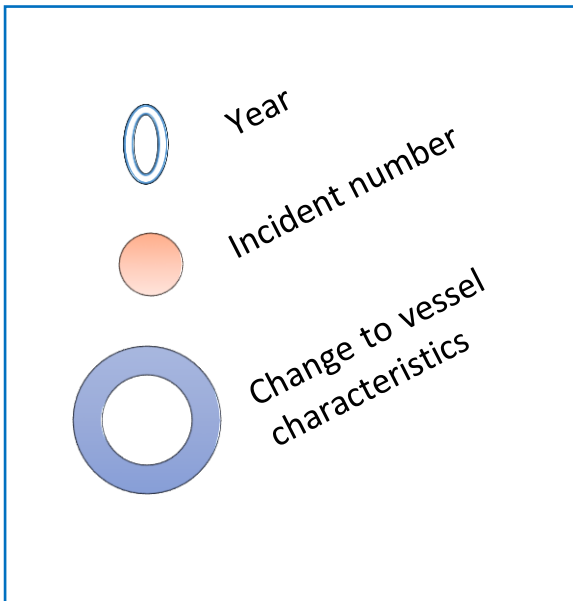
ID	Incident no	Incident title	Date of occurrence	Type of incident	Severity	PEC holder	Causation factors*
1.	13357	Pilot/VTS interventions	02/04/2020	Navigational near miss	3	50	HF
2.	13358	Manoeuvring off the berth without notifying VTS	02/04/2020	Regulatory breach	2	50	HF
3.	13392	Departure from NNQ	29/04/2020	Navigational near miss	2	50	HF and TS
4.	13422	VTS interventions on approach to St Helier	19/05/2020	Navigational near miss	3	Data n/a	HF
5.	13450	VTS interventions on departure from St Helier	03/06/2020	Navigational near miss	2	50	HF
6.	13672	Issues manoeuvring in inner harbour on entry	07/08/2020	Navigational near miss	2	50	HF and TS
7.	13813	Unplanned assistance required by Halcyon	23/09/2020	Navigational near miss	3	Data n/a	HF and TS
8.	13835	Difficulty manoeuvring through pier heads	10/10/2020	Navigational near miss	3	52	HF and ECW
9.	13844	Close to west wall and then Western side of channel on departure	18/10/2020	Navigational near miss	4	52	HF and ECTD
10.	13891	Vessel came to a full stop before entering the pier heads, due to unusual approach	16/11/2020	Navigational near miss	4	52	HF and ECW
11.	13896	Aborted arrival	30/11/2020	Navigational near miss	4		HF
12.	14004	Departing No 7 without traffic clearance	27/01/2021	Regulatory breach	2	50	HF
13.	14015	Trinity off leads, approaching precautionary	02/02/2021	Regulatory breach	3	50	HF




		area from the west					
14.	14119	Loss of bow thruster while manoeuvring	24/03/2021	Mechanical failure	2	50	TS
15.	14165	Suspected grounding. (no evidence found after event to confirm)	30/04/2021	Grounding	3	50	HF and TS
16.	14334	Near allision with New Albert Pier Pontoon Piles	23/07/2021	Navigational near miss	2	50	HF and ECW
17.	14360	Ladder damaged on NNQ during berthing	27/07/2021	Allision	2	50	HF and TS
18.	14395	Near miss with new Albert Pier pontoon Piles	18/08/2021	Navigational near miss	2	50	HF and TS
19.	14440	Trinity vs Tenacious. Close Quarters pass	08/09/2021	Navigational near miss	2	50	HF
20.	14594	Assistance required entering pier heads	26/11/2021	Navigational near miss	2	52	Not enough info to rank
21.	14647	Contact with Vic Pier on departure	17/12/2021	Allision	2	52	HF
22.	14658	Left Red and Green leads while inbound during fog routine	28/03/2022	Regulatory breach	3	50	ECV

***Causation factor abbreviations:**

Human factor	HF
Environmental Conditions – Weather	ECW
Environmental Conditions – Tide	ECT
Environmental Conditions – Visibility	ECV
Environmental Conditions – Traffic Density	ECTD
Environmental Conditions – Flotsam and Jetsam	ECFJ
Technical - Ship	TS
Technical - VTS	TVTS

Timeline of events

-  Year
-  Incident number
-  Change to vessel characteristics

The timeline of events shows each incident in terms of occurrence date and when key changes were made to the vessel.

