

Notice of Change to Controlled Documents #94-96 /13 Aug 2012

Summary of Changes

NOC#	Ch., Sec., SOP	Summary	Revision#
<u>94</u>	Ch10 Sec 4	Vessels maintained according to class, Load Line and USCG requirements	10
<u>95</u>	Ch 7 Sec 11.1	Required use of pre-departure stamp including stability check	12
<u>96</u>	SOP-GEN-007L	Incident, accident and near miss defined for TDI internal purposes. Entire SOP revised to clarify definitions, responsibilities and procedures	9

NOC #94

Chapter 10 Maintenance of Ship and Equipment Section 4.0 Maintenance Program

Topic: Vessels maintained according to USCG, class and Load Line requirements.

Revision #	Section(s)
Revision #10	<p>4.0 Maintenance Program</p> <p>Maintaining the vessel in good operating condition will require input and assistance at all levels of the organization from the president to the vessel crew.</p> <p style="color: red;">To ensure the vessels are maintained to their class, Load Line and USCG requirements, a series of inspection checklists have been developed for the vessels. Inspections of all categories are carried out quarterly and the results (as well as Work Orders created from the inspections) are entered into and tracked in NS5.</p> <p>Recommended maintenance schedules are included in equipment/technical system manuals and should be the starting point for any maintenance program. However, a variety of factors may contribute to altered maintenance schedules and must be considered when establishing a maintenance program.</p> <p>The vessel requires both pro-active or preventative maintenance, as well as reactive maintenance. Reactive maintenance occurs when something breaks down and requires repair. Preventative maintenance is scheduled and is undertaken to prevent failures and minimize reactive maintenance. Both types of maintenance are tracked in a tracking system (NS-5 or equivalent).</p>

NOC #95
Chapter 7 Shipboard Operations
Section 11.0 Ship Stability Policy

Topic: Required use of pre-departure stamp including stability check.

Revision #	Section(s)
Revision #12	<p>11.1 Procedures</p> <ul style="list-style-type: none"> • Stability calculations must be made and recorded prior to any major vessel modification, including the installation of new deck mounted equipment or heavy loads and at any other time the master feels it is necessary; • Instructions for calculating the vessel's stability can be found in the vessel's <i>Trim and Stability Booklet</i>. Mates must also be able to calculate stability; and • Whenever stability is calculated it must be recorded and retained in the official log that verification of the vessel's stability has been calculated at the prescribed times. • Certain checks are required by regulations for various vessel systems prior to departure. A rubber stamp is provided to standardize documentation and record the results of these inspections in the ship's bridge log. This stamp includes a check for stability.

NOC #96

SOP-GEN-007L Incident Reporting and Investigation
Section 4.0 Definitions

Topic: Incident, accident and near miss defined for TDI internal purposes. Entire SOP revised to clarify definitions, responsibilities and procedures.

Revision #	Section(s)
Revision #15	<p>4.0 Definitions</p> <ul style="list-style-type: none"> • <u>Accident</u> - an unplanned, undesired event that resulted in a personal injury. • <u>Near Miss</u> - a real event typically involving a sudden release of energy that under slightly different circumstances could have caused

	<p>an accident or material damage to a vessel or the environment.</p> <ul style="list-style-type: none"> • <u>Incident</u> - an unplanned, undesired event that adversely affected the completion of a task or project
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Revised SOP-GEN-007L :

<p>SOP GEN-007L Incident Reporting and investigation</p>	
<p>1.0</p> <p>2.0</p> <p>3.0</p> <p>4.0</p> <p>5.0</p> <p>5.1</p> <p>5.2</p> <p>5.3</p> <p>5.4</p> <p>6.0</p> <p>6.1</p> <p>6.2</p> <p>6.3</p>	<p><u>Introduction</u></p> <p><u>Responsibility</u></p> <p><u>References</u></p> <p><u>Definitions</u></p> <p><u>Reporting</u></p> <p><u>Incidents Requiring an Immediate Report</u></p> <p><u>Reporting a Marine Accident, Injury or Death- Form CG-2692A</u></p> <p><u>Drug and Alcohol Testing following a Serious Marine Incident- From CG-2692B</u></p> <p><u>Incidents Requiring a Routine Report</u></p> <p><u>Investigation Procedures</u></p> <p><u>Why Accidents are Investigated</u></p> <p><u>How to Conduct an Accident Investigation</u></p> <p><u>Reporting and Investigation</u></p>

1.0 Introduction

The document provides guidelines for reporting and investigating incidents. Reporting and investigation are keystones to our safety process and should not be viewed as a punitive process. TDI-Brooks International uses the NS5 system to record incidents including injuries, illnesses, lost equipment, vessel damage, and near misses.

