

























































3.3. COMMUNICATIONS

**SAMPLE**

SAMPLE

3.4. OPERATIONAL PREPARATIONS BEFORE MANOEUVRING

SAMPLE

3.5. MANOEUVRING AND MOORING

SAMPLE

SAMPLE

SAMPLE

SAMPLE



SAMPLE

SAMPLE

SAMPLE

SAMPLE

SAMPLE

3.6. PROCEDURES ALONGSIDE

SAMPLE

SAMPLE

SAMPLE



SAMPLE

SAMPLE

3.7. UNMOORING

SAMPLE

SAMPLE

3.8. EQUIPMENT

SAMPLE

SAMPLE

SAMPLE

SAMPLE



SAMPLE

SAMPLE

SAMPLE

SAMPLE

SAMPLE

## 4. EMERGENCY PREPAREDNESS

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This Section outlines the necessary precautionary measures in place required to ensure the safety of the ship and its crew, as well as the protection of the environment, in case of an emergency situation during STS operations. This Section should be read in conjunction with relevant Safety Management System procedures.

### 4.1. CONTINGENCY PLANNING

### 4.2. EMERGENCY SIGNAL

### 4.3. EMERGENCY SITUATIONS

4.4. ADVICE ON SOME EMERGENCIES

SAMPLE

#### 4.5. STATE OF READINESS FOR AN EMERGENCY

#### 4.6. EMERGENCY DUTIES

In case of accidents that may arise during the transfer of oil, particularly in the case of spillages of oil, the guidance included in the ship's SOPEP should be followed. However, the following table containing emergency duties assigned to designated members of the crew may be used as general guidance:

**Master**

**Chief Officer**      **Acting as a "SPILL RESPONSE OFFICER"**



**Chief  
Engineer**

**2<sup>nd</sup> - 3<sup>rd</sup>  
Engineer**

**Deck  
Officer on  
duty:**

**Engineer  
Officer on  
duty:**

**Officer  
holding  
GO  
certificate**

**Ratings  
on duty**

**SAMPLE**

## 5. RECORDS

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Records relevant to the STS operations comprise the following:

1. Safety Checklists (see Section 5.1)
2. Audit Checklist (see Section 5.2 – where applicable)
3. Notification Forms (see Section 5.3)
4. Risk Assessment Form (see Section 5.4)
5. Records as required by Chapters 3 and 4 of the revised Annex I of MARPOL 73/78 (resolution MEPC.117(52)) (Requirements for recording bunkering and oil cargo transfer operations in the Oil Record Book)
6. Record of STS Operations (see Section 5.5)

The above records shall be retained onboard for a minimum period of three (3) years and shall be readily available for inspection by duly authorized Officers of the Flag State.

### 5.1. SAFETY CHECKLISTS

Safety Checklists No. 1-5 included in this Section are provided in chronological order and should be completed at the appropriate time and verified by the person in overall advisory control for each STS operation. Checklist No. 6 should be completed in case the oil transfer operation takes place in ice covered waters.

SHIP-TO-SHIP TRANSFER <b>CHECKLIST No.1 – PRE-FIXTURE INFORMATION</b> (BETWEEN SHIP OPERATOR / CHARTERER AND ORGANIZER)			
Ship's Name:		IMO No.	
Ship Operator:	Ship Charterer:	STS Organizer:	
Preferred Contact No. (e.g. INMARSAT)	Ship Operator's Confirmation	Remarks	
1. What is the LOA? What is the parallel body length at loaded and ballast draughts?			
2. Will the transfer be conducted underway and, if so, can the ship maintain about five knots for a minimum of two hours?			
3. Is the ship's manifold arrangement in accordance with OCIMF Recommendations for Oil Tanker Manifolds and Associated Equipment?			
4. Is the ship's lifting equipment in accordance with OCIMF Recommendations for Oil Tanker Manifolds and Associated Equipment?			
5. What is the maximum and minimum expected height of the cargo manifold from the waterline during the transfer?			
6. Sufficient manpower will be provided for all stages of the operation?			
7. Are enclosed fairleads and mooring bits in accordance with OCIMF Mooring Equipment Guidelines and are they of a sufficient number?			
8. Can the ship supplying the moorings provide all lines on winch drums?			
9. If moorings are wires or high modulus synthetic fibre ropes, are they fitted with synthetic tails at least eleven meters in length?			
10. Full-sized mooring bits of sufficient strength are suitably located near all enclosed fairleads to receive mooring ropes eyes?			
11. Both sides of the ship are clear of any overhanging projections including bridge wings?			
12. The transfer area has been agreed?			
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)			
Name:			
Rank:			
Signature:		Date:	