Incident classification

Figure 1 shows how the incidents have been broadly classified, these classifications cover causation and outcome.

To understand the potential impact of each incident, the hazard categories identified within the Ports of Jersey Tactical Navigational Risk Assessment (TNRA) (**Table 2**) should be considered. In some cases, the possible outcome that may have occurred if corrective/preventative action was not taken or was not effective should be considered. These ‘forecasted’ results are shown in **Figure 2**.

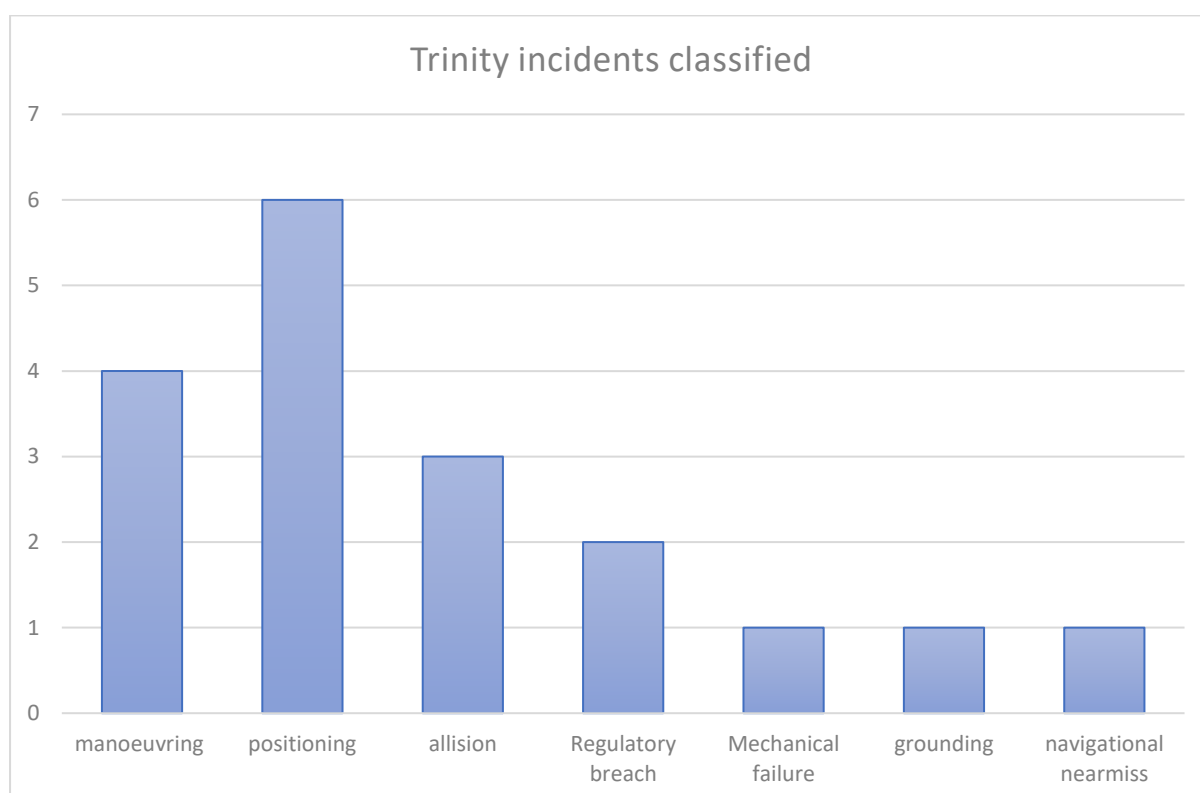


Figure 1 Incidents classified by causation or outcome

Table 2 Incident classifiers

Ref	Hazard category	Comments
A	Collision	Two or more vessels impact each other whilst manoeuvring.
B	Contact	One or more vessels makes physical contact with a fixed object such as a pier / jetty or a mooring buoy. This hazard is sometimes referred to as “allision” when contact is made with a fixed structure, or a “striking” when contact is made with a floating structure (e.g. navigation buoy or anchored or moored ship).
C	Grounding	A vessel unintentionally makes contact with the seabed.

