



Incident Investigation Program

Last Revision Date: 9/13/2023

Overview

Purpose

This program was developed with the involvement of Haulin' Jack Shipping Service management team, technical staff, and hourly employees to ensure that accidents and near misses, particularly those of catastrophic magnitude or potential, are:

- thoroughly investigated
- relevant findings are implemented, and
- results are communicated throughout Haulin' Jack Shipping Service.

The goal of this program is to identify root causes of incidents and address the causes through corrective actions in order to prevent reoccurrence.

Note: Assignment of blame to individuals is not productive and should not be a part of the incident investigation process.

Scope

When the company is notified of a work-related incident, they shall appoint qualified personnel to complete an investigation of the incident. The investigation should take place as soon as possible after the incident occurs.

All incidents that result in, or could reasonably have resulted in, the following are investigated:

- an uncontrolled release of toxic materials,
- fires, explosions,
- significant equipment / structural damage,
- serious personnel injuries,
- injuries to the public,
- environmental impacts, and/or
- a significant impact on
 - reliability,
 - productivity goals, and/or
 - customer satisfaction.

While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident. First Aids should be investigated, but minimal resources may be required.

The scope includes injuries to contractor employees, contractors, visitors, and damage to equipment owned by contractors, employees, or visitors.

** This also includes unexpected shutdowns of equipment, failing to meet chartering requirements, voyage delays, and damage to cargo.

Definitions

Incident An unplanned sequence of events and/or conditions that results, or could have reasonably resulted, in a loss event.

Accident An incident with unexpected or undesirable consequences. The consequences may be related to personnel injury or fatality, property loss, environmental impact, business loss, etc., or a combination of these.

Catastrophic Accident [CA] An incident or series of incidents that results in:

- (1) one or more fatalities,
- (2) multiple serious injuries to personnel,
- (3) significant property damage,
- (4) imminent and substantial endangerment to public health,
- (5) significant environmental damage,
- (6) a catastrophic financial loss or property damage (>\$250,000), or
- (7) more than 25 similar customer complaints.

Major Accident [MaA] An incident, other than a catastrophic accident, that involves:

- (1) a single serious injury to personnel,
- (2) serious injuries to an individual,
- (3) major property damage,
- (4) minor impact to public health,
- (5) minor environmental damage,
- (6) a major financial loss or property damage (>\$50,000 but <\$250,000), or
- (7) more than 5 but fewer than 25 similar customer complaints.

Minor Accident [MiA] Any incident other than a catastrophic or major accident (e.g., an incident that):

- (1) does not involve a serious injury,
- (2) results in a minor financial loss or property damage [>\$5,000 but <\$50,000] or
- (3) results in five or fewer similar customer complaints).

Consequences Undesirable or unexpected outcomes that result in negative effects for an organization.

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Definitions, Continued

- Near Miss [NM]**
- An incident with no consequences, but could have reasonably resulted in consequences under different conditions.
- OR
- An incident that had some consequences that could have reasonably resulted in much more severe consequences under different conditions.
-

Serious Injury An injury requiring immediate medical treatment at shore-based facilities (e.g., an emergency room or a doctor's office).

Loss Event Undesirable consequences resulting from events or conditions or a combination of these.

Event A happening caused by humans, automatically operating equipment / components, external events or the result of a natural phenomenon

Condition A mode or state of being.
Note: Includes process states, such as pressure, temperature, composition and level. Also includes the state of training of an employee, the condition of raw material and supplies, and the state of equipment. If negative, then it can be a causal factor, intermediate cause, or root cause.

Causal Factor Structural/Machinery/Equipment/Outfitting problems, human errors, and external factors that caused an incident, allowed an incident to occur, or allowed the consequences of the incident to be worse than they might have been.

Problem Structural/Machinery/Equipment/Outfitting performance that deviates from the desired performance of the item.

Human Error Performance of humans that deviates from the desired performance.