<b>SHIP-TO-SHIP TRANSFER</b>			
<b>CHECKLIST No.2 – BEFORE OPERATIONS COMMENCE</b>			
Discharging Ship's Name:			
Receiving Ship's Name:			
Date of Transfer:			
	Discharging Ship Checked	Receiving Ship Checked	Remarks
1. The two ships have been advised by shipowners that Checklist No.1 has been completed satisfactorily?			
2. Personnel comply with rest requirements of ILO 180, STCW or national regulations as appropriate?			
3. Radio communications are established?			
4. Language of operations has been agreed?			
5. The rendezvous position off the transfer area is agreed?			
6. Berthing and mooring procedures are agreed, including fender positions and number/type of ropes to be provided by each ship?			
7. The system and method of electrical insulation between ships has been agreed?			
8. The ships are upright and at a suitable trim without any overhanging projections?			
9. Engines, steering gear and navigational equipment have been tested and found in good order?			
10. Ship's boilers and tubes have been cleared of soot and it is understood that during STS operations, tubes must not be blown?			
11. Engineers have been briefed on engine speed (and speed adjustment) requirements?			
12. Weather forecasts have been obtained for the transfer area?			
13. Hose lifting equipment is suitable and ready for use?			
14. Cargo transfer hoses are properly tested and certified and in apparent good condition?			
15. Fenders and associated equipment are visually in apparent good order?			
16. The crew has been briefed on the procedure?			
17. The contingency plan is agreed?			
18. Local authorities have been advised about the operation?			
19. A navigational warning has been broadcast?			
20. The other ship has been advised that Check-list 2 is satisfactorily completed?			
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)			
Name:			
Rank:			
Signature:		Date:	

SHIP-TO-SHIP TRANSFER <b>CHECKLIST No.3 – BEFORE RUN-IN AND MOORING</b>			
Discharging Ship's Name:			
Receiving Ship's Name:			
Date of Transfer:			
	Discharging Ship Checked	Receiving Ship Checked	Remarks
1. Checklist No.2 has been satisfactorily completed?			
2. Primary fenders are floating in their proper place? Fender pennants are in order?			
3. Secondary fenders are in place, if required?			
4. Over side protrusions on side of berthing are retracted?			
5. A proficient helmsman is at the wheel?			
6. Cargo manifold connections are ready and marked?			
7. Course and speed information has been exchanged and is understood?			
8. Ship's speed adjustment is controlled by changes to revolutions and/or propeller pitch?			
9. Navigational signals are displayed?			
10. Adequate lighting is available?			
11. Power is on winches and windlass and they are in good order?			
12. Rope messengers, rope stoppers and heaving lines are ready for use?			
13. All mooring lines are ready?			
14. All mooring personnel are in position?			
15. Communications are established with mooring personnel?			
16. The anchor on opposite side to transfer is ready for dropping?			
17. The other ship has been advised that Checklist No.3 is satisfactorily completed?			
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)			
Name:			
Rank:			
Signature:		Date:	

SHIP-TO-SHIP TRANSFER <b>CHECKLIST No.4 – BEFORE CARGO TRANSFER</b>			
Discharging Ship's Name:			
Receiving Ship's Name:			
Date of Transfer:			
	Discharging Ship Checked	Receiving Ship Checked	Remarks
1. The ISGOTT Ship/Shore Safety Checklist has been satisfactorily completed?			
2. Procedures for transfer of personnel have been agreed?			
3. The gangway (if used) is in good position and well secured?			
4. An inter-ship communication system is agreed?			
5. Emergency signals and shutdown procedures are agreed?			
6. An engine room watch will be maintained throughout transfer and the main engine ready for immediate use?			
7. Fire axes or suitable cutting equipment is in position at fore and aft mooring stations?			
8. A bridge watch and/or an anchor watch are established?			
9. Officers in charge of the cargo transfer on both ships are identified and posted?			
10. A deck watch is established to pay particular attention to moorings, fenders, hoses, manifold observation and cargo pump controls?			
11. The initial cargo transfer rate is agreed with other ship?			
12. The maximum cargo transfer rates agreed with the other ship?			
13. The topping-off rate is agreed with other ship?			
14. Cargo hoses are well supported?			
15. Tools required for rapid disconnection are located at the cargo manifold?			
16. Details of the previous cargo of the receiving ship have been given to the discharging ship?			
17. The other ship has been advised that Checklist No.4 is satisfactorily completed?			
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)			
Name:			
Rank:			
Signature:			Date:

<b>SHIP-TO-SHIP TRANSFER CHECKLIST No.5 – BEFORE UNMOORING</b>			
Discharging Ship's Name:			
Receiving Ship's Name:			
Date of Transfer:			
	Discharging Ship Checked	Receiving Ship Checked	Remarks
1. Cargo hoses are properly drained prior to hose disconnection?			
2. Cargo hoses or manifolds are blanked?			
3. The transfer side of the ship is clear of obstructions (including hose lifting equipment)?			
4. Secondary fenders are correctly positioned and secured for departure?			
5. The method of unberthing and of letting go moorings has been agreed with the other ship?			
6. Fenders, including fender pennants, are in good order?			
7. Power is on winches and windlass?			
8. There are rope messengers and rope stoppers at all mooring stations?			
9. The crew is standing by at their mooring stations?			
10. Communications are established with mooring personnel and with the other ship?			
11. Shipping traffic in the area has been checked?			
12. Main engine(s) and steering gear have been tested and are in a state of readiness for departure?			
13. Mooring personnel have been instructed to let go only as requested by the manoeuvring ship?			
14. Navigational warnings have been cancelled (when clear of other ship)?			
15. The other ship has been advised that Checklist No.5 is satisfactorily completed?			
<b>FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)</b>			
Name:			
Rank:			
Signature:		Date:	

SHIP-TO-SHIP TRANSFER			
<b>CHECKLIST No.6 – OPERATIONS IN ICE COVERED WATERS</b>			
Discharging Ship's Name:			
Receiving Ship's Name:			
Date of Transfer:			
	Discharging Ship Checked	Receiving Ship Checked	Remarks
1. <b>Valves:</b> Overboard discharge valves closed? Valves not in use secured? Transfer valves operate through full range? Transfer pipelines connections checked? Double checked arrangements with crew? Scuppers and freeing ports plugged?			
2. <b>Containment and absorbents:</b> Permanent containment? Portable containment? Absorbent material?			
3. <b>Accommodation:</b> Doors, deadlights / shutters / ports / vents closed? Air conditioning re-circulations mode? Accommodation ventilation shut?			
4. <b>Navigation bridge:</b> Hoist appropriate signals? Announcement of impending transfer?			
5. <b>Restricted activities:</b> Hot work? Smoking (except designated areas)? Matches and lighters? Portable electric lamps? Equipment on extension cords?			
6. <b>Unless intrinsically safe, restricted use of:</b> Portable R/T sets. Lamps. Hand lamps. Flashlights. Other electrical devices. Portable domestic radio. Photographic flash equipment. Portable electronic calculator. Tape recorders. Wireless telephone. Other battery powered equipment. Radiating HF radios. Satcom and positioning systems.			
7. <b>Engine Room:</b> Engine exhaust monitored for sparks? Spark arrestor functioning? Boiler soot blowing not permitted? Ground faults traced and isolated? Machinery spaces ventilation shut?			
8. <b>Emergency procedures:</b> Crew should be versed and rehearsed in Emergency procedures & Fire fighting equipment.			
9. <b>Routine check of moorings and fenders</b>			
10. <b>Safety equipment:</b> Lifebuoys. Approved lifejackets/PFD. Appropriate cold weather clothing. Flashlights. First aid kit. Reflective material on personnel at night.			



SHIP-TO-SHIP TRANSFER CHECKLIST No.6 – OPERATIONS IN ICE COVERED WATERS (cont'd)			
11. <b>Fire fighting equipment:</b> Fire extinguishers in place? Fire hose rolled out on deck? Fire fighting systems, main and emergency pumps on standby?			
12. <b>Lighting:</b> Adequate lighting vessel & shore facilities? Work boat equipped with spotlight?			
13. <b>Transfer hoses:</b> Valid hose certificate? Indelibly marked: - "For Oil"? Date of manufacture? Bursting pressure? Working pressure? Date of last test? Pressure applied under test?			
14. <b>Examine:</b> Condition of "O" ring/joints. Hose to coupling clamps. Complete hose system. Hose strain relief system for floating hose.			
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)			
Name:			
Rank:			
Signature:		Date:	

## 5.2. AUDIT CHECKLIST

The Audit Checklist included in this Section is to be completed by the person in overall advisory control or the Company for each STS operation in case an STS Superintendent is used.

SAMPLE

SHIP-TO-SHIP TRANSFER CHECKLIST No.7 – STS SUPERINTENDENT AUDIT	
Company Name:	
Address:	
Tel.:	
Fax:	
E-mail:	
Primary Contact:	
	Remarks / Answer
STS Superintendent Company	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	

SHIP-TO-SHIP TRANSFER CHECKLIST No.7 – STS SUPERINTENDENT AUDIT (cont'd)	
	Remarks / Answer
13.	
14.	
15.	
16.	
17.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
1.	
2.	