D	Sinking / Foundering / Capsize	A vessel fills with water for any reason including capsizing, and when overwhelmed, sinks.
E	Mooring Incident / Breakout	A vessel ranges (moves excessively) while alongside the berth or when one or more mooring lines fail resulting in the vessel unintentionally breaking away from its moored position.
F	Anchor Dragging	A vessel unintentionally moves from its anchored position because the anchor has failed.

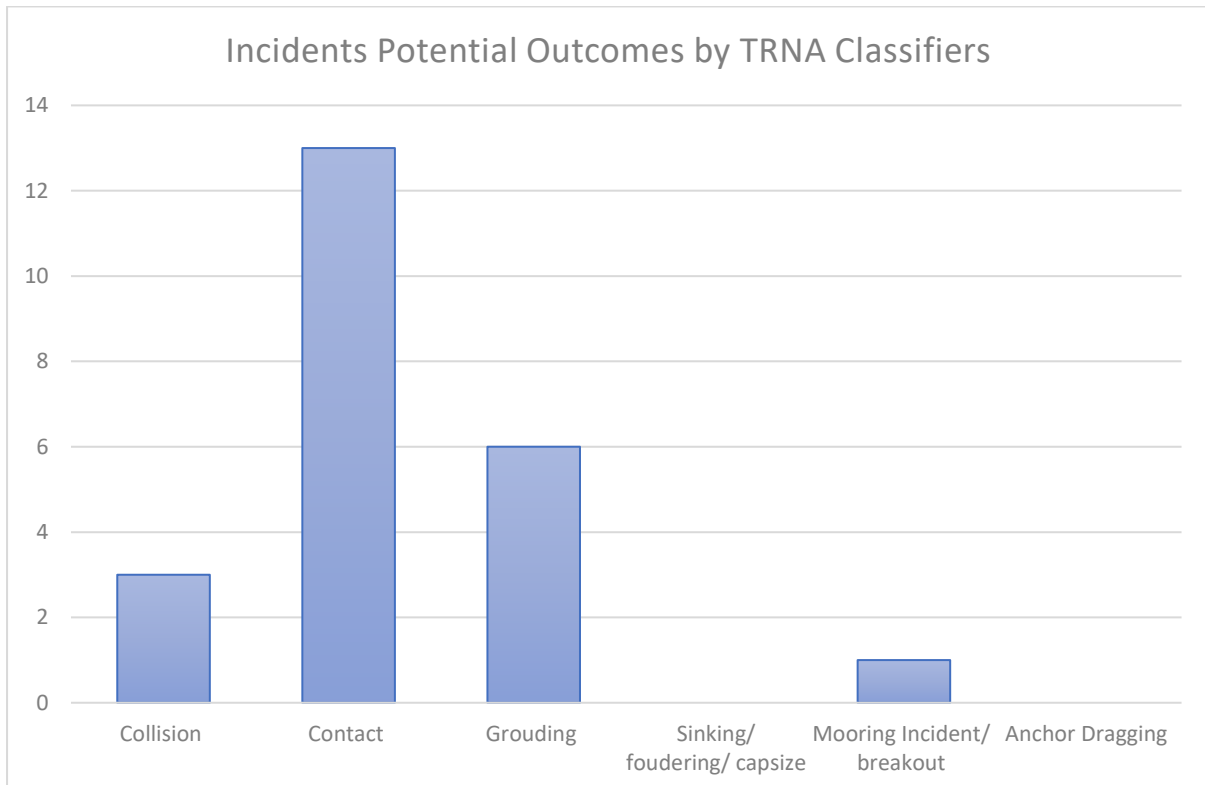


Figure 2 Incidents classified by potential risk outcomes considering the TRNA hazard categories

To assess if the vessel's direction of travel (inbound or outbound) is a contributing factor for each incident, the statistics have been plotted in **Figure 3**. The difference is insignificant as the results are almost equal.

