



COMPREHENSIVE REVIEW OF THE STEAMSHIP AUTHORITY'S OPERATIONS SUPPLEMENT – PUBLIC COMMUNICATIONS

7 February 2019

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Executive Summary

This supplement to the document entitled *Comprehensive Review of the Steamship Authority's Operations*, December of 2018, focuses on the aspects of the Steamship Authority's public communications as they existed in the Spring of 2018. For the purposes of this review, public communications are defined as the protocols and procedures utilized by the SSA to communicate with the communities they serve or impact, the passengers they serve and the general public and media as a whole. These communications are of most critical importance during times of crisis or service disruption and the incidents of the Spring of 2018 proved to be a substantial test of the SSA's public communications.

As a public agency, the Steamship Authority has a responsibility to be transparent in its actions and proactively communicate their plans and status of operations to the general public frequently, and in a timely manner. At no time during the course of this review did the SSA appear to reject this responsibility. In fact, it was the impression of the study team that the leadership at the SSA made every effort possible to achieve a high level of transparency with the general public, in some cases above and beyond what the team felt was necessary. However, these efforts were hampered by several factors which the study team believes the SSA can address. In some cases these factors have been, or are in the process of being, addressed by the SSA.

Proactive Communications

As highlighted in the main report, the public perception of the SSA has not always been favorable, nor accurate. A contributing factor to this has been the SSA's inability to effectively communicate the narrative they wish to convey to the general public. Doing so engages the public in both positive and negative scenarios, but with a clear indication of transparency. However, in the past the SSA has been too reactive in its communications, without a plan or the resources to properly implement it.

Utilize Available Technology

In today's world, public communications have been heavily impacted by extremely dynamic and real-time technologies. For the most part this benefits society, as new technologies create more real-time and user-friendly ways to communicate to the general public. If these new technologies are utilized wisely, they can greatly increase the efficiency and accuracy of public communications. However, in the past, the SSA has been reluctant to engage certain communications channels. In particular, this includes social media such as Facebook and Twitter. While social media may invite some unwanted discourse, the benefits far outweigh the risk if it is carefully planned, implemented and administered.

Timely and Frequent Communications

The SSA places a considerable amount of value in providing detailed public communications but, in times of crisis in particular, this comes at the expense of both frequency and timeliness. Numerous communications from the Spring of 2018 reviewed by the study team were carefully

crafted to provide a high level of detail as to the nature of an incident and how it was being handled by the SSA. While this is admirable, in times of crisis it is not necessary to communicate that level of detail. What matters most are the facts that are pertinent to the travelling public at the time; what sailing has been cancelled, when will service be restored (if reliably known), how are any safety concerns being addressed, and when the next public communication will be delivered. The details surrounding the cause of an incident are better left to disclosure at a later date in order to ensure updates of the most pertinent information are provided frequently and in a timely manner.

Process-Based Management

The main report highlighted several recommendations based in the concept of process-based management. This has not changed for the public communications area of focus. Rather, it is further reinforced by this section. Many of the solutions to issues identified in this supplement to the report can be addressed and implemented through a shift to process-based management.

Moving Forward

In the area of public communications, the SSA has already taken several positive steps toward improving their approach and process. The most notable, and probably having the most immediate impact, being the hiring of a Communications Director. In doing so the SSA has added a necessary resource allowing them to begin addressing many of the issues they faced in the Spring of 2018. Now with this added resource the SSA should be in a good position to begin developing and implementing processes to deliver effective and timely public communications.

Section 1 Introduction

1.1 Purpose of Study

The Steamship Authority (SSA) is the primary ferry system providing service to the islands of Martha's Vineyard and Nantucket from Cape Cod. In March and early April 2018, an unprecedented series of mechanical and operational problems occurred on the ferries, resulting in many unexpected trip cancellations. The events led to an erosion in public confidence and raised questions about the SSA's vessel maintenance practices, fleet rotations, public communications and other aspects of its operations.

The purpose of this study is to understand any systematic problems and organizational circumstances that allowed or encouraged the problems the SSA experienced in the spring of 2018, and develop practical and effective recommendations that will reduce the chances of any such problems in the future.

1.2 Scope of Study

The scope of the study was limited to five areas of focus, as defined below:

- **Vessel operations.** Vessel operations encompasses the management of the vessels: fleet scheduling and planning, support logistics, crew scheduling, policies, and procedures. It also includes onboard vessel operations, such as navigation, passenger management, deck operations, engineering, and standard operating procedures.
- **Fleet maintenance.** The evaluation of fleet maintenance includes both planned and unplanned maintenance events. Planned maintenance events cover both the routine maintenance items performed by SSA personnel and depot-level maintenance that is outsourced to contractors and shipyards. The evaluation also includes the methods by which the SSA determines maintenance requirements, how resources such as time, budget, and personnel training are allocated to conduct maintenance, and how the effectiveness of the SSA's maintenance program is determined.
- **Management structure.** Management structure is defined as the relationship between organizational culture and organizational structure that results in the overall organizational climate. This relationship determines the effectiveness of management to perform well and meet its objectives. These three elements function in a similar fashion as gears in a machine, whereby if they don't integrate the machine will not run properly. A review of the SSA's management structure focuses on how well integrated these three elements are and the resulting performance of the organization. Additionally, this review looks closely at recent changes, how management has adapted and the effect they have had on its performance.
- **Information technology systems.** The evaluation of IT Systems includes a complete review of the SSA's IT architecture, including its website/reservation system, finance system, phone system, asset maintenance system, email or alert systems and how each system is integrated with the other, as well as the redundancy, security and hosting/reliability of each system. The SSA has purchased new financial and hardware/software recently and implemented redundancy and disaster recovery processes. Therefore, much of the review focuses on the integration of information, the

collection and accuracy of the information, the ease of use and updating the information, and the timing or speed in which the information is disseminated to end users.

- **Public communications.** The complete evaluation of Public Communications including a thorough review and recommendations based on all communication protocols and processes between the SSA and City / Port Officials, Passengers, Service companies needing to access the islands, and the General Public that are affected by delays and/or cancellation of ferry service. As the Communications Director is a newly created position, a review of historical communication protocols and the departments involved was conducted to aide the new Communications Director in the set-up and implementation of newly established communication protocols and ideas.

Vessel Operations, Fleet Maintenance, Management Structure and Information Technology Systems were addressed in the Final Report of a Comprehensive Review of the Steamship Authority's Operations, 13 December 2018. The final area of focus, Public Communications, is addressed separately in this supplement to the Final Report.

Section 2 Methodology

This study focused on five primary areas of the SSA's operations: vessel operations, fleet maintenance, management structure, public communications and information technology systems. The methods used in this study were designed to identify the most valuable recommendations to improve these areas of the SSA's operations. This was accomplished through a combination of data review, general observations by subject matter experts, and root cause analysis.