Reporting incidents facilitates the review of policies and procedures, which often result in system improvements. The Company reporting procedures include creating an Incident Report in the NS5 system and may extend to a full-scale Accident Investigation.

The goal of this program is to prevent future accidents/incidents.

2.0 Responsibility

The Master is responsible for reporting incidents related to ship crew and the vessel. The Party Chief is responsible for reporting incidents related to science or technical crew and operations.

It is the responsibility of management to review the incident and determine the type and class of incident (accident, near miss, reportable, non-reportable). Should management determine an incident merits an investigation, it will be the responsibility of the Company President to assign an individual to conduct the investigation, complete the record in NS5 and write a fleet memo with lessons learned if needed.

If a fleet memo is required, it is the responsibility of the Vessels Systems Manager to distribute it to the fleet in the appropriate format and place a copy on the TDI Crewing Module.

3.0 References

29 CFR 1960.29

4.0 Definitions

- **Accident** - an unplanned, undesired event that resulted in a personal injury.
- **Near Miss** - a real event typically involving a sudden release of energy that under slightly different circumstances could have caused an accident or material damage to a vessel or the environment.
- **Incident** - an unplanned, undesired event that adversely affected the completion of a task or project

Incidents include but are not limited to:

- Sickness, injury, incapacitation or fatality of a person
- Missing person
- Fire, foundering, or grounding
- Spills
- Man-over-board
- MedEvac or search and rescue operations
- Equipment loss
- Equipment failure or damage that significantly affects the scientific or technical operation
- Equipment failure or damage that significantly affects the safe operation of the vessel
- Intentional or repeated violations of safety standards

5.0 Reporting

All incidents reports must be created in NS5 and a pdf of the NS5 report forwarded to management.

Management will review the report and decide if an incident investigation is required. An investigation may require the involvement of the company HSE Officer, client safety representatives, or other outside resources, including regulatory agencies. **All investigations will be recorded in the original NS5 report under the Root Cause Investigations tab and tracked to closure in the NS5 system.**

The incident report in NS-5 should include:

- Names and positions of persons involved
- Names and positions of anyone who witnessed but was not involved in the event
- Detailed description of what happened
- What safety procedures were/ were not followed or in place
- Immediate corrective action taken
- What can be done to prevent it from happening again

5.1 Incidents Requiring an Immediate Report

Incidents involving serious injury, potential loss of life, fire or damage to the vessel, significant delays in the project schedule, or requiring immediate assistance from the office or any shore based facility or rescue organization will be **reported immediately by the most expeditious means and must be followed up by an NS5 generated report as soon as practical.** Pdf copies of the NS5 report should be sent to the TDI-Brooks President with a copy to the Vice President, HSE Officer and Compliance Officer.

5.2 Reporting a Marine Accident, Injury or Death- Form CG-2692

If an incident meets any of the following criteria, a CG-2692A form must be filled out and delivered or mailed to the nearest Coast Guard Marine Safety or Marine Inspection Office as soon as practicable. This form is located on the ship web pages on the Bridge Resource page.

The completed form will be scanned and sent to the Company President and Compliance Officer as soon as possible. Consult the Compliance Officer or Port Captain if you are not sure the situation meets the following requirements. When in doubt -- fill it out.