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Definitions, Continued

External Factors	Issues outside the control of Haulin' Jack Shipping Service. Examples include uncharted / unknown hazards to navigation, some sea or weather conditions, suicides or homicides, and external events.
Intermediate Cause	An underlying reason why a causal factor occurred, but it is not deep enough to be a root cause.
Item-of-Note (ION)	A deficiency, error, or failure that is not directly related to the incident sequence that is discovered during the course of the investigation.
Root Cause	Deficiency of a management system that allows the causal factors to occur or exist.
Management System	A system put in place by management to encourage desirable behaviors and discourage undesirable behaviors.
Safeguard	A physical, procedural, or administrative control that prevents or mitigates consequences associated with an incident.
Recommendation	A suggestion to management to develop, modify, or enhance management systems or safeguards.
Resolution	The disposition of a recommendation.
Root Cause Analysis	An analysis that identifies the causal factors, intermediate causes, and root causes of an incident and develops recommendations to address each level of the analysis.
Apparent Cause Analysis	An analysis that identifies the causal factors for the event and develops recommendations to address them, but does not necessarily identify the root causes of the incident.

Classification of Incidents

Introduction

Haulin’ Jack Shipping Service applies appropriate resources to adequately investigate catastrophic, major, and minor incidents, as well as near misses. Because of the varying levels of risk and the desire to focus investigation resources to manage the most significant risks, the company uses different types of investigation teams, as well as different levels of investigation/documentation for each category of incident.

Role of Vessel Safety Officer

The vessel safety officer (or appropriate shore-based personnel for incidents that occur at shore-based facilities) classifies the event to determine the appropriate investigation protocol.

Role of Investigation Manager

Haulin’ Jack Shipping Service Incident Investigation Manager will review this classification and adjust the classification (if necessary) of the reported incident.

Role of Company Management

Company management may choose to modify the classification of an incident based on extenuating circumstances.

Example Incident Classification Scheme

Table 1, “Event Classification Examples,” provides an example of a classification scheme.

Table 1 Event Classification Examples

	Catastrophic Accident (CA)	Major Accident (MaA)	Minor Accident (MiA)	Near Miss (NM)	Non-Loss (NL)
Level of effort and documentation	Documentation includes analysis chart (fault tree, why tree, and/or causal factor chart) as well as: <ul style="list-style-type: none"> • description of problem • causal factors • root causes • corrective actions Analysis usually performed by work group led by an incident investigator	Documentation includes analysis chart (fault tree, why tree, and/or causal factor chart) as well as: <ul style="list-style-type: none"> • description of problem • causal factors • root causes • corrective actions Analysis usually performed by work group led by an incident investigator	Minimal level of documentation. Documentation includes: <ul style="list-style-type: none"> • brief description of problem • corrective actions Analysis usually performed by an incident investigator. Investigator may ask for others to be assigned to the team	Level of analysis is dependent upon the loss potential Level of participation by others based on loss potential Results of the analysis shared with others based on the loss potential for the incident	No analysis should be performed
Examples					
Vessel damage	Catastrophic damage to the vessel Damage to the vessel exceeding \$250,000 Vessel sinking Vessel grounding that requires dry docking of the vessel for repairs	Major damage to the vessel Damage to the vessel exceeding \$50,000, but less than \$250,000 Vessel grounding that does not require significant repairs	Minor damage to the vessel Damage to the vessel exceeding \$5,000, but less than \$50,000	No damage occurred; however, under expected conditions, vessel damage would be expected The vessel loses propulsion during close maneuvering. However, a tug happens to be available to provide immediate assistance to the vessel	The vessel strikes the dock hard as a result of an error by the tug operator. However, no damage occurred to the vessel or the dock facilities

Table 1 Event Classification Examples (cont.)