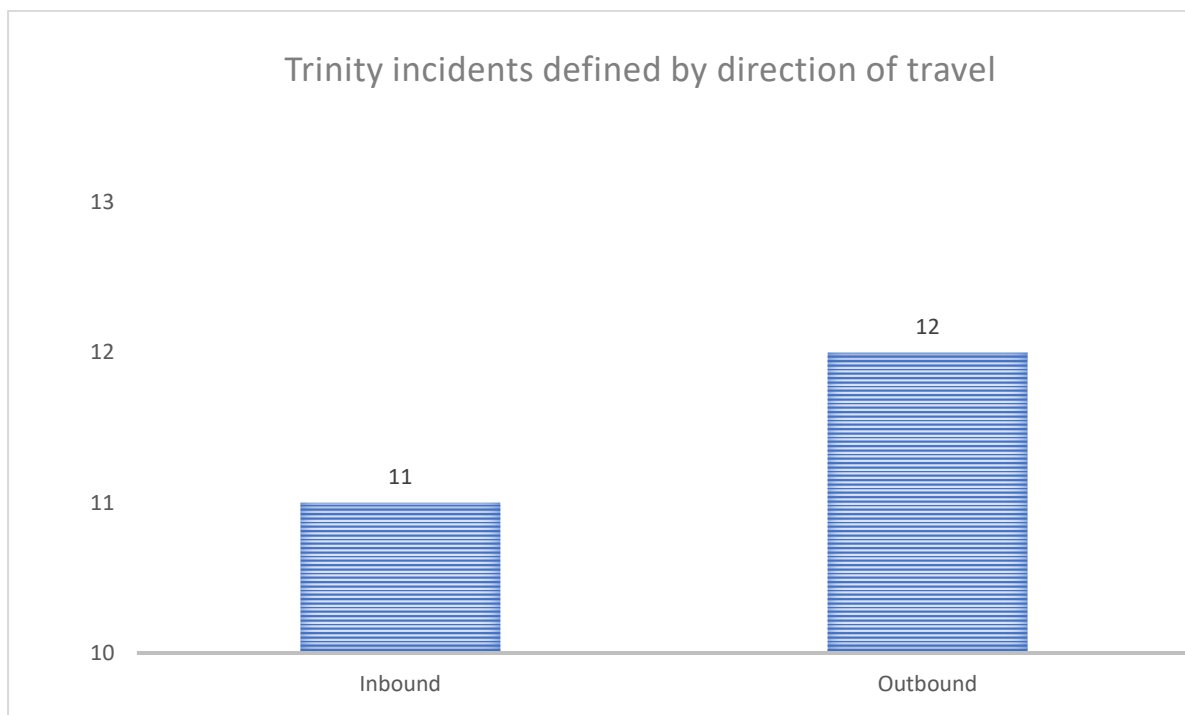


Figure 3 Trinity incidents defined by direction of travel

Location classification:

For consistency between this assessment and the TNRA, the same area definitions have been used to classify the incidents. A description of each area is shown in Table 3.

Table 3 Area classification

Area	Area Name	Comments
1	Precautionary Area (PA)	This is the charted area including St. Helier Harbour and approaches (The “Small Roads”) and includes both the greatest traffic densities and number of control measures available to Ports of Jersey.
2	Vessel Traffic Service (VTS)	The VTS area extends 1nm North of Corbiere, reaching from St Ouen’s Bay 2NM West of Corbiere. 3.7nm South of Corbiere across Jersey’s South Coast to 2.4nm East of St Catherine’s breakwater, reaching 0.7nm North of St Catherine’s from 6.4nm South.
3	Territorial Water (TTW)	Denotes the remainder of the extent of Port of Jersey’s jurisdiction. 660nm ² .