2.1 Project Plan

A formal project plan document, approved by the SSA as the project sponsor, was agreed upon and utilized to guide project execution, facilitate communication among stakeholders, and document the scope and schedule. This was done to align the goals of all parties and ensure a clear focus on the objectives throughout the project.

The project planning process cooperatively established project objectives and measures for success before work on the project commenced. The organization of the project team was defined, and guidelines for decision making and managing conflict and change were established in writing. The project plan also contained communications protocols and project meeting schedules.

2.2 Data Requests

Data that was needed to perform analyses was requested from the SSA early in the project schedule. The SSA provided timely response to requests, allowing the study team to become familiar with SSA operations in advance of their site visit. Requested data included:

- Paper records – logs, paper charts, correspondences, procedures, policies, administrative controls, etc.
- Electronic records – procedures, policies, administrative controls, drawings, performance and operational data, analysis results, procurement specifications, etc.
- People – discussions with employees, management, participants, etc.

2.3 Site Visit and General Observations

The project team performed a site visit during a five-day period from Monday July 23rd through Friday July 27th to make observations and gather data that could not be acquired remotely. One of the key objectives during the visit was to identify areas in which the SSA excels and what their key challenges are. General observations were made throughout the visit to gain insights regarding the culture at the SSA, general operating practices, and the underlying causes and impacts of recent incidents.

Meetings and interviews were conducted with a broad cross-section of management, staff, front line workers, ship's officers and crew, and members of the SSA's Board and Port Council. Interview questions were developed in advance, incorporating the best available knowledge at the time of inception. During the meetings, additional inquiries were made as new information emerged.

2.4 Root Cause Analysis

This study utilized root cause analysis (RCA) to examine incidents with high potential learning value, particularly incidents that were likely to be representative of systemic problems across the organization.

The study team selected an RCA process derived from the American Bureau of Shipping (ABS) Marine Root Cause Analysis Technique (MaRCAT, Reference 2). In this technique, causal factors of marine incidents are identified and analyzed in order to identify the underlying root causes of the incidents.

The objective of the RCA process is to identify where improvements in management systems could have prevented the causal factors from occurring. Even in instances where individual personal performance (the human element) or mechanical failures are identified as causal factors of an incident, this technique shows how the root cause of incidents is almost always the absence, neglect, or deficiencies of management systems.

A review period was held with the SSA in order to verify the facts surrounding each incident investigated through the RCA process. This review was performed by conducting videoconferences with appropriate stakeholders identified by the SSA. The presentation included a synopsis of each event, demonstration of the causal chain of events, identification of the key causal factors, and a review of the root cause mapping process. Where necessary, facts were confirmed or reinvestigated.

More information on the root cause analysis method is presented in Section 3.1 of this supplement.

2.5 Development of Recommendations

The methods described above provided the study team with two primary sources of data with which to identify challenges at the SSA. This in turn allowed the study team to develop a set of potential solutions for each challenge.

Solutions to the problems identified by the RCAs are intended to provide systematic improvements that address the intermediate and root causes of each incident:

- Intermediate solutions – Address the explicit reasons why a causal factor occurred, providing quick fixes, but do not address the root cause.
- Root cause solutions – Address underlying deficiencies in management that allow causal factors to occur. Typically represent longer term efforts and results.

Solutions were also developed to address problems identified from observations made during the reconnaissance and data collection process.

The set of solutions from RCAs and General Observations were evaluated for conflicts, similarities, and synergies. This resulted in a subset of recommendations.

Recommendations were then evaluated for their potential impact and ease of implementation. Impact represents the net benefit a recommendation has on the organization, in terms of overcoming one or more of the problems identified in our investigation. Ease of implementation measures how easily a recommendation can be implemented, based on cost, schedule, labor, and other potential barriers.

The final recommendations presented in Section 5 of the Final Report are those which maximize impact and minimize barriers to implementation.

Section 3 Root Cause Analysis

3.1 Introduction to the Root Cause Analysis Process

The root cause analysis technique used by the study team is a structured approach to investigating events that was derived from ABS guidance and is a widely accepted standard across the marine industry (Reference 2). After selecting incidents for analysis and gathering and preserving the necessary data, a data analysis technique must be adopted.

The analysis technique adopted for this study combines the ‘five-why’s’ technique with causal factor charting. Combined, this technique charts a chain of building blocks that establishes a timeline and the relationships between known events and conditions, as illustrated in Figure 1.

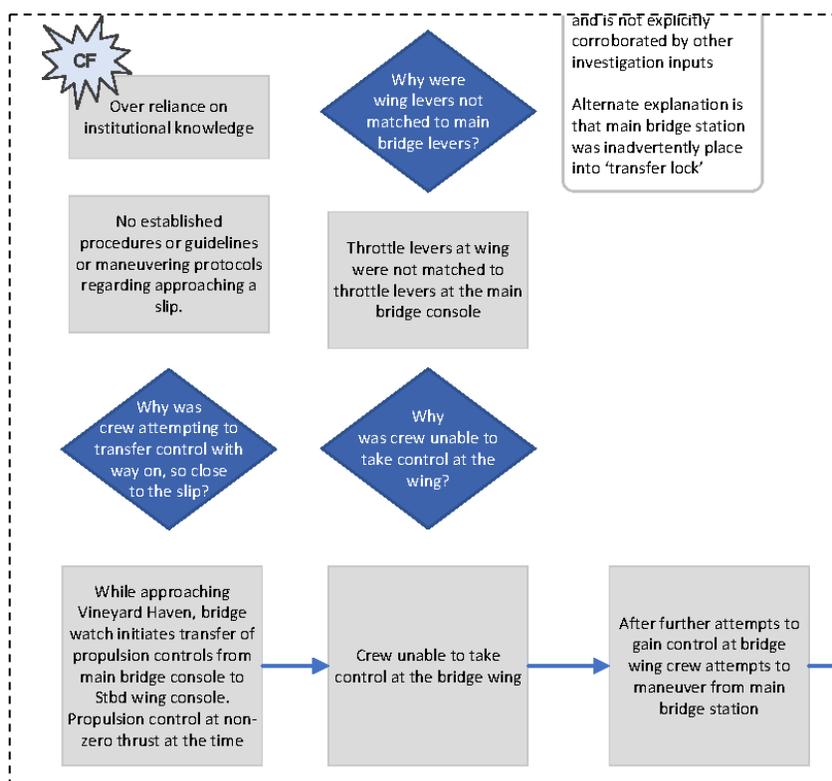


Figure 1 Sample causal factor building blocks

Building blocks lead to causal factors, which include structure, machinery, equipment, outfitting, human errors, and external factors. Incidents may have multiple causal factors.

