Notice of Change to Controlled Documents #169-178 /28 March 2014

Summary of Changes

NOC#	Ch., Sec., SOP	Summary	Revision#
169	SOP-PRT-007N	PRT-Ballast Water Management Plan	#1
170	SOP-PRT-007O	PRT-Bilge and Ballast Handling Operations	#1
171	SOP-PRT-007P	PRT-Loss of Steering	#1
172	SOP-PRT-007Q	PRT-Equipment to Reset after Power Loss	#1
173	SOP-PRT-007R	PRT-Auxiliary Plant Operations	#1
174	Ch 10 Sec 10	New section added to identify critical equipment for Proteus	#13
175	SOP-GEN-006A	Vanuatu requirements added to Crewing and Safe Manning	#9
176	Chapter 2 Sec 4	Drug and Alcohol policy modified to include Vanuatu regulations	#13
177	SOP-GEN-007L Sec 1	These reporting procedures are for US flagged vessels only.	#12
178	SOP-VAN-2014A	New incident reporting SOP created for Vanuatu vessels	#1

27mar14 - SS SMM TOC web page updated

27 Mar 14 - SS NOC web page updated

27 mar 14 - SS SMM - each section updated

_____ NOC sent to fleet

_____ NOC pdf posted on CM

Approvals	Approvals
Approved for Distribution Date 3/21/14 Initials Print Name Peter Tatro	Approved for Distribution Date 3/28/14 Initials Print Name

The ballast system on the vessel is composed of seven segregated ballast tanks. Each tank has a sounding tube and the piping to the tanks terminated in the lowest part of the tank.

The vessel has the following ballast tanks.

Tank	Capacity (gallons)*
Forepeak Ballast #1	2800
#2 Ballast Center	12667.3
#8 Ballast Port	6516.6
#8 Ballast Starboard	6516.6
#12 Ballast Port	3557.3
#12 Ballast Starboard	3557.3
Afterpeak Ballast #13	3312.7

*total capacity of ballast is gallons at 100% full (*total capacity of ballast is 38,927.8 gal. At 100%)

3.3 Alternate Procedures Under Extraordinary Conditions

If, due to weather, equipment failure, or other extraordinary conditions, the vessel is unable to effect a sea water ballast exchange before entering the EEZ (Exclusive Economic Zone), the Master must employ another approved method of ballast water management, or request permission from the USCG, Captain of the Port (COTP), to exchange the vessels ballast water within an area agreed to by the COTP at the time of the request.

4.0 Responsibilities

The Master has the overall responsibility for ballasting and monitoring the stability of the vessel. The engineering staff, under the supervision of the Chief Engineer, is responsible for the ballast pumping operations. They are required to be familiar with ship's ballast tank and pumping arrangements.

In the unlikely event that the vessel takes on seawater ballast, the Chief Engineer is responsible for ensuring that an entry is made in the bridge log that includes the location, date and time ballast was taken on, the location and date of discharge and the signature of the Master.

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5.0 Reports

The following describes the reporting protocol required for a vessel

Reporting Form. In his absence a person in charge of the vessel designated by the home office shall sign the form.

6.0 Definitions

The following definitions apply when when filling out the ballast reporting form. The ballast reporting form OMB Control Number 1625-0069 can be found on the ship web pages on the SMM forms only page. Instructions on completing and submitting this form are on the ship web pages on the "Ballast Water Transfer" page. (Shannon needs to add blue sections to web pages.)

Vessel Name: Print the name clearly.

IMO Number: Fill in identification number of the vessel used by the International Maritime Organization.

Type: List specific vessel type. Spell out Oceanographic Research Vessel.

GT: Domestic Gross Tons of the vessel.

Arrival Port: Write in the name of your first port of call after entering the U.S. EEZ or St. Lawrence Seaway. No abbreviations please.

Arrival Date: Use the European date format (DDMMYY)

Agent: List agent used for current port.

Last Port: Fill in the last port at which the vessel called immediately before entering the
U.S. EEZ. No abbreviations please.

Country of Last Port: Fill in the last country at which the vessel called immediately before entering the U.S EEZ. No abbreviations please.

Next port: Fill in the port at which the vessel will call immediately after departing the current port. No abbreviations please.