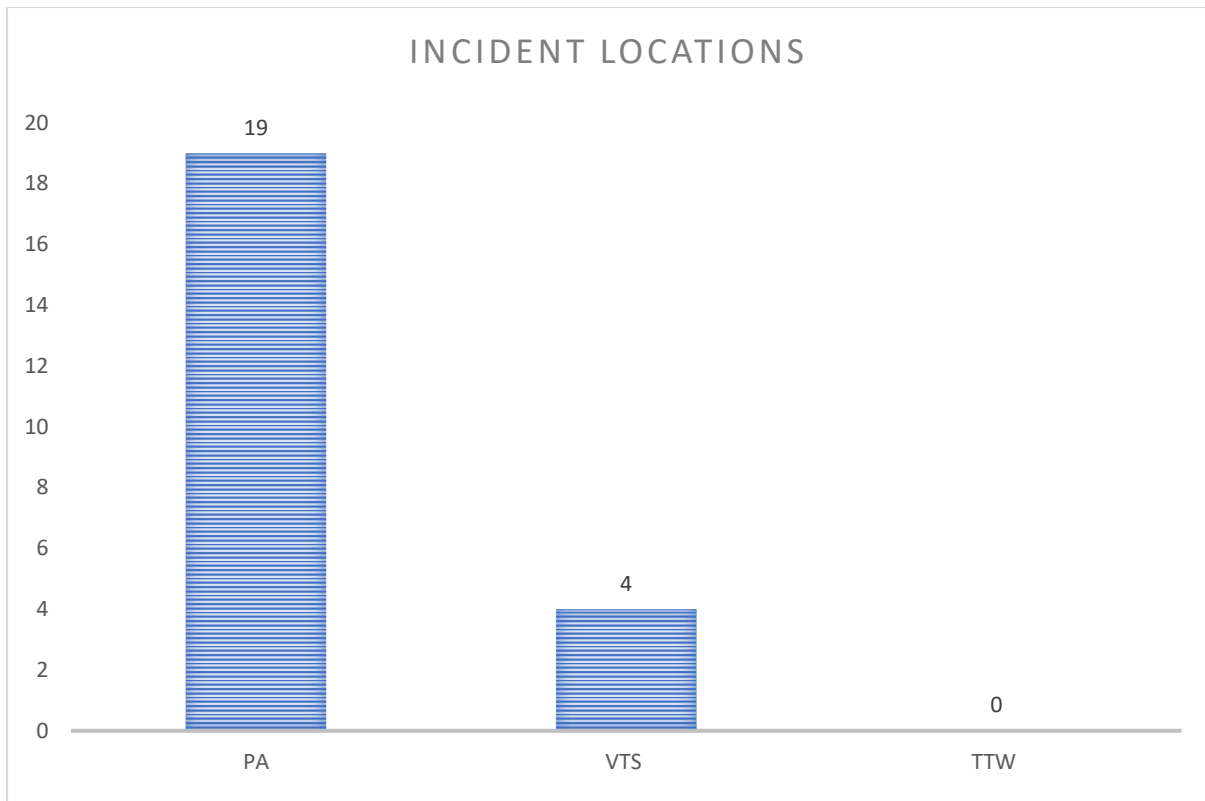


Figure 4 Incident location

Further detail of where the 19 incidents that occurred within the precautionary area is shown in **Figure 5**.