Intermediate and root causes of the incident are derived from the causal factors using ABS’s root cause analysis map (see **Appendix A of the Final Report**). A given causal factor may take a single path through the map to lead to a root cause, or it may follow multiple paths leading to multiple intermediate and root causes.

In the following section, a summary of the root cause analysis of the SSA’s messaging to the public regarding service disruptions is presented. The summary provides a synopsis of the potential communications failures, identifies the causal factors, and illustrates how the causal factors were mapped to intermediate and root causes. Specific solutions are presented for each intermediate and root cause, and a concise list of both immediate solutions and root cause

solutions is presented in **Section 5 of this supplement**. Solutions to both the intermediate and root causes were used to inform the study's Final Recommendations that are contained in December 13, 2018 Final Report.

In several cases it was not possible for the team to answer every question or determine the immediate cause of equipment failures. However, the focus of a root cause analysis is to determine the failures in management systems which allowed for the immediate cause to have a negative impact. While it would be nice to know why a particular piece of equipment failed or a decision was made, the true value of root cause analysis is to identify how that failure could have been sustained without it resulting in an incident. In each case, the team was successful in accomplishing this.

Regarding public communications, the RCA process was applied to the existing (Spring of 2018) communications process for messaging the public during service disruptions. As opposed to focusing on a single incident, the study team determined the RCA analysis would be more effective and more inclusive by identifying causal factors of potential failures of the process. This is similar to performing a risk analysis whereby potential risks are identified and mitigating actions can be taken.

3.2 Public Communications – Messaging the public regarding service disruptions

In the Spring of 2018, the SSA experienced numerous service disruptions which resulted in the cancellation of one or more sailings.

An examination of the public communications process in which the public was notified regarding service disruptions (cancellations, delays, and schedule updates) revealed the potential for breakdowns in the communications chain when messaging the public.

The root cause analysis of this event resulted in the causal factor chart illustrated in **Appendix A of this supplement**, and identification of the following causal factors:

Causal Factor #1: Initial reporting not homogenized

Causal Factor #2: Available technology not utilized

Causal Factor #3: Delays to public statements

Determinations of root causes for these causal factors are described below.

3.2.1 Causal Factor #1: Initial reporting not homogenized

When a service interruption (trip cancellation/delay) occurs, it is highly probable that uncontrolled messages are received by the public when initial reports are made. Although these initial reports are largely internal, they are made verbally (over the phone/radio or amongst the crew and passengers on board the affected vessel). Since this is the first message in a chain of communication that will likely end as a public statement concerning the incident, it is important that initial reports be controlled, homogenized by formalizing in writing and addressed to predetermined groups. This should be accomplished as early in the process as is practically feasible.

This causal factor follows a single path when mapped to the root cause (**see Appendix A – RCA Map #1**).

Root Cause Mapping: Initial Reporting Not Homogenized		
Category	Mapping	Description
Problem	Human (4)	The nature of the problem was that a human(s) relied on an informal system of initial reporting that was incomplete and not well defined.
Problem Category	Company Employee (12)	The individuals responsible for establishing and utilizing the initial reporting system were company employees.
Cause Category	Procedures (120)	A procedure should identify the initial reporting requirements for the system.
Cause Type	Not used (121)	An unwritten or informal process was followed and was inadequate / incorrect.
Intermediate Cause	No Procedure for Task/Operation (122)	An adequate procedure for initial reporting does not exist.
Solution to Intermediate Cause	Establish a procedure for initial reporting.	
Root Cause Type	SPACS Issue (256)	No procedure exists to ensure that adequate initial reporting is performed.
Root Cause	No SPACs / Issue not Addressed (257)	

3.2.2 Causal Factor #2: Available technology not utilized

When a service interruption (trip cancellation/delay) occurs, the SSA messages the public using a communications system that does not reach all of the desired audience. Communications technology that is common and available throughout the marketplace was not being utilized and integrated, resulting in an exclusion of some end users. For example, available technologies that were not fully utilized include text/sms messaging, social media message sharing/linking. Other improvements regarding mobile applications and mobile-friendly websites that cater to specific audiences can be improved. Digital signage is another available technology which is not currently utilized. Walk-up passengers were also excluded from messaging as their contact information was not collected.

This causal factor follows a single path when mapped to the root cause (see **Appendix A – RCA Map #2**).

Root Cause Mapping: Available technology not used		
Category	Mapping	Description
Problem	Machinery / Equipment (2)	The nature of the problem was that the technology used was insufficient.
Problem Category	Design Problem (6)	The system design was insufficient.
Cause Category	Design Input / Output (20)	Design input did not ensure adequate technology was utilized in the system.

Root Cause Mapping: Available technology not used		
Category	Mapping	Description
Cause Type	Design Input Issue (21)	
Intermediate Cause	Design Scope Unclear (22)	Design scope was unclear and did not ensure current technology was utilized in the system.
Solution to Intermediate Cause	The system for messaging the public should be reviewed in order to determine the technologies necessary to reach the intended audience.	
Root Cause Type	SPACS Issue (256)	The design process is not administered to identify all of the groups that require messaging, the gaps in end user messaging and the most widespread and effective means to alert them.
Root Cause	Not Strict Enough (258)	

3.2.3 Causal Factor #3: Delays to public statements

When a service interruption (trip cancellation/delay) occurs, updates regarding schedule changes and fleet status resulted in delayed messaging to the public. Public statements that were made were not effectively reaching all intended users or timely, thus passing the burden of informing the public to front line employees who are not formally provided with a consistent public message.

This causal factor follows multiple paths when mapped to the root cause (See Appendix A – RCA Map #3):

Root Cause Mapping: Delays to public statements (a)		
Category	Mapping	Description
Problem	Human (4)	The nature of the problem was that a human(s) made public statements regarding service interruptions.
Problem Category	Company Employee (12)	The individuals responsible making public statements were company employees.
Cause Category	Procedures (120)	Procedures should outline the requirements for making public statements.
Cause Type	Not used (121)	An unwritten or informal process was followed and was inadequate / incorrect.
Intermediate Cause	No Procedure for Task/Operation (122)	An adequate procedure for making public statements does not exist.
Solution to Intermediate Cause	Establish a procedure for making public statements.	
Root Cause Type	SPACS Issue (256)	No procedure exists to ensure the adequacy and accuracy of each public statement.
Root Cause	No SPACs / Issue not Addressed (257)	

Root Cause Mapping: Delays to public statements (b)		
Category	Mapping	Description
Problem	Human (4)	The nature of the problem was that a human(s) made public statements regarding service interruptions.
Problem Category	Company Employee (12)	The individuals responsible making public statements were company employees.
Cause Category	Responsibility/ Authority (200)	The responsibility / authority was unclear, conflicting or confusing.
Cause Type	Responsibility/ Authority Not Defined (201)	The lack of a definition of the responsibility / authority contributed to the delay in public statements
Intermediate Cause	Responsibility/ Authority Not Defined (201)	
Solution to Intermediate Cause	Review the existing process for making public statements and examine where responsibility and authority are assigned. Develop procedures to ensure guidance is specific enough to eliminate confusion and that clearly defined contingencies are in place	
Root Cause Type	SPACS Issue (256)	No procedure exists to ensure who has responsibility and authority regarding public statements.
Root Cause	No SPACs / Issue not Addressed (257)	