	Catastrophic Accident (CA)	Major Accident (MaA)	Minor Accident (MiA)	Near Miss (NiM)	Non-Loss (NL)
Equipment/outfitting failures and degradations	Significant damage to equipment/outfitting on board the vessel, resulting in repair costs greater than \$250,000 Ex. Damage to the vessel unloading system caused by lack of lubrication requires replacement of multiple pumps and motors. Repair costs (including parts, labor, and delays in vessel departure) total \$260,000	Major damage to equipment/outfitting on board the vessel, resulting in repair costs greater than \$75,000, but less than \$250,000. Bearing failures in a diesel engine requires reworking of the crankshaft. Repair costs total \$13,000. Following repairs to a diesel engine, personnel forgot to refill the oil sump. The damage that occurred when the engine was started required \$90,000 in repairs	Damage to equipment/outfitting on board the vessel, resulting in repair costs greater than \$75,000 Ex. A shore-based crane struck a portion of the superstructure. Repair costs totaled \$8,500 C	No damage to equipment or outfitting, but under slightly different conditions, damage could have occurred. Ex. A shore-based crane was moving towards the vessel's superstructure. Quick action by onboard personnel resulted in stopping the crane before it struck the superstructure	A piece of equipment could not be repaired because no spares were available on the vessel. Ex. The appropriate spare was delivered to the next port and the repair was made after departure. No impact on vessel chartering requirements occurred as a result
Charter impacts	Charter requirements not met. Financial impact on company greater than \$45,000. Voyage delays occur as a result of equipment failures. Payments of \$57,000 have to be made as a result of the late delivery and damage to some cargo	Charter requirements not met. Financial impact on company greater than \$15,000, but less than \$45,000. The vessel failed to arrive on time to pick up cargo. As a result, a penalty payment of \$16,000 had to be made	Charter requirements not met, but financial impact on company is limited to less than \$15,000. Damage to some cargo results in payments of \$10,000	No violation of charter requirements, but circumstances were favorable. Under most conditions, a more significant impact would have occurred. Ex. The vessel was delayed in departure but, due to favorable weather and lock traffic, was able to arrive on time	

Table 1 Event Classification Examples (cont.)

	Catastrophic Accident (CA)	Major Accident (MAA)	Minor Accident (MiA)	Near Miss (NM)	Non-Loss (NL)
Environmental impacts	<p>Significant impacts on marine life or coastal areas</p> <p>Ex. Release of large amounts of hazardous materials to the environment</p>	<p>Limited impact on marine life or coastal areas</p> <p>Ex. Release of limited amounts of hazardous materials to the environment</p>	<p>Minor impact on marine life or coastal areas</p> <p>Ex. Release of small amounts of hazardous materials to the environment</p>	<p>Potential for impacts on marine life or coastal areas</p> <p>Ex. Potential release of hazardous materials (e.g., cargo, fuel oil) to the environment</p> <p>Ex. Release of material with no significant impacts</p> <p>Ex. An oil release occurred from the vessel as it was headed into port. However, because of the location where the spill occurred, no significant environmental impact occurred. Had it occurred a half-hour later, the current would have brought the spill into shore</p>	<p>Prior to starting unloading of cargo, personnel verified all the connections (in accordance with procedure).</p> <p>Ex. Personnel discovered two loose connections. They tightened them prior to starting the unloading and no releases occurred</p>
Personnel injuries	<p>One or more fatalities</p> <p>Injuries that result in permanent disability</p> <p>Ex. A worker is crushed and killed by a load during unloading of the vessel when the load shifts and traps him between the load and support beam</p>	<p>Serious injuries to personnel that result in evacuation of the individual for immediate shore-based medical treatment</p> <p>Injuries that result in lost work days</p> <p>Ex. A worker's hand is crushed by an auger that is part of the vessel unloading system. After 3 months of rehabilitation, the worker regains full use of the hand</p>	<p>Injuries requiring medical treatment</p> <p>Ex. A worker sustains cuts and bruises during repair work. A wrench he is using slips while tightening some bolts</p>	<p>A large spill of flammable materials occurred where personnel were working; however, the material was contained and cleaned up without an ignition.</p> <p>Ex. Personnel were found performing hot work without the required permits</p>	<p>A small amount of flammable materials were spilled from a container</p>

Incident Reporting

Initial Notification

Personnel are to immediately notify the vessel’s safety officer of incidents.

Role of Vessel Safety Officer

The safety officer determines the appropriate classification for the investigation.

Incidents with Injuries

Any incident involving personal injury must be reported immediately to Haulin’ Jack Shipping Service Safety Manager.

Notification Process

The notification process must not hinder the immediate dispatch of an emergency response team to the incident site when necessary.

Emergency Response Plan

The Emergency Response Plan controls immediate notifications required to organization management and outside agencies.