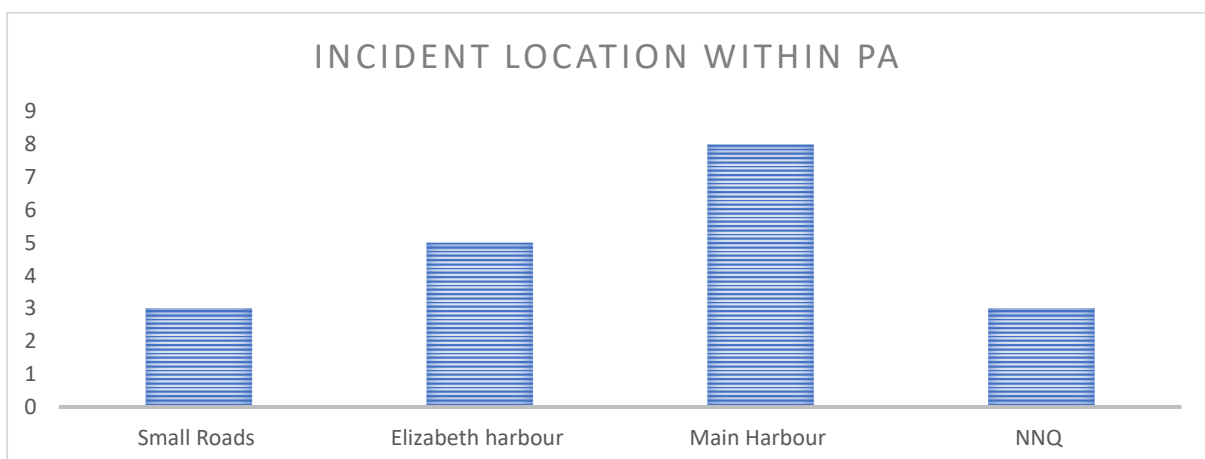


Figure 5 Location detail for incidents that occurred within the precautionary area

Associated risk assessments

High-level risk assessment of the port operations is provided by the corporate Q Pulse Risk platform.

The most relevant risk assessments for the Trinity's operation are:

- Loss of navigational control in precautionary area
- Loss of navigational control in VTS INS area
- Loss of navigational control in VTS area
- Oil pollution within Port limits.

When considering the evidence in **Figure 4**, it is clear the biggest risk is within the precautionary area. Therefore, the most relevant risk assessment is the ‘loss of navigational control within the precautionary area’. This assessment provides a broad overview of the potential causes for a contact or grounding and comprehensive list of mitigations that are in place to prevent these outcomes. **Figure 6** shows an overview of the bowtie.



Figure 6 Q Pulse Risk Bowtie, for 'Loss of Navigational control within the Precautionary area'

Risk mitigation:

Table 4 shows a list of the risk control measures (RCM) that are in place to mitigate a potential ‘loss of navigational control within the precautionary area’. The risk control measures are taken from the TNRA. Each control has been ranked as ‘effective’, ‘partially’ and ‘not effective’ when specifically considering the operations of the Trinity.

Table 4 Risk Control Measures form the TNRA

ID	RCM	Control Type	Effectiveness
1	General Directions	Regulation	Effective
2	Pilotage Directions	Regulation	Effective
3	NTMs	Regulation	Effective
4	Codes of Practice	Regulation	Effective
5	Pilotage Service	Services	Partial
6	VTS	Services	Effective
7	Ship Towage	Services	Partial
8	Conservancy	Services	Effective
9	Nav aids	Physical	Effective
10	Tide Gauges, Met Stations	Physical	Effective
11	Traffic Lights	Physical	Effective
12	Signage	Physical	Effective
13	Emergency Plans	Plans	Effective
14	Pollution Control Plans, Equipment and Procedures	Plans	Effective

15	Coastguard and Rescue Services	Rescue service	Effective
16	Enforcement Policy	Policy	Effective
17	Routine Broadcasts	Policy	Effective

The risk causation must also be considered. The potential cause of each incident outlined in the Q Pulse risk shown in **Figure 6** have been ranked on likelihood, using the scale used by the Ports of Jersey 5x5 risk assessments shown in **Figure 7**. The number of incidents related to causation factor have also been shown, some incidents have more than one causation factor, causation factors for each incident are shown in **Figure 1**.

E (Very Likely / Almost Certain)	Could happen or has happened in one month
D (Likely)	Could happen or has happened between one and six months
C (Possible)	Could happen or has happened between six months and one year
B (Unlikely)	Could happen or has happened between one year and ten years
A (Rare)	Could happen or has happened beyond ten years

Figure 7 Likelihood as ranked by the Ports of Jersey 5x5 risk assessment template

Table 5 Potential incident causation factors ranked by likelihood

ID	Potential cause	Ranked likelihood	Number of related incidents
1	Human factor	Likely	19
2	Environmental Conditions – Weather	Possible	4
3	Environmental Conditions – Tide	Possible	0
4	Environmental Conditions – Visibility	Possible	1
5	Environmental Conditions – Traffic Density	Unlikely	1
6	Environmental Conditions – Flotsam and Jetsam	Rare	0
7	Technical – Ship	Unlikely	7

8	Technical – VTS	Rare	0

Conclusion

On review of the evidence in **Table 4**, it can be perceived that the areas where there is a potential to improve the risk control measures is pilotage and ship towage.