3.2.4 Solutions to Root Causes – Public Communications. Messaging the public regarding system delays.

The following solutions are provided to address each root cause identified through this analysis:

Causal Factor	Solutions
1. Initial reporting not homogenized	Establish a procedure/system that ensures initial casualty or service disruption reporting is consistent, timely and has predetermined distribution requirements. This process should maximize available technology for efficiency of use and accuracy.
2. Available technology not used	Establish a design review process which requires frequent scope assessments and consideration of a dynamic transportation industry that utilizes the latest technologies.
3. Delays to public statements	Develop a clear policy and procedure as to the issuance of any public statements regarding service disruptions. Ensure responsibilities and authorities are adequately defined and that, in times of emergencies, there are contingencies in place to ensure that proper public statements can be issued regardless of the circumstances.

Section 4 General Observations:

4.1 Public Communications

4.1.1 Perceived Lack of Transparency

Onsite field observations and staff interviews revealed that the SSA has been criticized by island residents, port council and board members, local media, and online blogs, forums and social media activists for not being transparent enough regarding operational issues that affect the public. For example, during the Spring of 2018, there were numerous vessel cancellations which the general public was not informed of in a timely manner.

In large part, these issues were not due to any lack of desire by the SSA to communicate and provide transparency, but rather a lack of having formalized communications protocols in place and the ability to utilize the proper communications tools to reach all affected audiences, as well as, the general public and media.

4.1.1.1 Issues

Public confidence in the SSA has been eroded and a perceived lack of transparency exists. Although no evidence emerged that the SSA actively withheld information from the public it is clear that resources were primarily dedicated to understanding and resolving the operational issue at hand rather than communicating with the public in a timely manner. This was largely due to a poorly planned approach to public communication. This caused a critical situation, a series of breakdowns in 2018, that resulted in a considerable damage to the integrity and reputation of the SSA organization.

4.1.1.2 Industry Standards/Best Practices

Public communications activities and communication protocols are often incorporated in crisis management and/or emergency response plans as part of an Incident Command System (ICS), a standardized approach to the command, control and coordination of emergency response. A typical ICS has 5 major functional areas: Command, Operations, Planning, Logistics, and Finance/Administration.

Whether as a standalone process, or one element of a broader ICS, it is standard to maintain policies and procedures that outline specific communication steps to be executed in the event that operational issues arise.

Among these procedures is the organization's initial response to media outlets. This response is often scripted and intended to be distributed in a timely manner. Media updates are brief in nature, but clear and direct, allowing organizations time to gather additional and critical facts and information. Initial communications should also provide a clear date and time when additional facts and details will be provided.

4.1.1.3 Specific Solutions

Solution #1

Collaborate with a public relations firm to identify the life-cycle of various types of crises (operational, business structure, acts of god, rumors, scandal, etc.) and develop a crisis communications plan that:

1. Identifies the Steps to gather information
2. Identifies the Audiences affected (ferry riders, employees, general public)
3. Appoints a crisis team
4. Appoints a designated spokesperson

Establish scripted responses, that cover a wide range of possible incidents. Consider the level of detail necessary in order to provide needed information in a frequent and timely manner with specific follow-up dates and times that must be met.

Whether the event is a simple cancellation due to weather, or a collision with casualties, ensure the safety and concern for passengers and crew is always stated up front in each communication to let the public and employees know that they are the priority in any situation.

4.1.2 Terminal signage deficient

During the site visit, it was observed by the team that the terminals, docks, ticketing offices and parking lot facilities have insufficient signage to communicate both critical and basic information to passengers. This includes information such as current ferry schedules (in real-time), which vessels are currently serving which routes, locations of ticket scanners, pedestrian access and bus routes to parking lots.

It was noted at the time of the visit that the loading process, which involves scanning tickets, is inconsistent by terminal. No LED signage existed in the ticketing offices informing passengers of schedule changes, on-time status or system delays and there were no signs directing passengers to pier side check-in / scanning stations.

In Woods Hole it was noted that although designated bus lanes were labeled (with paint on the asphalt) there were no signs directing passengers to the appropriate bus. Also, no exclusive right of way exists for passengers as they were observed walking in front of traffic as they moved from the ticketing terminal to the boarding location. At the time, the Woods Hole terminal was under construction but there were no temporary signs and this condition was also noted at other terminals.

Finally, at each terminal, while each ferry slip is clearly designated by number, individual loading piers are not designated or clearly identified.

4.1.2.1 Issues

The lack of proper signage causes significant passenger confusion or passengers who are simply uninformed. This results in passengers approaching front-line SSA employees at docks, ticketing terminals, and parking lots to answer basic questions. This adds to a poor guest experience but also places unnecessary burden on employees and makes them less efficient. While personal interaction is a critical aspect of all front-line employees, appropriate signage can decrease the burden and frustration significantly.

In times of crisis, this becomes more of an issue as all available resources are required for response activities and stress levels are heightened for both passengers and staff alike. This can quickly contribute to elevated safety risks.

4.1.2.2 Industry Standards/Best Practices

Industry standards vary regarding signage. Strategically-placed monitors and signage providing real-time updates are utilized throughout the transportation industry both to improve the passenger experience and gain significant operational efficiencies.

Many terminals and transit stations include a variety of pedestrian activities within the same general area. People may be standing in line to purchase tickets, waiting to meet someone or passing through to another area. The passenger flow and concentration of activity largely dictates the type of signage and the message displayed. Following are some different examples utilized in varying conditions and purposes:

This static sign tells the traveler their location. It can be easily read at a distance and clearly understood by both domestic and international travelers.



The digital sign to the right sends a clear message to travelers that the next ferry is on time. This type of signage provides real-time information.



The digital sign below sends a clear message to bus riders: bus number, route number and arrival time. There is also a strategically placed map of each route located below the LED sign. This type of signage provides real-time information.



The scrolling LED sign to the right is part of a network of digital signage that can be continuously updated thus providing customers with the most current information. A sign like this could display a message such as, “Martha’s Vineyard 10:45 am departure cancelled. Next departure 12:00 pm”



4.1.2.3 Specific Solutions

Solution #1 – Perform Review

Perform a comprehensive review of all signage at all terminal locations. Identify necessary signage and most effective approach. Make each terminal location consistent to create the best guest experience.