SHIP-TO-SHIP TRANSFER CHECKLIST No.7 – STS SUPERINTENDENT AUDIT (cont'd)	
	Remarks / Answer
3.	
4.	
5.	
6.	
7.	
8.	
FOR THE COMPANY / SHIP (Delete as appropriate)	
Name:	
Rank:	
Signature:	Date:

### 5.3. NOTIFICATION FORM

The Notification Form included in this Section is to be completed by the person in overall advisory control for each STS operation conducted within the territorial sea, or the exclusive economic zone of a country, not less than 48 hours in advance of the scheduled STS operations. Where, in an exceptional case, all of the information required to be provided is not available not less than 48 hours in advance, the ship discharging the oil cargo shall notify the Party to the Convention, not less than 48 hours in advance that an STS operation will occur and the information specified above shall be provided to the Party at the earliest opportunity.

Once the initial report for any Estimated Time of Arrival (ETA) has been made, it should, if possible, be updated when a variance of more than six hours is expected from the time given in the latest report. Each time stated in a report required by this section must be given in Greenwich Mean Time (GMT).

SAMPLE

<b>SHIP-TO-SHIP TRANSFER NOTIFICATION FORM</b>	
Ship's Name:	IMO No.:
Flag:	Call Sign:
Ship Operator:	
Contact Details:	
Ship Charterer:	
STS Person in overall advisory control:	
Contact Details:	
STS Service Provider (if applicable):	
Contact Details:	
Ship's estimated time of arrival (ETA):	
Date at the commencement of STS operations:	
Time at the commencement of STS operations:	
Geographical location at the commencement of STS operations:	
STS operations are to be conducted: <input type="checkbox"/> Underway <input type="checkbox"/> At anchor	
Identity of product and quantity to be transferred:	
a. Product:	Quantity:
b. Product:	Quantity:
Planned duration of the STS operations:	
Remarks:	
The undersigned declares that the vessel has onboard an STS Operations Plan in accordance with the requirements of Annex I of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), as amended.	
FOR DISCHARGING SHIP / RECEIVING SHIP (Delete as appropriate)	
Name:	
Rank:	
Signature:	Date:

5.4. SAMPLE RISK ASSESSMENT FORM

<b>ASSESSMENT DATE</b> _____	<b>RISK ASSESSMENT (RA) SHORT NAME</b> <b>STS OPERATION</b>
<small>DD/MM/YY</small>	<b>RA REFERENCE NO.</b> _____

**SHIP GENERATED RISK ASSESSMENT**

VESSEL'S NAME \_\_\_\_\_ MASTER \_\_\_\_\_ DATE \_\_\_\_\_

NAME / SIGNATURE (DD/MM/YY)

**SHORE GENERATED RISK ASSESSMENT**

DEPARTMENT \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

NAME / SIGNATURE (DD/MM/YY)

<b>STEP 1</b>	<b>PROBLEM DEFINITION AND SYSTEM DESCRIPTION</b> - Define the vessel and/or the activity whose risk is to be studied

<b>STEP 2</b>	<b>HAZARD / INCIDENT IDENTIFICATION (HAZID) - DEVELOPMENT OF HYPOTHETICAL SCENARIOS</b>

<b>STEP 3</b>	<b>EXISTING CONTROL MEASURES</b>

<b>STEP 4</b>	<b>RISK ESTIMATION / EVALUATION OF PROBABILITY AND CONSEQUENCE UNDER EXISTING CONTROL MEASURES</b>			
PROBABILITY CATEGORY (Based on the existing control measures)	3	CONSEQUENCE CATEGORY (Based on the existing control measures)	4	<b>RISK SCORE</b>
INITIAL PROBABILITY (FREQ'CY) ASSESSMENT: <small>Table 1 score</small>	<b>X</b> <small>multiply</small>	INITIAL CONSEQUENCE CATEGORY ASSESSMENT: <small>Table 2 score</small>	<b>=</b> <small>equal</small>	<b>12</b>

<b>STEP 5</b>	<b>LEVEL OF RISK BASED ON EXISTING CONTROL MEASURES</b>	<b>1-3 LOW</b> <input type="checkbox"/>	<b>4-9 MEDIUM</b> <input type="checkbox"/>	<b>&gt;9 HIGH</b> <input checked="" type="checkbox"/>
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<b>STEP 6</b>		<b>ADDITIONAL / NEW CONTROL MEASURES (Prevention / mitigation or alternative (control) measures)</b>	
<b>DESCRIPTION OF ADDITIONAL CONTROL MEASURES OR ALTERNATIVE MEASURES</b>	<b>DEPT. / PERSON IN CHARGE</b>	<b>TARGET DATE (COMPLETION)</b>	<b>ACTION DATE</b>
	Masters / Person in overall advisory control (POAC)	Prior to / during the STS mooring operation	
	Operator	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master	Prior to / during the STS mooring operation	
	Master / POAC	Prior to the STS mooring operation	
	Master	Prior to the STS mooring operation	
	Master	Prior to the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS	