Pilotage is only considered partially effective as it is only fully effective when the pilot is onboard. Extra check trips have already been completed to verify the quality of the Trinity’s Masters actions. Although 19 incidents are flagged as ‘Human Factor’ as a causation in **Table 5**, it is difficult to differentiate between the decisions of the Master at the time of the incident and the inability to accurately manoeuvre the vessel due to her handling capabilities. It would be unrealistic to recommend the vessel to require a pilot for every movement. This would create an unnecessary risk for excessive pilotage transfers where the two regular masters of the vessel already hold PEC qualifications.

Ship towage is only considered partially effective as it is not always present. On review of the incidents in **Table 1**, towage is seen to be an effective risk control measure and has prevented allisions on a several occasions. This report has highlighted that there are currently no clearly defined weather limits under which the Trinity is required to utilise tug assistance. There is evidence of a discussion between Faversham and Ports of Jersey that:

“[There is a] consensus from both is that in winds SSW to W’ly, when anything above 20kts, the Halcyon is very useful to hold the stern to the West (away from the Bank south of the Yacht Club).” *Email recorded in MOC teams VTS Posts.*

VTS officers are very aware of the vessels capabilities and are conscientious to always liaise with the vessels master around the requirements for a tug to assist. This is known to occur when winds are over 15knts, but it is not considered mandatory.

Physical changes and development must not be ignored and should be considered when discussing navigation within the inner harbour; this includes changes made to the Albert Pier with the development of the leisure pontoons. A risk assessment was completed prior to the installation of the pontoons that highlights towage as a mitigation control.

Considering the results of this report, it is recommended that towage assistance during the arrival and departure of the Trinity becomes mandatory. This is considered to be the only practicable way to further increase risk mitigation around the vessel’s movements. This change in operation will be reflected in Albert Pier Pontoon risk assessment and feed into the TRNA.

The evidence in this report was reviewed by the Ports of Jersey Navigational Advisory Panel which agreed that the most suitable mitigation was to mandate the provision of towage for each arrival/departure of the Trinity. The report was also reviewed by the Ports of Jersey Marine Pilots, the Deputy Harbour Master, the Harbour Master, several of the Ports of Jersey Harbour Managers and a selection of the Coastguard and VTS watch officers. It was noted that in the event in which towage is unavailable (due to technical issues, maintenance, or other urgent requirements) then the vessel would not be refused entry and that this would provide suitable mitigation in reducing the likelihood of an incident occurring.

Further actions that have been identified as requiring completion are shown below.

- Continue to engage with the vessel owners.
- Review the Albert Pier New Pontoon Risk Assessment.
- Update the TNRA considering the incidents associated with the Trinity and any findings from reviewing the Albert Pier Pontoon Risk Assessment.

Appendix 1 update:

15 November 2023:

Following continued work on the assessment of the Trinity, an update has been drafted to keep this report relevant. A list of further incidents since the last update in the above report is included in Table 6.

Table 6 Continued summary of incidents table.

	Incident No	Incident title	Date of Occurrence	Type of incident	Severity
23	14766	Manoeuvre whilst departing NNQ in SSW F5/6	06/04/2023	Navigational Near miss	2
24	15409	Trinity Allision with Albert Pontoons/ JLA Rib	24/02/2023	Allision	2
25	15927	Trinity required an urgent push to bring the bow round inside the main harbour	01/09/2023	Navigational Near miss	3
26	16147	Trinity departure, near allision, St Helier Harbour	13/10/2023	Navigational Near miss	2
27	16155	MV Trinity arrived with no Nav lights	17/10/2023	Equipment failure	2

Ports of Jersey has continued to engage with Faversham Marine in relation to the incidents reported in Table 6.

Mandatory towage on arrival and departure from St Helier for the Trinity is still a requirement.