Volume on board: What was the total volume of ballast water on board upon arrival into the waters of U.S. EEZ. Do not count potable water.

Units: Please include volume units (m3, MT, LT, ST) USCG MOC Policy Letter 04-06 states you may use gallons instead of cubic meters or metric tons. The abbreviation "gal" may be used.

Number of tanks in Ballast: Count the number of ballast tanks with

	• Open inlet-outlet valve • Open Seachest Valve to Prime the system • Turn on the Bilge Pump • Open Forward or Aft Bilge Suction Valves • Close the Seachest Valve • Turn Off the Bilge Pump • Close and Secure all Valves ***6.0 Waste Oil Transfer Pump (WOTP) Procedure*** The WOTP is used to transfer used oil from main engines and generators to the dirty oil tank. The WOTP is used to transfer product from dirty oil tank to shore facility for disposal. • Open valve on main engine or generator to be serviced • Open corresponding valve on the waste oil manifold • Open main suction valve on WOTP • Open delivery valve to dirty oil tank • Start the WOTP at the local control. • Check dipstick for level. • Once the transfer is complete shut down WOTP • Close all of the valves opened at that beginning of this evolution

NOC # 171
SOP-PRT-007P Loss of Steering (Proteus)
All

Topic: New vessel specific SOP created for Proteus.

Revision #	Section(s)
Revision #1	***1.0 Introduction*** The purpose of this procedure is to establish general instructions for responding to a loss of steering event onboard the R/V Proteus. This vessel may lose steering control at any time due to a variety of mechanical, electrical or physical problems. Understanding and following established protocols may mitigate the severity of the incident. ***2.0 Responsibility*** The Master has overall responsibility and coordinates all activities in the

NOC # 172
SOP-PRT-007Q Equipment to Re-Set after Power Loss (Proteus) All

Topic: New vessel specific SOP created for Proteus.

Revision #	Section(s)
Revision #1	***1.0 Introduction*** This SOP describes the equipment requiring re-starting and protocols to be followed in the event of vessel power loss. **2.0 Responsibility** The Chief Engineer is responsible for ensuring that all equipment is properly re-started on the vessel following a loss of power. The Chief Engineer will direct the engineering staff to begin re-starting critical equipment first and then all equipment impacted by the loss of power on the vessel. ***3.0 Procedures*** Should the vessel lose all power, power will need to be restored to the main switchboard first. If the vessel suffers a partial power loss, the areas impacted will need to be identified. Once the power has been restored to the main switchboard, the following equipment will need to be re-started and/or checked. Engineers should review start up protocols for all equipment requiring start-up to ensure that equipment is properly brought back on line.

Equipment	Location
MSD Plant	MSD Room
Watermaker	MSD Room
F.O. Centrifuge	Engine Room
ARPA-NavNet	Bridge

- Monitor each tank by sounding he sight glass on day tank
- Once the desired amount of fuel has been transferred, secure the system and shut down the FOTP and get final transfer meter reading

Shut Down

- Press stop button on FOTP
- Secure all valves opened at fuel oil manifold
- Record in appropriate engineering logs and fuel oil logs

3.2 Engine Room Ventilation Fans- Port and Starboard

Start Up

- Ensure that the main breaker in the main switch board is turned on (closed)
- Switch on the local control panel
- On the main switch board

Shut Down

- Switch off on blower control boxes in engine room

3.3 Air Compressors #1 and 2, Drain water from air tanks.

Start Up

- Set local control box switch to on
- Work in auto mode
  - Pressure switches regulate tank pressure

Shut Down

- Set local control box switch to off

3.4 Air Conditioning System

Start Up

3.4.1 Bridge, Scientific Room, Office, Navigation Room, Laboratory, Capt Cabin, Hospital, Meeting Room

Start Up

- Make sure fuel valve is in open position
- Make sure air starting valve is open
- Drain the Air Reservoir and check the air pressure
- Put the handle on starting position
- Push the air starting valve
- Check the pressure of oil & fuel oil