<b>STEP 6</b>		<b>ADDITIONAL / NEW CONTROL MEASURES (Prevention / mitigation or alternative (control) measures)</b>	
<b>DESCRIPTION OF ADDITIONAL CONTROL MEASURES OR ALTERNATIVE MEASURES</b>	<b>DEPT. / PERSON IN CHARGE</b>	<b>TARGET DATE (COMPLETION)</b>	<b>ACTION DATE</b>
		mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master / POAC	24 hours prior to the STS mooring operation	
	Operator	Prior to the STS mooring operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Chief Officer	Prior to / upon receipt of hoses	
	Chief Officer	Prior to / upon receipt of hoses	
	Chief Officer	Prior to / upon receipt of hoses	
	Chief Officer, OOW	Prior to arriving at the STS area	
	Master / Chief Engineer / Chief Officer	Prior to STS operation	

<b>STEP 6</b>	<b>ADDITIONAL / NEW CONTROL MEASURES (Prevention / mitigation or alternative (control) measures)</b>		
<b>DESCRIPTION OF ADDITIONAL CONTROL MEASURES OR ALTERNATIVE MEASURES</b>	<b>DEPT. / PERSON IN CHARGE</b>	<b>TARGET DATE (COMPLETION)</b>	<b>ACTION DATE</b>
	Master / Chief Engineer	During the STS operation	
	Master	Prior to STS operation	
	Master / POAC	Prior to / during the STS mooring operation	
	Master	During the STS operation	
	Master	Prior to the STS mooring operation	
	Master / POAC	Prior to the STS mooring operation	
	Master, OOW	Prior to / during the STS operation	
	Master	Prior to / during the STS operation	
	Master	Prior to STS berthing / unberthing	
	Master / POAC	Prior to the STS operation	
	Master / POAC	Prior to the STS operation	
	Master / POAC	Prior to the STS operation	
	Master / Chief Engineer	Prior to the STS operation	
	Chief Engineer	Prior to the STS operation	
	Master	When two vessels are alongside	
	Master	During the STS operation	
	Chief Officer	During the cargo transfer	

<b>STEP 6</b> ADDITIONAL / NEW CONTROL MEASURES (Prevention / mitigation or alternative (control) measures)			
DESCRIPTION OF ADDITIONAL CONTROL MEASURES OR ALTERNATIVE MEASURES	DEPT. / PERSON IN CHARGE	TARGET DATE (COMPLETION)	ACTION DATE
	Master/ Ch.Officer	During the cargo transfer	
	Master / Ch.Officer	During the cargo transfer	
	Master	Prior to / during the STS operation	
	Master / Ch.Officer	During planning of the STS operation	
	Master / Ch.Officer	Prior to / during the STS operation	
	Master / Ch.Officer	Upon berthing / during the STS operation	
	Master / POAC	Prior to / during the STS mooring operation	

Re-evaluate and re-define the consequence and frequency categories (see Tables 1 & 2 in Step 3) after implementation of PROPOSED ADDITIONAL CONTROL MEASURES

PROBABILITY CATEGORY (After prevention and mitigation measures)		3	CONSEQUENCE CATEGORY (After prevention and mitigation measures)		3	RISK SCORE
PROBABILITY (FREQUENCY) ASSESSMENT:	Table 1 score	X multiply	CONSEQUENCE CATEGORY ASSESSMENT:	Table 2 score	= equal	9

LEVEL OF RISK BASED ON ADDITIONAL (NEW) CONTROL MEASURES

1 – 3 LOW	<input type="checkbox"/>	4 – 9 MEDIUM	<input checked="" type="checkbox"/>	>9 HIGH	<input type="checkbox"/>
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IF ADDITIONAL CONTROL MEASURES DO NOT REDUCE THE RISK IN ACCEPTABLE LEVEL, THE ASSESSMENT MUST BE REPEATED BY ADDING FURTHER CONTROL MEASURES. IN THIS CASE OFFICE ASSISTANCE MUST BE REQUESTED AND THE ACTIVITY UNDER ASSESSMENT SHOULD NOT BE CARRIED OUT UNTIL OFFICE INSTRUCTIONS AND/OR ASSISTANCE IS PROVIDED.