“2. A vessel accident must be reported if it occurs upon the navigable waters of the U.S., its territories or possessions; or whenever an accident involves a U.S. vessel; wherever the accident may occur. (Public vessels and recreational vessels are excepted from these reporting requirements.)The accident must also involve one of the following (ref. 46CFR4.05-1):

- A. *All accidental groundings and any intentional grounding which also meets any of the other reporting criteria or creates a hazard to navigation, the environment, or the safety of the vessel;*
- B. *Loss of main propulsion or primary steering, or an associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel. Loss means that systems, component parts, subsystems, or control systems do not perform the specified or required function.*
- C. *An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route including but not limited to fire, flooding, failure or damage to fixed fire extinguishing systems, lifesaving equipment or bilge pumping systems;*
- D. *Loss of life;*
- E. *An injury that requires professional medical treatment (beyond first aid) and, if a crewmember on a commercial vessel, that renders the individual unfit to perform routine duties.*
- F. *An occurrence not meeting any of the above criteria but resulting in damage to property in excess of \$25,000. Damage cost includes the cost of labor and material to restore the property to the condition which existed prior to the casualty, but does not include the cost of salvage, cleaning, gas freeing, drydocking or demurrage."*

5.3 Drug and Alcohol Testing following a Serious Marine Incident- Form CG-2692B

If an incident meets any of the following criteria, **individuals directly involved with the incident must have an alcohol test within two hours and a drug test within 36 hours.** In addition, a CG-2692B form must be filled out and delivered or mailed to the nearest Coast Guard Marine Safety or Marine Inspection Office as soon as practicable. This form is located on the ship web pages on the Bridge Resource page.

If a person involved is injured and unable to provide test samples, the forms must still be completed and the reason stated as to why the test cannot be performed. Scans of the completed forms must be sent to the company Compliance Officer as soon as possible. Consult the Compliance Officer or Port Captain if you are not sure the situation meets the following requirements. When in doubt- fill it out.

According to form CG-2692B, an "individual directly involved in a serious marine incident" is a person whose order, action or failure to act is determined to be or cannot be ruled out as a causative factor in the events leading to or causing a serious marine incident.

Form CG-2692B lists the following as criteria involving a vessel in commercial service as meeting a “serious marine incident”.

- A. *Any marine casualty or accident that occurs upon the navigable waters of the U.S., its territories or possessions, or that involves a U.S. vessel anywhere, and that results in any of the following:*
1. *One or more deaths;*
 2. *Any injury to a crewmember, passenger, or other person which requires professional medical treatment beyond first aid; and, in the case of a person employed on board a vessel in commercial service, which renders the individual unfit to perform routine vessel duties;*
 3. *Damage to property, as defined in 46 CFR 4.05-1(f), in excess of \$100,000;*
 4. *Actual or constructive total loss of any self-propelled vessel subject to inspection under 46 U.S.C. 3301; or*
 5. *Actual or constructive total loss of any self-propelled vessel, not subject to inspection under 46 U.S.C. 3301, of 100 gross tons or more.*
- B. *A discharge of oil of 10,000 gallons or more into the navigable waters of the United States, as defined in 33 U.S.C. 1321, whether or not resulting from a marine casualty.*
- C. *A discharge of a reportable quantity of a hazardous substance into the navigable waters of the United States, whether or not resulting from a marine casualty.*
- D. *A release of a reportable quantity of a hazardous substance into the environment of the United States, whether or not resulting from a marine casualty.*

5.4 Incidents Requiring a Routine Report

For incidents not meeting the urgency criteria as described above, a pdf file of the NS5 report will be generated and sent as an attachment with the next scheduled daily report. Reports will be submitted by the captain, party chief or safety representative as appropriate.

6.0 Investigation Procedures

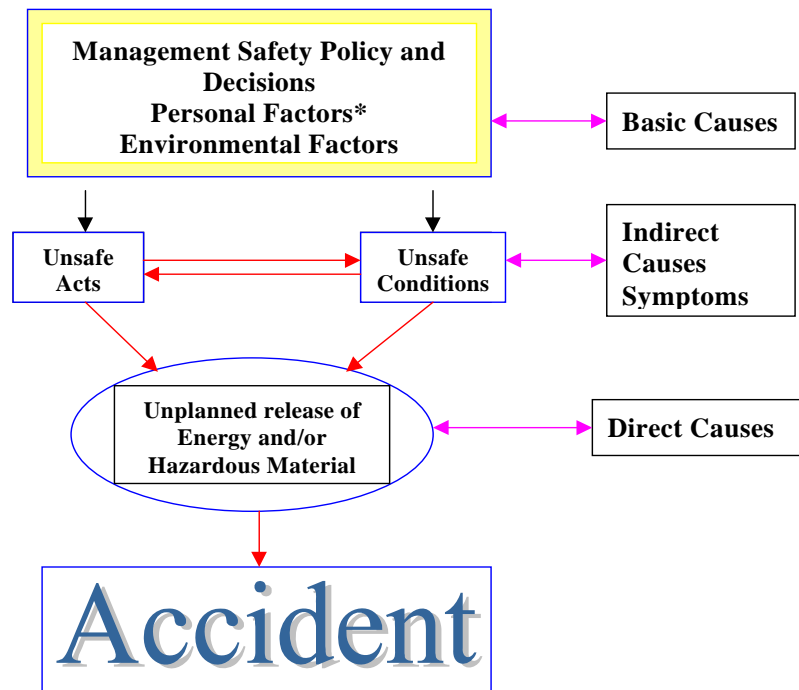
Employees are our most valuable assets and it is our goal to reduce accidents/incidents to the lowest level possible. In order to meet this goal we invest in safety equipment, behavior-based safety and other training programs and accident/incident investigations. Accident/incident investigations enable us to:

- Expose problems in processes/procedures
- Identify and eliminate hazards
- Correct unsafe acts and unsafe conditions
- Reduce economic losses from work-related injuries
- Increase employee awareness
- Identify training needs

Accidents/ incidents should not be investigated to satisfy client KPI requirements or to assign blame. A thorough and objective investigation will permit management to improve procedures and training, reduce future incidents and increase the overall efficiency of our work.

*Accidents/ incidents are typically complex and involve several contributing factors. An accident can be viewed as having 3 levels (basic, indirect, direct). For example, if an accident results when a person is exposed to a hazardous material that cannot be absorbed safely, the hazardous material is the **direct cause** of the accident. The **indirect cause** is usually the result of one or more unsafe acts and/or conditions. Indirect causes are typically related to poor management policies and decisions, personnel issues or environmental factors, which are basic causes (see following figure).*

Generalized Causes of Accidents/ Incidents



*After OSHA Accident Investigation

6.1 Why Accidents are Investigated

Statistics indicate that a few workers account for the majority of workplace accidents. Data suggests that 20% of employees are involved in 80% of the accidents and that many of those are repeat accidents. Factors contributing to these indications include:

- Employees may be high risk takers, in terms of their specific task and behavior
- Injuries that may be the result of repetitive motion tasks
- Failure to allow one injury to completely heal before returning to work
- Some employees may increase their exposure by working harder
- Some employees may be easily distracted, may be fatigued or are disgruntled

Accident investigations help us to identify and mitigate hazards by improving:

- Engineering/design.
- Training/drills.
- Procedures

6.3 How to Conduct an Accident Investigation

The lead investigator assigned by management should be trained in the accident investigation process. However- no one involved with an incident may be appointed to investigate the same incident.

It is important to identify the “root cause of the incident/accident. A **symptom** is a contributing factor to an accident, whereas, the **root cause** is the cause of the accident. To get at the root cause, the following questions may be helpful:

- Was there something unusual or different about the task on that particular day?
- Was there a communication issue?
- Was the employee fatigued?
- Was there a lack of teamwork?
- Was the procedure accurate for the task?
- Did any external factors contribute to the accident?

Accident/incident investigations will include evaluation of:

- Employee conduct and attitude.
- Proper/ improper use of appropriate tools or equipment (including PPE).
- Presence/ absence of safety devices, such as guards.
- Presence or use of unsafe/defective equipment.
- Housekeeping factors- cluttered work area, slippery surfaces, sufficient lighting or obstructed walkways
- Standard Operating Procedures understood and followed
- Sufficient training/ supervision

A thorough investigation should include the following information:

- Photos or description of any injuries or property damage
- Any contributing factors to the accident/incident
- List of internal documents reviewed (JSAs, manuals, training records etc.)

6.4 Investigation Completion and Review

The results of accident investigation are to be documented in the original NS5 report under the Root Cause Investigation tab. Any additional documents or photos may be attached to the NS5 report using the Attachments tab.

The company management that assigned the lead investigator to the incident is responsible for ensuring the incident investigation is completed, recorded in NS5, and that remedial action has been implemented. The TDI-BI president and management will review HSE performance including incident reports and investigations annually.

Lessons learned from depth incident investigations should be forwarded to the fleet in the form of a fleet memo and should be posted in a public space for all to review.