Shut Down

- Push back the governor handle until the engine stops
- Close Air Valves

3.6 Generators

3.6.1 A/E #1 Cat 3406

Start Up

- Check oil level in crankcase
- Check water level of expansion tank
- Make sure fuel valve are in open position
- Put Lube Oil Pressure Stop in Run position
- Put the Governor Handle on Idle Starting Position
- Push the Start Button
- Increase the Engine RPM to 1850
- Check the Voltage on MSB main switch board
- Close Breaker on the MSB

Shut Down

- Open the Breaker on the MSB
- Reduce RPM to 1200
- Pull the L.O. Low Pressure Stop Device until the engine stops

3.6.2 A/E #2 C-9

- Check Crankcase Oil Level
- Check the water level in expansion tank
- Turn the key to starting position until the generator starts and then release
- Increase speed to 1800 RPM
- Check the MSB for Hrz and Voltage
- Close the switch on MSB

Shut Down

each, available for propulsion. Cooling water for the diesel mains is provided by a keel cooling system.

Operation procedures

- At least two mains must be on-line in restricted maneuvering situations.

10.3 Bow Thruster

This vessel has a bow thruster. 3406 Caterpillar

Operation procedures

- The thruster is used for docking maneuvers, but is not used whil keeping station.

10.4 Ship Service System

The system consists of two Caterpillar diesel generator sets (1-C-9 160kw & 1- 3406 175kw, switchboard and distribution system each producing 220V. One diesel generator is capable of carrying the electrical load.

Clean power and hotel power for dockside use is provided by one 75 KW Yanmar diesel generator located on the main deck.

10.5 Steering System

The steering system consists of 2 Sperry Pumps, each one with a Sperry Solenoid.

Operation procedures

- Steering checked prior to entering or departing a port

10.6 Fire pump

This vessel has the fire main pump located in the engine room. The fire main is plumbed into the bilge/ballast piping so that the bilge/ballast pump may be used as a fire pump, drawing water from the sea chest.

Operation procedures

- Suction valves remain in the open position. The pump can be started from the bridge or the engine room.

10.7 Bilge System

TDI-Brooks operates vessels flagged by Vanuatu and by the USA, both of which are part of the International Maritime Organization.

The U.S. Coast Guard is the recognized Administration for the U.S.A. Therefore U.S. flagged vessels are manned in accordance with the Minimum Safe Manning documentation issued by the U.S. Coast Guard.

Vanuatu Maritime Services Limited is a privately held Vanuatu company operating under contract with the Vanuatu government as the maritime administrator. Safe manning criteria are determined by Vanuatu Maritime Services in accordance with the IMO principles of safe manning and stated in a Safe Manning Certificate.

2.0 Regulatory Authority

Each **US flagged** vessel is manned in accordance with the Minimum Safe Manning documentation or the USCG issued Certificate of Inspection (COI). The general regulations for manning of vessels are contained in 46 CFR 15 (Subchapter B, Merchant Marine Officers and Seamen). Regulations concerning certificated lifeboatman, fire patrolmen, and other manning requirements for Oceanographic Research Vessels are contained in Subchapter U. Manning requirements for inspected vessels may be found in Subchapter L. Statues and regulations in the following may apply to meeting the safe manning requirement of each **US flagged** vessel:

- Title 46 (shipping) CFR Part 15 (manning)
- Title 46 (shipping) U.S.C. Subtitle II (manning) Part F
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 as amended in 1995 and 1997 (STCW Convention)

Vanuatu manning requirements are determined by the Laws of the Republic of Vanuatu and certain maritime conventions adopted as law under CAP 155.

3.0 Definitions

- Master-officer having command of ship;
- Officer-member of crew, other than master designated as such;
- Chief Mate-officer next in rank to the master;
- Chief Engineer-the senior engineer officer responsible for the mechanical propulsion, operation, and maintenance of the mechanical and electrical installation of the ship;
- Engineer Officer-officer qualified in accordance with provisions

NOC # 176
Chapter 2 General Company Policies (Proteus)
Sec 4.0 Drug and Alcohol Policy

Topic: Policy modified to include Vanuatu requirements.