Solution #2 – Address immediate needs regarding signage

1. Install LEDs in ticketing office and onboarding locations to display schedules and status updates.
2. Traffic signs directing traffic for passenger cars, trucks and buses
3. Signs directing passengers to terminal ticketing, food/concessions, and restrooms
4. Traffic signs directing passenger routing to onboarding location for ticket scanning, waiting area prior to boarding, and boarding lines/lanes (around buses / cars / taxis)
5. Large digital sign at each pier identifying the pier designation, vessel name, destination, status, and status updated every 2-3 minutes

4.1.3 Messaging and Alerts Technology

Onsite field observations and staff interviews indicated the following:

It is important to note that uninformed passengers were observed arriving at terminals with no particular guidance regarding the status of vessels (on time, late, cancelled, estimated time of arrival, etc.) resulting in potential terminal back-ups.

Although the SSA's website included a means to alert passengers with updates regarding ferry delays and cancellations, the content was not easily and clearly identifiable among the other information displayed on the homepage and the website was not completely mobile compliant. Additionally, at the time of onsite observations, it was also noted that the website's real-time ferry schedule information display did not provide some pertinent information, such as full status and a rescheduled time.

The SSA utilizes an email alert system to communicate service disruptions to passengers. However, not all affected passengers are notified since contact information at the time of the review was limited to 1) vehicle reservations 2) customers purchasing ticket packages from the website that opted into receiving emails from the SSA and 3) customers purchasing tickets from the mobile app (only available to passengers on the Hyannis to Nantucket passenger-only vessel). It was also noted that a portion of the email updates sent to customers were often SPAM blocked.

It was observed that when customers purchased tickets at the terminal, contact details were not collected and therefore the option to receive automatic updates regarding ferry schedules, delays and cancellations did not exist for this large group.

At the time of the site visit no system of collecting passenger mobile telephone numbers to send SMS / Text Message Alerts existed and no system was being actively investigated. SMS/Text

alerts could be sent to anyone who signed up for them directly on the mobile app or made a reservation.

The SSA did not have an active Facebook, Twitter, Blogger or other social media platforms to communicate schedules. Not utilizing social media to communicate alerts and other information has excluded some members of the public from receiving timely status updates regarding schedule changes, SSA events and other useful information.

When alerts to the public are generated, they originate on board the vessel as verbal communications and pass through an informal communication protocol that verifies the information and ultimately delivers the message to the public. It was noted that the internal email system used to send messages from the vessel to shore is slow and has intermittent connectivity. As a result, marine personnel onboard the vessels with communication duties primarily utilize mobile phones and two-way radios to update terminals and ticketing agents regarding system delays, thus leaving some operations staff out of the communications loop at early critical stages. Interviews with SSA employees revealed events in which the operations staff were notified well after event occurrence. See RCA – Messaging the public regarding service disruptions.

4.1.3.1 Issues

Under the SSA’s current messaging system, updates regarding the ferry system are not reaching all of the impacted audience (examples of audience not receiving messaging includes: vehicle reservations and passenger reservations without emails, travelers who have not opted in for email/text alerts, and the general “walk-up” tourists / general public).

During trip cancellations, uninformed passengers arrive at terminal locations without the ability to adjust their plans. This unnecessarily adds to terminal traffic, resulting in longer lines and a poor passenger experience.

4.1.3.2 Industry Standards/Best Practices

Transportation service providers that used to rely on more institutional tools such as two-way radios, emails, and websites are integrating communication technologies such as text/SMS messaging, social message sharing/linking and improved mobile applications and mobile-friendly websites that cater to their specific audiences in one common tool/application.

There has been an explosion of information channels and real-time technology solutions that have been developed over the past decade allowing more opportunities to reach the public than ever before while adhering to industry standard privacy and government communication policies. These technologies can be integrated into reservation platforms, websites, mobile apps, email platforms, and social media sites.

4.1.3.3 Specific Solutions

Solution #1

Establish one common mobile application / reservation system for all ferry systems operated by the SSA and collect the necessary contact details of each passenger in order to communicate any change in their purchased departure. Ensure system functionality is user-friendly and utilize informative graphics to condense information into an easily recognizable format that can be quickly accessed by the user, printed or shared with other users.

Solution #2

Within the common reservation system/mobile application, make real-time text/SMS and email messaging system the priority that alerts all reservation passengers regarding schedule updates, delays, cancellations, new times and advisories. Ensure the option to opt-in for notifications and alerts is provided at the time of purchase and consent in collecting and using passenger information is accepted and that mobile text messaging rates apply; also meeting the requirements of the new European General Data Protection Regulation (GDPR).

Solution #3

Post real-time schedule statuses (on-time, delayed, cancelled, and newly added departure times) from the single reservation / mobile application platform to all other email, sms/text, media/press, and social media channels utilizing a “share to social functionality” that quickly and automatically sends approved email or text message to all of your social media sites instantaneously.

While social media platforms can be a ‘double edged sword’ in terms of communication, top platforms do not allow constant and inappropriate online behavior or badgering and offer the ability to monitor and respond to both positive and negative issues.

Section 5 Summary of Solutions

5.1 Introduction to Solutions

The analysis of SSA’s operations identified numerous areas of potential improvement. Section 5 of the Final Report details the opportunities for improvement that were deemed to be both achievable and impactful.

Where these opportunities for improvement were deemed to be both achievable and impactful, they were included in our final recommendations. The final recommendations aligned with four key categories:

1. Implement Process-based Management
2. Establish a Vision
3. Change Organizational Structure
4. Change Management Recruitment and Performance Evaluation

Similar to the tactically-oriented solutions identified in the other four areas of review, the solutions identified through review of the SSA’s public communications practices further support the Final Recommendations contained in Section 5 of the Final Report. As detailed below, the solutions identified for public communications do not necessitate the need for any additional Final Recommendations. Consistent with the other four areas of focus, the solutions can be addressed individually at the tactical level but will also support the longer-term strategic objectives of the Final Recommendations indicated.