<b>STEP 7</b> FOLLOW-UP			
ADDITIONAL (NEW) / ALTERNATIVE (CONTROL) MEASURES IMPLEMENTATION (as described in STEP 6)	TARGET DATE	COMPLETION DATE (1)	PERSON IN CHARGE FOR VERIFICATION OF NEW CONTROL MEASURES <i>NAME / TITLE / SIGNATURE</i>
	Prior to / during the STS mooring operation		Masters / Person in overall advisory control (POAC)

<b>STEP 7 FOLLOW-UP</b>			
<b>ADDITIONAL (NEW) / ALTERNATIVE (CONTROL) MEASURES IMPLEMENTATION (as described in STEP 6)</b>	<b>TARGET DATE</b>	<b>COMPLETION DATE (1)</b>	<b>PERSON IN CHARGE FOR VERIFICATION OF NEW CONTROL MEASURES NAME / TITLE / SIGNATURE</b>
	Prior to / during the STS mooring operation		Operator
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master
	Prior to the STS mooring operation		Master / POAC
	Prior to the STS mooring operation		Master
	Prior to the STS mooring operation		Master
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master

<b>STEP 7 FOLLOW-UP</b>			
<b>ADDITIONAL (NEW) / ALTERNATIVE (CONTROL) MEASURES IMPLEMENTATION (as described in STEP 6)</b>	<b>TARGET DATE</b>	<b>COMPLETION DATE (1)</b>	<b>PERSON IN CHARGE FOR VERIFICATION OF NEW CONTROL MEASURES NAME / TITLE / SIGNATURE</b>
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / during the STS mooring operation		Master / POAC
	24 hours prior to the STS mooring operation		Master / POAC
	Prior to the STS mooring operation		Operator
	Prior to / during the STS mooring operation		Master / POAC
	Prior to / upon receipt of hoses		Chief Officer

<b>STEP 7</b>		<b>FOLLOW-UP</b>		
<b>ADDITIONAL (NEW) / ALTERNATIVE (CONTROL) MEASURES IMPLEMENTATION (as described in STEP 6)</b>	<b>TARGET DATE</b>	<b>COMPLETION DATE (1)</b>	<b>PERSON IN CHARGE FOR VERIFICATION OF NEW CONTROL MEASURES</b> <i>NAME / TITLE / SIGNATURE</i>	
	Prior to / upon receipt of hoses		Chief Officer	
	Prior to / upon receipt of hoses		Chief Officer	
	Prior to arriving at the STS area		Chief Officer, OOW	
	Prior to STS operation		Master / Chief Engineer / Chief Officer	
	During the STS operation		Master / Chief Engineer	
	Prior to STS operation		Master	
	Prior to / during the STS mooring operation		Master / POAC	
	During the STS operation		Master	
	Prior to the STS mooring operation		Master	
	Prior to the STS mooring operation		Master / POAC	
	Prior to / during the STS operation		Master, OOW	
	Prior to / during the STS operation		Master	
	Prior to STS berthing / unberthing		Master	
	Prior to the STS operation		Master / POAC	

<b>STEP 7 FOLLOW-UP</b>			
<b>ADDITIONAL (NEW) / ALTERNATIVE (CONTROL) MEASURES IMPLEMENTATION (as described in STEP 6)</b>	<b>TARGET DATE</b>	<b>COMPLETION DATE <sup>(1)</sup></b>	<b>PERSON IN CHARGE FOR VERIFICATION OF NEW CONTROL MEASURES NAME / TITLE / SIGNATURE</b>
	Prior to the STS operation		Master / POAC
	Prior to the STS operation		Master / POAC
	Prior to the STS operation		Master / Chief Engineer
	Prior to the STS operation		Chief Engineer
	When two vessels are alongside		Master
	During the STS operation		Master
	During the cargo transfer		Chief Officer
	During the cargo transfer		Master/ Ch.Officer
	During the cargo transfer		Master / Ch.Officer
	Prior to / during the STS operation		Master
	During planning of the STS operation		Master / Ch.Officer
	Prior to / during the STS operation		Master / Ch.Officer
	Upon berthing / during the STS operation		Master / Ch.Officer
	Prior to / during the STS mooring operation		Master / POAC

<sup>(1)</sup> **COMPLETION DATE:** Declares the date that the implementation of additional control measures has been completed. This date must not be later than **Target Date**. If for any reason Completion Date will be later than Target Date, the RA team should inform Management in advance for immediate action/assistance in order to reach the Target date or to decide for an extension, if possible, after re-assessment.