Revision #	Section(s)
Revision #13	***4.0 Drug and Alcohol Policy*** It is the policy of this company to maintain a work environment that is safe for employees and conducive to attaining high work standards. As part of this policy, no intoxicating beverages, illegal drugs, paraphernalia or equipment related to illegal drug use are allowed aboard vessels, in offices or other work locations of the company. TDI-Brooks in accordance with U.S. Coast Guard **and the Vanuatu Administration, TDI-Brooks** has a "ZERO TOLERANCE" for possession or use of any illegal drugs. **The policies of these organizations are very similar. In instances where they overlap, the stricter of the two shall apply.** TDI-Brooks International prohibits alcohol/ illegal drug possession and consumption while onboard a vessel at any time. ~~Possession or consumption of alcohol/ illegal drugs on the vessel may result in immediate dismissal.~~ **Any crewman or other TDI-Brooks employee found in possession of alcohol/ illegal drugs is subject to immediate termination** ~~and a fine of $500 shall be taken out of his or her remaining wages.~~ **4.1 Definition** ~~A drug is any substance, natural or synthetic, which when taken into the body, is intended to bring a change in medical, behavioral, or perceptual states. All drugs are of concern to TDI-Brooks because of their effects, however, this policy is primarily concerned with drugs that are "controlled" or illegal. Alcohol is considered to be a controlled drug and is typically a liquid containing ethyl alcohol. Illegal drugs include marijuana and similar substances, and all other drugs not prescribed by a licensed physician for use by the person possessing them.~~ • **Chemical Test-** means a scientifically recognized test, which analyzes an individual's breath, blood, urine, saliva, bodily fluids, or tissues for evidence of dangerous drug or alcohol use. • **Crew member-** means an individual who is on board a vessel acting under the authority of a license, certificate of Registry, or merchant mariner's document issued by the flag state. • **Dangerous Drug-** means a narcotic drug, controlled substance, and marijuana. • **Non-crew member-** scientific personnel, surveyors and all personnel not required to hold an STCW certificate who are working on board the vessel.

~~The Designated Employee Representative of TDI-Brooks is a shore based position. Any reasonable cause testing will be reported to the DER and upper management as soon as possible.~~

~~Per CFR 49 Section 40.23(a), if the results of a field drug test are positive, the employee will be removed from performing safety-sensitive functions for 24 to 48 hrs. Before returning to duty, the employee must retest with negative results. Any potential disciplinary action is at the discretion of management.~~

The HSE Manager is responsible for decisions regarding drug and alcohol testing policies and procedures. On vessels at sea, the Party Chief or the HSE Officer on board may make the decision whether or not to conduct offshore testing for reasonable cause.

The Designated Employee Representative of TDI-Brooks is responsible for managing drug and alcohol testing for all TDI-Brooks employees. Any reasonable cause testing will be reported to the DER and upper management as soon as possible. TDI-Brooks has contracted the services of an off-site Medical Review Officer to review all drug test results.

4.4 If a Drug Test is Positive (NEW SECTION)

Vanuatu Administration's drug and alcohol policy is documented in the following:

- **Vanuatu Maritime Act CAP 131 Sec 137 Drunkenness, Neglect of Duty**
- **Vanuatu Shipping Articles Item 12 Possession of dangerous weapons, narcotics, contraband articles or alcoholic beverages**
- **Vanuatu Maritime Bulletin (VMB) #115 Use of Drug Testing Consortiums for Mandatory Testing**

The Vanuatu Administration clearly states in VMB #115 Section 2.5 that if an employee, "does not hold a license, certificate of registry or merchant mariner's document fails a chemical test for dangerous drugs, the individual will be terminated… (and) shall not be re-employable for a period of five (5) years from the test failure. The VMSL may consider the individual eligible for re-employment prior to the five (5) year period if he successfully completes a formal drug rehabilitation program to the satisfaction of the Owners/ operators management."

If the results of a drug test for a crew member are verified positive, the employee will be immediately removed from performing safety-sensitive functions and may not return to duty without completing the return to duty process.

Return to Duty:

- **USA- 49 CFR Part 40.23(a) and 40.305**
- **Vanuatu- VMB #115 Sec 2.5**

	4.7 Acknowledgement and Release Form **All employees who work offshore ~~and all new employees hired after September 1, 2012~~ are required to sign** a copy of the Acknowledgement and Release Form regarding the Drug and Alcohol Policy as a condition of employment. **4.8 Resources for Rehabilitation** At request of the employee, information on resources may be provided for the recovery of drug and alcohol abuse. Please contact the Quality Management Representative if you are interested in these resources.