Identification of Chronic Losses

Acute versus Chronic Losses

Acute losses are usually reported by personnel in the field. However, chronic losses must usually be identified by examining incident data.

Importance of Investigating Chronic Losses

Investigation of chronic events should concentrate on those types of risks that contribute the most to the overall risk of Haulin' Jack Shipping Service. This means that events that occur at high frequencies and/or have significant consequences should be the highest priorities. These events should be the highest priorities because they represent the greatest potential opportunities to reduce the overall risk levels of Haulin' Jack Shipping Service.

Identifying Chronic Losses

To identify candidate chronic events for incident investigations, incidents are grouped to determine the dominant factors that are contributing to risk.

Techniques for Determining Chronic Losses

This investigation can be performed using a variety of techniques such as Pareto investigation, failure modes and effects analysis, and fault tree analysis.

Intent

The intent is to identify the characteristics of the dominant loss events. Once the dominant failure types have been identified, incident investigation can be used to determine the causes of the events.

Details of Identification Techniques

Because the identification methods are standard risk analysis techniques, the details required for the investigation should not be covered in the incident investigation program but within Haulin' Jack Shipping Service procedures and training programs.

Investigation Team

Team Requirements

Although the size and composition of an incident investigation team vary based on the incident’s classification, each incident investigation team should meet the following composition requirements:

- At least one person knowledgeable in the process or activity involved
- A team leader and/or others with appropriate knowledge and skills to thoroughly investigate and analyze the event.

Members of the incident investigation team shall be qualified/competent individuals. Haulin’ Jack Shipping Service shall provide training on investigation techniques used during an incident investigation. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques.

Team Leaders

Investigation team leaders must have received basic training in the requirements of this incident investigation program and in basic investigation techniques.

Team Leader for Catastrophic Incidents

For personnel who may lead investigations of catastrophic incidents, additional training in more advanced investigation approaches may be necessary, at the discretion of the Incident Investigation Manager.

Typical Team Structure

Table 2, Typical Investigation Team Structure for Each Incident Classification, describes the typical investigation team structure for each incident classification.

TABLE 2
Typical Investigation Team Structure for Each Incident Classification

	Type of Accident			
	Catastrophic (CA)	Major (MaA)	Minor* (MiA)	Near Miss (NM)
Employees knowledgeable in the activity (other than the individuals involved)	✓	✓	✓	✓
Trained Leader	✓	✓	✓	✓
Vessel officers or crew	✓	✓	☒	☒
Safety Manager	✓			☒
Legal representatives	✓			☒
Experts external to the vessel / organization	☒			☒

☒ Participation will depend on the severity and / or complexity of the event

* Team may consist of one individual who satisfies all requirements.

Incident Investigation Responsibilities

- All Personnel**
- Reporting incidents as described in Section 6 “table”. Individuals shall notify the safety officer that an incident has occurred.
 - Completing Incident Investigation Initial Witness Statements. These forms should be completed by all individuals involved in or witnessing an incident.
 - Assisting the incident investigation team in investigating the event.
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- For Minor Accidents and Near Misses**
- The Vessel Safety Officer will appoint the team members and ensure that the investigation is begun within 24 hours of discovery.
 - The Vessel Safety Officer will ensure that the area is secured to prevent further injuries and equipment losses.
 - The investigation must be completed as soon as possible, and results must be documented and sent on to the appropriate member(s) of management.
 - Upon review of these results, management determines and initiates further investigation if necessary
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- For Catastrophic or Major Accidents**
- The Vessel Safety Officer immediately notifies the Corporate Safety Manager, who appoints an appropriate incident investigation team and leader.
 - The Corporate Safety Manager will determine the scope of each investigation.
 - The Corporate Safety Manager will ensure that the area is secured to prevent further injuries and equipment losses and to ensure proper emergency response for the incident.
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- Investigation Team Responsibilities**
- The investigation team follows the basic investigation procedure outlined in Haulin’ Jack Shipping Service’s incident investigation program. The investigation team is responsible for the following:
- Beginning the investigation within 24 hours whenever possible and no later than 48 hours
 - Completing the investigation as soon as possible
 - Documenting the results, including recommendations
 - Submitting the report to the Safety Manager for subsequent review, distribution, and communication.
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- Team Leader**
- The investigation team leader is responsible for communicating additional resource needs (e.g., expertise) to management when necessary to properly conduct the investigation.
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Obtaining Facts during an Incident