ASSESSOR (NAME): \_\_\_\_\_  
(TITLE/RANK): \_\_\_\_\_ SIGNATURE \_\_\_\_\_

LEGAL REVIEW REQUIRED?  YES  NO  
RISK ASSESSMENT RESULTS TO BE SHARED WITHIN THE FLEET  YES  NO  
IS RE-ASSESSMENT REQUIRED?  YES  NO

DPT. HEAD / MASTER (NAME): \_\_\_\_\_  
(TITLE/RANK): \_\_\_\_\_ SIGNATURE \_\_\_\_\_

SAMPLE

### 5.5. RECORD OF STS OPERATIONS

To be retained onboard for at least three years

Voyage no:	Location	Other vessel	Oil Type	Remarks

- Checklists and other relevant records for each STS Operation attached
- Abstract from Loading / Discharge computer from each STS Operation attached for reference

**6. INFORMATION**

6.1. LIST OF SHIP INTEREST CONTACTS

Owners -  
Operators: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Administration: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Classification \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

SHIP MANAGEMENT			
POSITION	NAME	TELEPHONE	MOBILE
General Manager			
Operations Manager - Team Coordinator			
Deputy Operations Manager			
Technical Dept. Manager			
Deputy Technical Manager			
Senior Supt. Engineer			
Crew Dept. Manager			
Deputy Crew Dept. Manager			
DPA			
Deputy DPA			

Note: For Coastal State Contacts, refer to MSC-MEPC.6/Circ.X (published each year in December by IMO), which is to be kept updated by shipboard personnel.

6.2. EXAMPLE STS MOORING EQUIPMENT MAP / COMPATIBILITY DATA SHEET AND GUIDELINES FOR DATA ENTRY

6.2.1. Particulars

Vessel :		IMO No :		
<b>Tonnage Band</b>	VLCC		<b>Summer Deadweight</b>	306 497 Metric Tonnes
<b>Length Overall</b>	334.071	Metres	<b>Summer Displacement</b>	348 818 Metric Tonnes
<b>Length B.P</b>	320.000	Metres	<b>Lightship</b>	<b>42 321</b> Metric Tonnes
<b>Extreme Breadth</b>	58.040	Metres	<b>Summer Draft</b>	22.524 Metres
<b>Moulded Breadth</b>	58.00	Metres	<b>Freeboard @ Summer dwt</b>	6.962 Metres
<b>Moulded Depth</b>	31.250	Metres	<b>Normal Ballast Condition Deadweight</b>	109 820 Metric Tonnes
<b>Keel to Masthead</b>	67.80	Metres	<b>Normal Ballast Condition Displacement</b>	152 240 Metric Tonnes
<b>Bow to mid-point manifold (B.C.M)</b>	270.010	Metres	<b>Lightship (Check)</b>	<b>42 420</b> Metric Tonnes
<b>Stern to mid-point manifold (S.C.M)</b>	164.061	Metres	<b>FWA</b>	504 mm
<b>Lightship P.B.L</b>	111.00	Metres	<b>TPC</b>	173 Tonnes/cm
<b>Lightship Forward P.B.L</b>	84.00	Metres	<b>Ballast Draft Aft</b>	12.42 Metres
<b>Lightship Aft P.B.L</b>	27.00	Metres	<b>Ballast Draft Forward</b>	9.10 Metres
<b>Normal Ballast P.B.L</b>	152.00	Metres	<b>Ballast Draft Mean</b>	<b>10.76</b> Metres
<b>Normal Ballast Forward P.B.L</b>	94.50	Metres	<b>Maximum Air-draft Normal Ballast condition</b>	55.38 Metres
<b>Normal Ballast Aft P.B.L</b>	57.50	Metres	<b>No of Manifolds Per Side</b>	3
<b>P.B.L at Summer Dwt</b>	173.90	Metres	<b>Distance manifolds to ship's rail</b>	4275 mm
<b>Summer dwt Forward P.B.L</b>	94.50	Metres	<b>Cargo Manifold Nominal Bore</b>	500 mm
<b>Summer dwt Aft P.B.L</b>	79.40	Metres	<b>Height of manifold above W/L at summer dwt</b>	10.88 Metres
<b>Net Registered Tonnage</b>	105 889		<b>Ht of manifold above W/L in normal ballast condition</b>	23.20 Metres
<b>Gross Tonnage</b>	160 216		<b>Height of Manifold Centre above Keel</b>	33.40 Metres
<b>Suez Tonnage</b>	151 168		<b>Block Coefficient (Cb) @ Full Load Δ</b>	<b>0.81407</b>
<b>Panama Tonnage</b>	N/A		<b>Distance stern to Aft Perpendicular</b>	6.0505 metres
<b>Number of Hose Crane/Derrick(s)</b>	2		<b>Distance bow to Forward Perpendicular</b>	8.0205 metres
<b>SWL of Hose Crane/Derrick</b>	20	Tonnes	<b>Main Engine Minimum Speed</b>	20 RPM
<b>Max Outreach of Hose Crane /Derrick outboard of ship's rail</b>	8.40	Metres	<b>Maximum Duration at Minimum RPM</b>	12 Hours
			<b>Correlating Propeller Speed assuming zero slip</b>	4.4 Knots