Root Cause Analysis Intermediate and Root Cause Solutions

Causal Factor #1	Initial reporting not homogenized	Recommendation
Intermediate Solution	Establish a procedure for initial reporting.	SMS
Root Cause Solution	Establish a procedure/system that ensures initial casualty or service disruption reporting is consistent, timely and has predetermined distribution requirements. This process should maximize available technology for efficiency of use and accuracy.	SMS
Causal Factor #2	Available technology not utilized	Recommendation
Intermediate Solution	Review the existing messaging system and identify technologies to address gaps.	QMS
Root Cause Solution	Establish a design review process which requires frequent scope assessments and consideration of a dynamic transportation industry that utilizes the latest technologies.	QMS

Causal Factor #3	Delays to public statements	Recommendation
Intermediate Solution (a)	Establish a procedure for making public statements.	SMS
Intermediate Solution (b)	Review the existing process for making public statements and examine where responsibility and authority are assigned. Develop procedures to ensure guidance is specific enough to eliminate confusion and that clearly defined contingencies are in place.	SMS
Root Cause Solution	Develop a clear policy and procedure as to the issuance of any public statements regarding service disruptions. Ensure responsibilities and authorities are adequately defined and that, in times of emergencies, there are contingencies in place to ensure that proper public statements can be issued regardless of the circumstances.	SMS

Public Communication General Observation Solutions

i. Perceived Lack of Transparency	Specific Solutions	Recommendation
	Crisis Communications Plan	SMS
	Increase number and frequency of updates	SMS
ii. Terminal Signage	Specific Solutions	Recommendation
	Perform review of signage at all terminals and develop a long-term plan	QMS
	Address immediate needs	QMS
iii. Messaging and Alerts Technology	Specific Solutions	Recommendation
	Employ a common mobile application and reservation system	QMS
	Develop a real-time text/SMS and email messaging system	QMS

	Post real-time schedule statuses utilizing multiple communications channels	QMS
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The RCA and General Observations identify several solutions to potential issues associated with the SSA’s public communications protocols and tools. These solutions continue to support the ten final recommendations provided in the main body of the report.

In particular, the adoption of process-based management systems would benefit the SSA’s public communications by establishing clear and concise guidance and protocols for how the SSA communicates with the public, both in times of crisis as well as on an ongoing basis to further the SSA’s objective of transparency.