Gathering Information

This process involves gathering information related to the event(s) in order to understand what occurred. Note that the level of effort should be greater for events with greater actual or potential losses.[All accidents]

Step	Action		
Inspect the scene and the structures/ machinery / equipment/ outfitting involved	Stabilize the vessel / equipment / process in a safe condition Once stable, secure the area to preserve physical data so it is not disturbed		
Obtain on-the-spot information from 24 witnesses, if possible	Have witnesses complete an Initial Witness Statement from the MaRCAT toolkit		
Schedule interviews with those directly involved as soon as possible	<ul style="list-style-type: none"> Interview those who were injured (if any) and others whose input might be useful Interview those directly involved in the incident as soon after the incident as possible Conduct interviews privately and individually so that the comments of one witness will not influence the responses of others Document the results of these interviews 		
Prepare visual aids of the affected physical data for the investigation	Photographs	Videos	
	Field sketches	Missile maps (for projectiles)	
Determine the physical data that are relevant to the investigation	Structures	Chemicals	
	Equipment components	Product samples	
	Outfitting items	Other	
Obtain samples of unknown spills, vapors, residues, etc.	Note conditions that may have affected the samples		
Develop test plans for the analysis of each item of physical data, including chemical samples	Have other interested parties agree to the test plan before physical data are examined		
Perform the analysis of the equipment components and samples, following the test plan for each	When a preliminary analysis reveals that an item / sample may have failed to operate correctly, was damaged, etc. make arrangements to either preserve the items or carefully document any subsequent repairs or modifications.		
Review all sources of potentially useful documentation / information	Computer logs	Drawings	Customer records
	Written logs	Manuals	Test records
	Charts	MOC* records	QA records
	Previous incident reports	Safety, hazard, engineering analyses	Training and performance records of those involved
Examine the applicable written procedures	Operating procedures	Safety Procedures	Maintenance Procedures
Determine which incident-related items should be preserved, and establish chain-of-custody to control these items / samples	Access to these items should be controlled		
Carefully document the sources of information contained in the incident report	<i>Note:</i> This will be valuable should it subsequently be determined that further study of the incident is necessary		

* - MOC = Management of Change

Determining Causal Factors

Understand Causes
[CA, MaA]

Develop an understanding of the causes of the event using a simplified fault tree, a causal factor chart, or other appropriate methodology to structure each investigation.

Document Facts
[All]

The description of the incident facts (events and conditions) will include timing information to the extent practical.

When to Use Causal Factor Charts
[CA, MaA]

The causal factor chart is typically the primary investigation tool for incidents involving timing and people actions.

A causal factor chart is constructed by working backwards from the end result (the ultimate consequence of the incident) and by letting the questions generated by each step backwards drive the data-collection efforts.

For each step taken backwards, the sufficiency of the facts should be tested to ensure the completeness of the chart. This questioning will lead the investigators to collect the data necessary to determine any conditions that must have existed or events that must have occurred.

When to Use Fault or 5-Whys Trees
[CA, MaA]

Fault trees (or why trees) are typically the primary investigation technique for equipment/outfitting/structural issues and chronic problems.

The fault tree should be developed level by level, identifying the potential causes of the event above.

The tree that is developed should be as small as possible by truncating branches as soon as possible. Branches should be trimmed when the past experience indicates the risk associated with the branch is low or when data or information indicates that the branch is not possible or likely.

Include Only Facts
[CA, MaA]

Suppositions included on the data analysis charts/trees are clearly distinguished from facts (such as by using dashed lines under or around suppositions). All data sources should be pursued to convert the supposition into a fact.

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Determining Causal Factors, Continued

Focus is data collection not blame
[CA, MaA]

The focus of charting the incident should be to direct the data collection process to determine what happened, how it happened, when and where it happened, what actions were taken or not taken, and who was involved. While Haulin' Jack Shipping Service understands that nearly all incidents result from human error (except natural disasters), Haulin' Jack Shipping Service also understands that placing blame on individuals is inappropriate in nearly all cases. The facts will be established, including human errors committed, and then the root causes of the errors will be determined as described later.