NOC # 177
SOP-GEN-007L Incident Reporting and Investigation
Section 1.0 Introduction

Topic: This SOP for US flagged vessels only.

Revision #	Section(s)
Revision #12	***1.0 Introduction*** The document provides guidelines for reporting and investigating incidents **on US flagged vessels. Vanuatu flagged vessels will follow procedures in SOP-VAN-2014A.** 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.

NOC # 178
SOP-VAN-2014A Incident Reporting and Investigation (Vanuatu) All

Topic: New SOP created to address incident reporting for Vanuatu flagged vessels.

Revision #	Section(s)
Revision #1	Complete SOP follows:

1.0 Introduction

The document provides guidelines for reporting and investigating incidents on **Vanuatu flagged vessels**. US flagged vessels will follow procedures in SOP-GEN-007L. 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 incident investigation.

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

2.0 Responsibility

It is the responsibility of the vessel crew to report all incidents, illnesses or injuries to the Master of the vessel. It is the responsibility of the technical/ science crew to report all incidents, illnesses or injuries to the Party Chief. All these events are to be reported as soon as possible.

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 a qualified 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

Vanuatu Maritime Act Ch 10 Sec 97—Marine Casualties
Vanuatu Regulations Ch 7 Sec 34—Marine Casualties- Reporting

Form D-1 Report of Vessel Casualty
Form D-2 Report of Personal Injury or Loss of Life

4.0 Definitions

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 to management immediately by the most expeditious means** and **must be followed up by an NS5 generated report as soon as practical to dpa@tdi-bi.com.**

Incidents that meet the criteria of Vanuatu Maritime Act Chapter 10 Section 97 or Vanuatu Regulations Ch 7 Sec 34 require that the master file a form D-1 or D-2 report immediately with the Vanuatu Deputy Commissioner of Maritime Affairs in accordance with regulations. **A failure to file the report will result in a fine for both the master and the vessel operator.**

Vanuatu Maritime Act Chapter 10 Sec 97

MARINE CASUALTIES

97. In the event of any casualty involving a Vanuatu vessel where there is a loss of life or loss of or damage to property estimated to be in excess of 50,000 dollars, the master shall immediately forward a report thereon to the Commissioner or Deputy Commissioner in accordance with such regulations as the Minister on the recommendation of the Commissioner may make from time to time. Where there is a failure to execute and file a report as required hereunder, the master and vessel shall each be liable to a fine of 250 dollars upon notice from the Commissioner.

5.2 Reporting a Marine Casualty, Personal Injury or Loss of Life

If an incident meets any of the following criteria, **D-1 or D-2 form** must be completed and sent to **dpa@tdi-bi.com** and filed by e-mail to the Deputy Commissioner of Maritime Affairs at **email@vanuatuships.com** and 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. These forms are located on the ship web pages on the **SMM Forms Only page**.

VANUATU MARITIME REGULATIONS

CHAPTER 7 MARINE CASUALTIES AND OFFENCES AND MARINE INVESTIGATIONS

REPORTING

34. (1) The owner or Master of a vessel involved in a marine casualty shall immediately forward a report thereon, signed by the Master or highest available officer or ship's representative, to the Commissioner or a Deputy Commissioner whenever the casualty results in any of the following:

(a) Actual physical damage to property in excess of $50,000;

Not all incidents will require investigation. Management will review fleet incidents regularly and decide which incidents will require an investigation.

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

6.2 How to Conduct an Incident Investigation

The lead investigator assigned by management should be trained in the incident investigation process and given access to the tools and systems required to conduct the investigation. However- no one involved with an incident may be appointed to investigate the same incident. The investigation process will be recorded in the **Incident Investigation Report** form, which may be found on the **SMM Forms Only page** of the ship web pages.

It is important to identify the "root cause of the incident. A **symptom** is a contributing factor to an incident, whereas, the **root cause** is the cause of the incident. 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?

Incident investigations will include evaluation of:

- Employee conduct and attitude.