Appendix A

Root Cause Analysis Causal Factor Chart

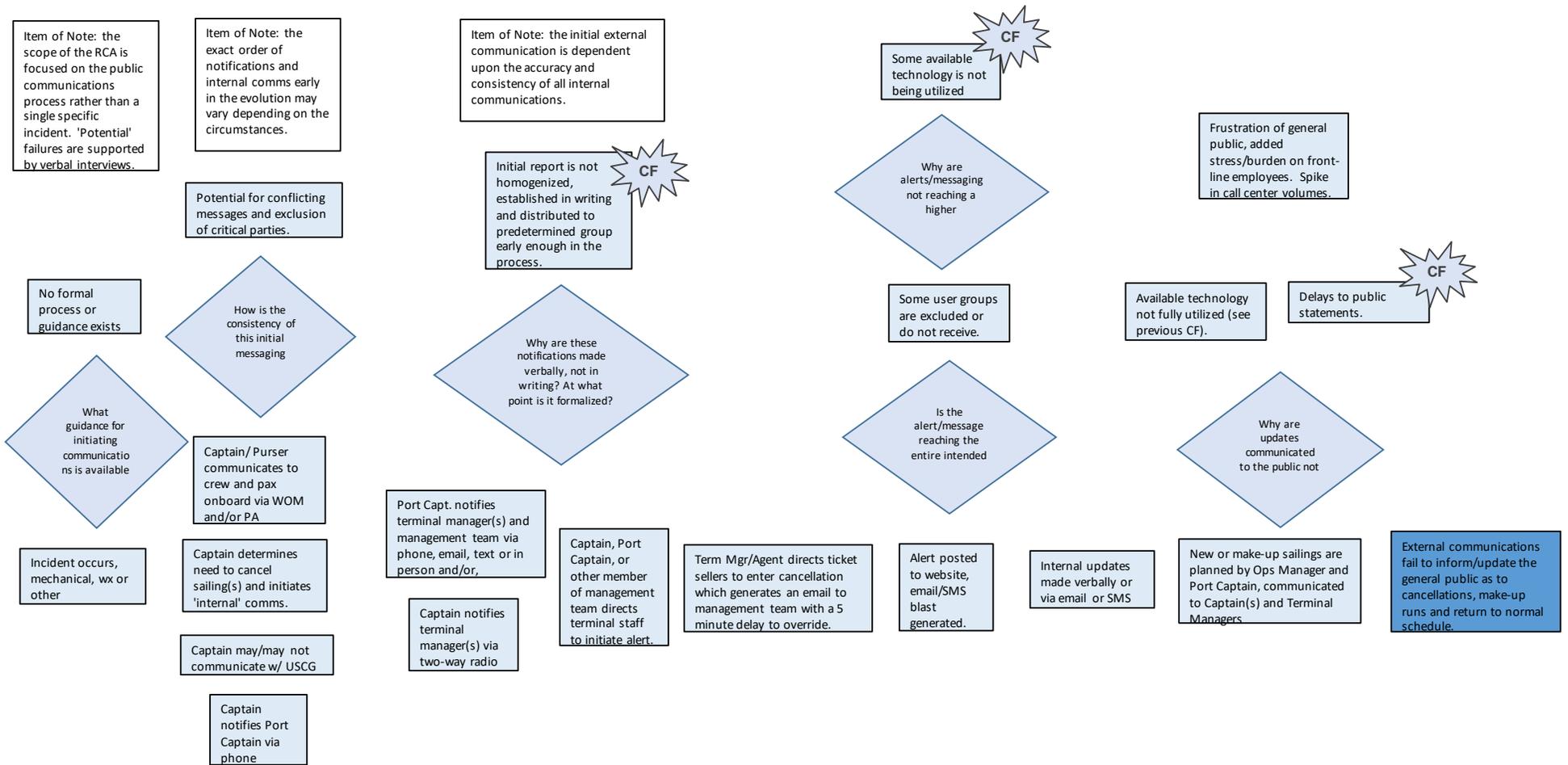
Root Cause Analysis Maps

Causal Factor #1: Initial reporting not homogenized

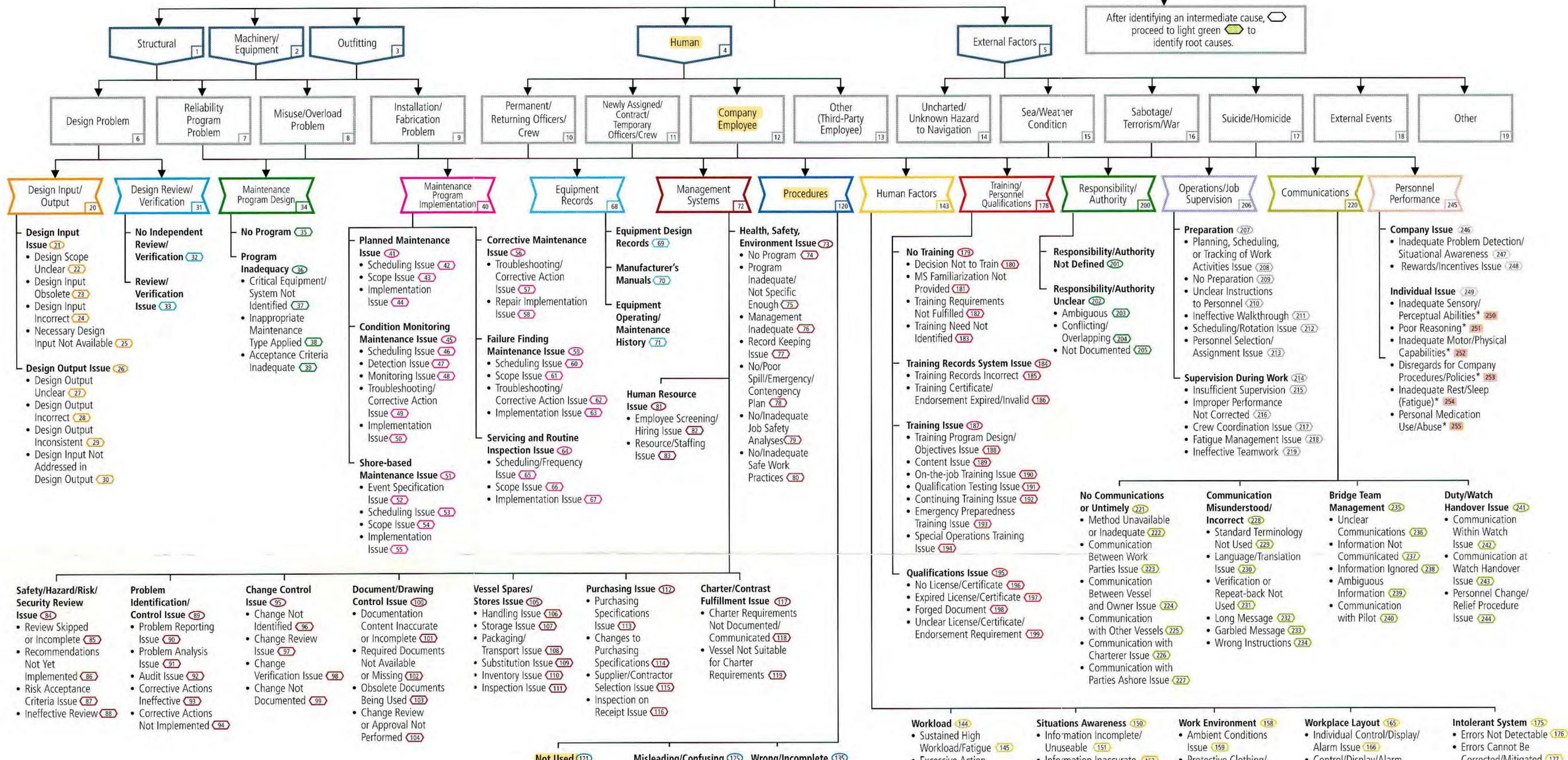
Causal Factor #2: Available technology not utilized

Causal Factor #3: Delays to public statements

CAUSAL FACTOR CHART - PUBLIC COMMUNICATIONS



Start Here With Each Causal Factor



After identifying an intermediate cause, proceed to light green to identify root causes.

Marine Root Cause Analysis Map™

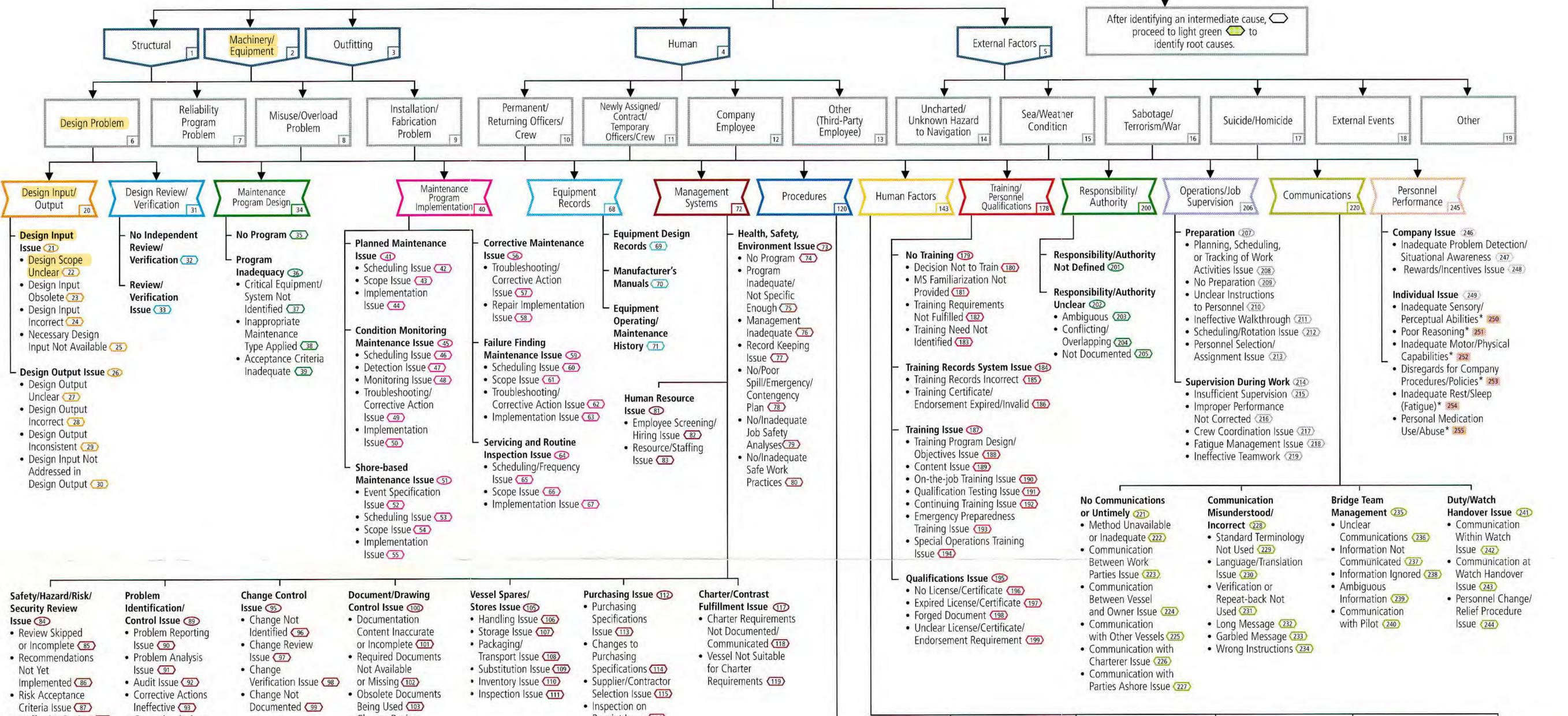
Shape	Description	Notes
	Problem	Numbers here correspond to the Map Item number in Appendix A of the ABS Guidance Notes on the Investigation of Marine Incidents
	Problem Category	
	Cause Category	* These Items are for descriptive purposes only. Code only to Personnel Performance - Individual Issue.
	Cause Type	Copyright 2005, Rev. 1M (06/05)
	Intermediate Cause	
	Root Cause Type	
	Root Cause	