List Alternative Scenarios
[CA, MaA]

List alternative scenarios when the precise scenario cannot be definitively established because of missing or contradictory information. In some cases it may not be ECONOMICALLY feasible to collect data even though it is TECHNICALLY feasible.

Identify Causal Factors
[All]

Identify all the causal factors.

Determining Root Causes of the Causal Factors

Step 1

Identify potential management system weaknesses that explain why the causal factors either occurred or existed.

Step 2

Determining root causes often requires more data collection, but focus the data collection on the management systems that were in place to control the human activities and equipment integrity/reliability.

Step 3

Use the Marine Root Cause Analysis Map™ to provide structure and consistency to the results.

Step 4

Document the paths through the Marine Root Cause Analysis Map.

Developing Recommendations for Each Causal Factor

Prevention	Develop recommendations for prevention of similar causal factors.
Direct	Develop recommendations that are directly related to a causal factor in the incident.
Four Levels	Recommendations should address all of the following four levels: Level 1: Recommendations to address the causal factor Level 2: Recommendations to correct the intermediate causes discovered as part of this investigation Level 3: Recommendations to correct other similar problems that exist on the vessel or in other areas of Haulin’ Jack Shipping Service (other vessel and/or shore facilities) Level 4: Recommendations to either improve or augment existing management systems or reduce the likelihood or consequence of incidents by adding or improving safeguards (which in turn require sufficient management systems to ensure that the features remain sufficiently reliable).
Practical	Recommendations should be practical, feasible, and achievable, and should reduce the risk of future incidents to acceptable levels.
Flexible	Recommendations may (and many times should) allow for a variety of resolutions.
Items-of-Note	Recommendations related to “Items of Note” should be documented in a report/memo to management, separate from the investigation report.

Determining Loss Potential

Consider Potential as well as Actual Consequences

When an accident or near miss is discovered, it is an opportunity to examine the potential consequences of the incident, in addition to the actual consequences. By doing this, the potential risk associated with the incident are examined. In other words, if the incident had happened under slightly different circumstances, could the result have been catastrophic, or is this as bad as it can be? By estimating the potential outcomes, the proper level of response to the incident can be assessed.

Qualitative versus Quantitative Estimates

Generally qualitative estimates of the potential outcomes for the incident are used. It is not practical to develop quantitative estimates of the potential consequences for each incident. Therefore, the incident investigation team will often use a loss potential matrix to estimate potential consequences. Although this is a very subjective estimate, it will provide the guidance needed to develop effective corrective actions and to perform incident trending.

Loss Potential Matrix

Probability (frequency) of recurrence	High ↑	Potential Severity or consequences			
		Low ←		→ High	
		A4	B4	C4	D4
		A3	B3	C3	D3
	↓ Low	A2	B2	C2	D2
	A1	B1	C1	D1	

Using a Loss Potential Matrix

To estimate the loss potential for an incident, the investigation team must estimate the probability of recurrence and the potential severity. The following two tables provide the categories to estimate these two parameters.

Probability of Recurrence				
Category	1	2	3	4
Frequency	Less than once in 10 years	Once in 10 years	Once a year	Once a month or more

Potential Consequences				
Category	A	B	C	D
Personal Consequences	First Aid Injury	Medical Treatment Injury	Permanent / Disabling Injury	Fatal Injury
Equipment / Property Damage	≥ \$ 1,000 ≤ \$ 10,000	> \$10,000 ≤ \$ 100,000	> \$ 100,000 ≤ \$ 1,000,000	> \$1,000,000
Schedule Impact	> 2 hours, ≤ 10 hours	> 10 hours, ≤ 1 day	> 1 day ≤ 7 days	> 7 days
Environment	> 1 drop ≤ 1 tsp	> 1 tsp ≤ 1 cup	> 1 cup ≤ 1 gallon	> 1 gallon

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Determining Loss Potential, Continued

Factors Influencing Probability of Recurrence Estimates

The probability of recurrence should estimate the probability that the incident occurs again, assuming that no corrective actions are taken. When estimating the probability of recurrence, the following factors should be considered:

- (1) the number of people and the number of components/equipment/vessels/etc., and
- (2) the number of times the activity is performed.

For example:

- If a failure of each pump is expected to occur once a year and there are 12 pumps on board, the expected probability of recurrence is 1/month (Category 4).
- A procedure that is used once per year contains an error. When the procedure is performed as written, a small amount of hazardous material is dumped on to the deck. The probability of recurrence is once per year because the procedure is only performed at this frequency (this assumes there is only one piece of equipment that uses this procedure).

Be Realistic about Potential Consequences

When estimating the potential consequences, consider what other events could reasonably occur, not the worst possible event that could occur. For example, a fire in a trash can in the lunch room could result in sinking a vessel. However, it is much more likely that the worst potential consequences of this incident would be the destruction of a small portion of the vessel, some personnel injuries, and a minor effect on the schedule.

Reporting Requirements

Team Leader Responsibilities

The team leader is responsible for ensuring that, at the conclusion of the investigation, the Incident Summary form and supporting documentation are prepared.

Purpose of Incident Report

The purpose of the report is to help others understand the incident and the corrective actions that are recommended to prevent recurrence of the same incident and other similar incidents.

Incident Investigations must be documented. Participants shall prepare a written report including the description of the incident, any evidence collected during the investigation, an explanation of the causes of the incident and corrective actions.

Incident Report Contents

The report, regardless of the type of incident, will contain as a minimum:

- Date and time of the incident
 - Date and time the investigation started
 - A description of the incident
 - Identification of causal (contributing) factors
 - Identification of root causes
 - Recommendations from the investigation
 - List of investigation team members and their roles.
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Report Level of Detail

The level of detail required will be related to the actual and/or potential risks associated with the incident(s). Additional supporting documentation may include the following:

- Parts testing/examination reports
 - Witness statements
 - Causal factor chart
 - Fault tree
 - Incident investigation forms
 - Test plans
 - Photographs or videotapes
 - Include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions.
 - Witness interviews and statements must be collected.
 - Evidence must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment., maps and diagrams.
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Documentation of Recommendations

Each recommendation should be coupled with a brief description of the rationale so that people not involved in the investigation (e.g., management) can understand the recommendation.

Reporting Requirements, Continued

Report Retention Period The Safety Manager is responsible for retaining the approved report for at least 5 years.

Report Availability The reports should be available for use during the next proactive analysis of the systems/equipment/process/vessel involved in the incident, training sessions, safety meetings, and subsequent investigations.

Report Distribution The completed reports and documented resolutions of the recommendations will be distributed to the vessels so that they can communicate these to personnel who work in the affected area and/or perform job tasks relevant to the investigation findings. Contract employees are included in these reviews when applicable (e.g., a contract worker was involved in the incident, a contract employee performed an activity related to the incident, or a contract employee was injured).

Report Routing This review is accomplished by routing a copy of the approved report to potentially affected personnel and by discussing the incident in a safety meeting.

Timely Reporting Incidents must be reported to applicable regulatory agency(s) within 8 hours of their discovery. Incidents must also be reported to the host client/ site operator as soon as possible, or in a timely manner (within 24 hours of incident).

Safety Manager Responsibilities The Safety Manager is responsible for sending out copies of the report and collecting and retaining completed (i.e., signed) routing forms or safety meeting agendas and attendance lists.

Follow-up to Investigation Recommendations

Tracking

Recommendations for all investigations will be tracked to resolution.

Need for Tracking Form

Each recommendation is assigned by the Safety Manager or the President – Operations to a responsible person who prepares a recommendation tracking form and issues it to the personnel assigned to implement the recommendation.

Resolution of Recommendations

Designated personnel respond to each assigned recommendation by either resolving the recommendation or documenting the rationale for modifying or rejecting the recommendation.