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Enter Here With Each Intermediate Cause

Company Standards, Policies, or Administrative Controls (SPACs) Issue (256) <ul style="list-style-type: none"> No SPACs/Issue Not Addressed (257) Not Strict Enough (258) Confusing, Contradictory, or Incomplete (259) Technical Error (260) 	Company Standards, Policies, or Administrative Controls (SPACs) Not Used (261) <ul style="list-style-type: none"> Tolerable Risk (262) Unaware of SPACs (263) Recently Changed SPACs (264) Enforcement Issue (265) 	Industry Standard Issue (266) <ul style="list-style-type: none"> Situation Not Addressed by Standard (267) Standard Confusing, Contradictory (Internal or External), or Incomplete (268) Technical Concern with Standard (269) Inappropriate Standard Applied (270)
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Start Here With Each Causal Factor



Marine Root Cause Analysis Map™

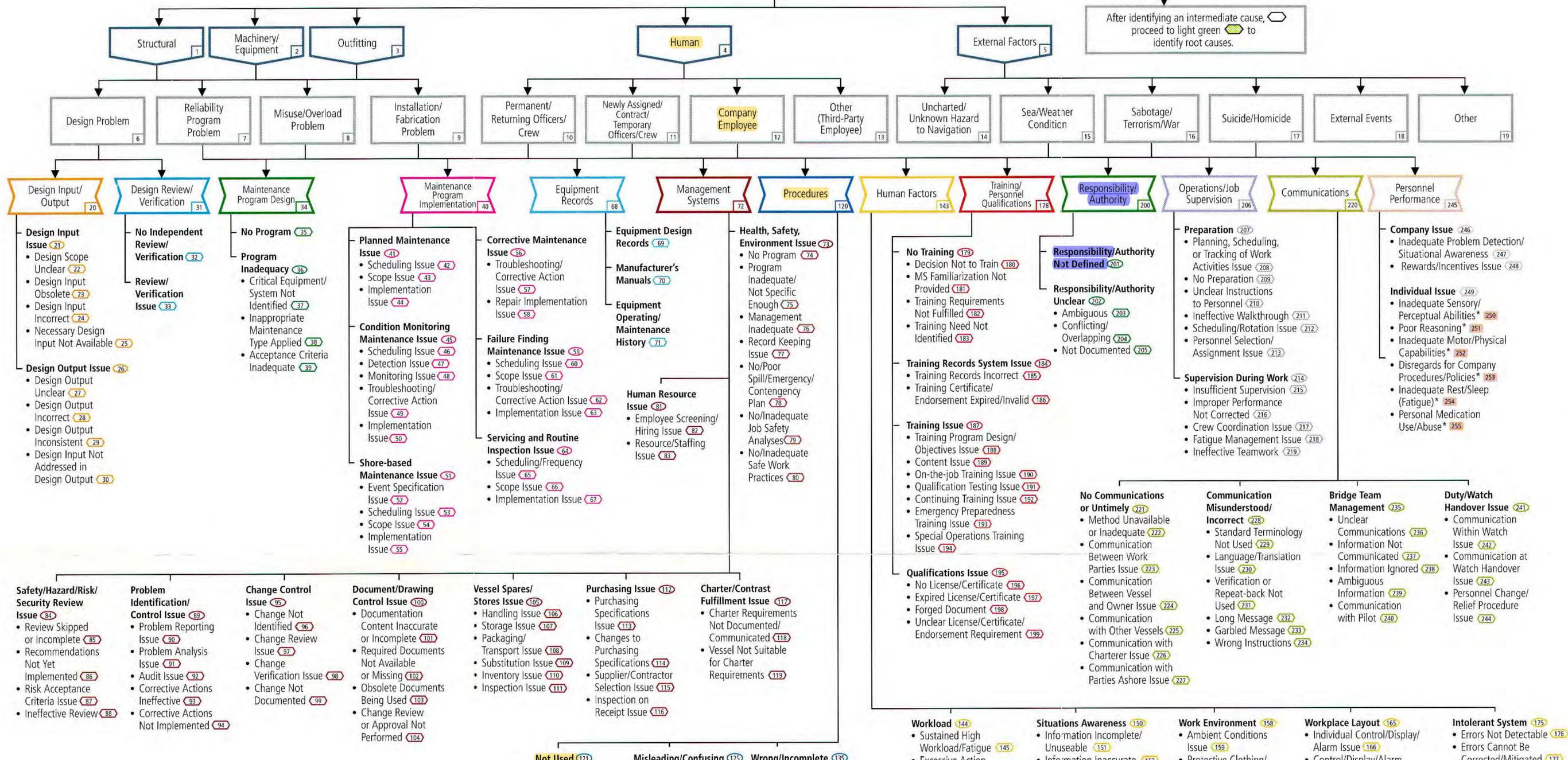
Shape	Description	Notes
	Problem	Numbers here correspond to the Map Item number in Appendix A of the ABS Guidance Notes on the Investigation of Marine Incidents
	Problem Category	
	Cause Category	* These Items are for descriptive purposes only. Code only to Personnel Performance - Individual Issue.
	Cause Type	Copyright 2005, Rev. 1M (06/05)
	Intermediate Cause	
	Root Cause Type	
	Root Cause	

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Enter Here With Each Intermediate Cause

Company Standards, Policies, or Administrative Controls (SPACs) Issue ²⁵⁶ <ul style="list-style-type: none"> No SPACs/Issue Not Addressed ²⁵⁷ Not Strict Enough ²⁵⁸ Confusing, Contradictory, or Incomplete ²⁵⁹ Technical Error ²⁶⁰ 	Company Standards, Policies, or Administrative Controls (SPACs) Not Used ²⁶¹ <ul style="list-style-type: none"> Tolerable Risk ²⁶² Unaware of SPACs ²⁶³ Recently Changed SPACs ²⁶⁴ Enforcement Issue ²⁶⁵ 	Industry Standard Issue ²⁶⁶ <ul style="list-style-type: none"> Situation Not Addressed by Standard ²⁶⁷ Standard Confusing, Contradictory (Internal or External), or Incomplete ²⁶⁸ Technical Concern with Standard ²⁶⁹ Inappropriate Standard Applied ²⁷⁰
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Start Here With Each Causal Factor



Marine Root Cause Analysis Map™

Shape	Description	Notes
	Problem	Numbers here correspond to the Map Item number in Appendix A of the ABS Guidance Notes on the Investigation of Marine Incidents
	Problem Category	
	Cause Category	* These Items are for descriptive purposes only. Code only to Personnel Performance - Individual Issue.
	Cause Type	Copyright 2005, Rev. 1M (06/05)
	Intermediate Cause	
	Root Cause Type	
	Root Cause	