Reasons for Rejecting Recommendations

Typical reasons for rejecting a recommendation are:

- Implementation of the recommendation would increase the overall risk of operations
 - The recommendation is no longer valid
 - Implementation of other team recommendations adequately address this recommendation
 - The risk reduction associated with this item can be accomplished by a more effective (less costly, less complicated, or greater risk reduction) action
 - The recommendation is not necessary to protect the health and safety of personnel or the environment, and/or
 - The recommendation is infeasible.
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Tracking Recommendation Status

Personnel assigned responsibility for resolving recommendations provide periodic updates on the status of recommendations to the Safety Manager.

Quarterly Updates

The Safety Manager issues an updated recommendation tracking summary quarterly until all recommendations are resolved.

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Follow-up to Investigation Recommendations, Continued

Documentation of Final Resolutions The Safety Manger retains the final (complete) recommendation tracking summary (and completed recommendation rejection forms, if applicable) in an incident file, and documentation of the final resolutions are transmitted to the vessels to allow communication to the affected employees.

Trending The Safety Manager will trend the results of the incident investigations. This will consist of collecting and analyzing information related to incidents.

Requirements for Database Incident information that will be included in the incident investigation database include:

- Date and time of the incident
- Date and time the investigation started
- The process/equipment/items/vessels involved in the incident
- Environmental conditions at the time of the incident
- Identification of causal (contributing) factor types and numbers
- Identification of root causes – codes from the Marine Root Cause Analysis Map.™
- Recommendations from the investigation
- Groups responsible for the implementation of recommendations.

Periodic Review of Data The Safety Manager will periodically analyze the information contained in the database to determine the effectiveness of the incident investigation program.

Training Requirements

Training Policy

All employees receive instruction in identifying incidents requiring investigation. All contract employees receive this instruction from their own supervisors through required contractor safety orientations. Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

Role of Safety Manager

The Safety Manager ensures that training programs for employees and contractors include criteria and examples for identifying incidents requiring investigation.

Requirement for Team Leaders

Team leaders receive a minimum of 3 days of formal training in investigation methodology, including:

- (1) Effective methods for gathering data and data control,
- (2) Causal factor charting method, fault tree analysis, or the 5-Whys technique (or any combination of these) for analyzing the data that are gathered,
- (3) Marine Root Cause Analysis Map[™] methodology, and
- (4) Guidance for writing effective recommendations and reports.

Statement of Management Endorsement of an Incident Investigation Program

One of the challenges we face is to continue our efforts to improve safety/ reliability/ quality performance. In order to achieve our goal of an accident-free workplace/improved reliability/improved quality, we need to eliminate not only the incidents /loss events themselves, but also the underlying conditions that create the potential for them to occur.

If we are going to be successful in accomplishing this, it is critical that we determine the root causes of these incidents/loss events. We must go beyond addressing the symptoms to address the underlying root causes of these incidents/loss events. Unless we are certain that the root causes are identified and actions are taken to eliminate them, we cannot ensure that the incidents will not occur again.

We have begun taking steps to improve the process we use for investigating incidents/loss events. Recently, we provided training to 28 individuals in incident investigation methods. The method of incident investigation that we are training our personnel to use provides a structured process for gathering information and identifying root causes.

This new process is used not only for incidents involving injury/significant losses, but also for near misses. Near misses are incidents in which no one is seriously injured/there are no significant losses but there is a potential for serious injury/serious losses.

It is important for everyone to understand that the intent of this process is not to find fault or place blame. It is, by design, a process for identifying failures or weaknesses associated with a safety/reliability/quality management system. Once the root causes are identified, we will develop recommendations to eliminate the root causes and set individuals up to succeed in future operations. Punishment of employees involved in investigations will NOT occur unless they are involved in illegal activities such as use of drugs, stealing, gross negligence or sabotage.

We have already started performing incident investigation using the personnel we have recently trained. This requires that those individuals be released from their normal duties to collect information, conduct interviews, analyze the incidents, determine the root causes, and develop recommendations.

As a result, other people will need to fill in for those conducting the investigations or, in some cases, work may get delayed. Preventing someone else from getting hurt far outweighs the temporary inconvenience resulting from the person's participation in the investigation process. As people conduct more investigations, the time required will decrease.

We, as members of the Haulin' Jack Shipping Service leadership team, support this investigation process and ask that employees & customers support the efforts of their co-workers when they are asked to participate.

Signed, The Management Team