Description	Location	No	Length	Material	Dia		M.B.L		
Mooring Wires on Drums	Forecastle	6	275	Metres	IWRC	40	mm	103	Metric Tonnes
	Forward Main Deck	4	275	Metres	IWRC	40	mm	103	Metric Tonnes
	Aft Main Deck	4	275	Metres	IWRC	40	mm	103	Metric Tonnes
	Poop	6	275	Metres	IWRC	40	mm	103	Metric Tonnes
	<b>Total</b>	<b>20</b>							
Mooring Wire Tails	Forecastle	6	11	Metres	Polyester/Polyprop	76	mm	143.8	Metric Tonnes
	Forward Main Deck	4	11	Metres		76	mm	143.8	Metric Tonnes
	Aft Main Deck	4	11	Metres		76	mm	143.8	Metric Tonnes
	Poop	6	11	Metres		76	mm	143.8	Metric Tonnes
	<b>Total</b>	<b>20</b>							
Mooring Ropes on Drums	Forecastle			Metres			mm		Metric Tonnes
	Forward Main Deck			Metres			mm		Metric Tonnes
	Aft Main Deck			Metres			mm		Metric Tonnes
	Poop			Metres			mm		Metric Tonnes
	<b>Total</b>	<b>0</b>							
Other mooring Lines	Forecastle	2	220	Metres	Synthetic	68	mm	68.6	Metric Tonnes
	Forward Main Deck			Metres			mm		Metric Tonnes
	Aft Main Deck			Metres			mm		Metric Tonnes
	Poop	2	220	Metres	Synthetic	68	mm	68.6	Metric Tonnes
	<b>Total</b>	<b>4</b>							
Anchor Cable Particulars	<b>Number of Shackles Port Anchor Cable</b>					14			
	<b>Number of Shackles Starboard Anchor Cable</b>					14			
	<b>Cable Diameter</b>					127	mm		

6.2.2. STS Compatibility Data Sheet

Ship's Name				Ship's IMO No							
Drafts		Manifold Height above waterline		10.89 metres							
Forward	22.00	Total Parallel Body Length		174.93 metres							
Aft	23.00	Forward Parallel Body Length		94.50 metres							
Mean	22.50	Total Parallel Body Length		80.43 metres							
<b>Unless otherwise stated all numerical values below refer to distances in metres</b>											
<b>Port Fairleads</b>											
Identity	Long'nal Distance from stern	Transverse Dist from C/L	Vertical Height above Keel	Fairlead Type	Size (mm)	SWL (Tonnes)	Vertical Height above W/L	Distance from manifold mid point		Additional Information	Draft at Station
								Distance	Fwd or Aft		
C/L1	0.00	0.00	30.49	Open Roller Fairlead	400x250	136.0	7.47	164.06	Aft		23.02
P1	1.94	9.43	30.49	Closed Chock	500x400	136.0	7.48	162.12	Aft		23.01
P2	3.39	10.16	30.49	Closed Chock	500x400	136.0	7.48	160.67	Aft		23.01
P3	4.35	10.40	30.49	Closed Chock	500x400	136.0	7.48	159.71	Aft		23.01
P4	8.47	12.82	30.49	Closed Chock	500x400	136.0	7.50	155.59	Aft		22.99
P5	10.40	13.79	30.49	Closed Chock	500x400	136.0	7.50	153.66	Aft		22.99
P6	12.10	14.51	30.49	Closed Chock	500x400	136.0	7.51	151.96	Aft		22.98
P7	12.82	15.24	30.49	Closed Chock	500x400	136.0	7.51	151.24	Aft		22.98
P8	14.27	15.97	30.49	Closed Chock	500x400	136.0	7.52	149.79	Aft		22.97
P9	15.48	16.69	30.49	Closed Chock	500x400	136.0	7.52	148.58	Aft		22.97
P10	81.28	29.00	31.45	Closed Chock	500x400	136.0	8.69	82.78	Aft		22.76
P11	82.73	29.00	31.45	Closed Chock	500x400	136.0	8.69	81.33	Aft		22.76
P12	84.18	29.00	31.45	Closed Chock	500x400	136.0	8.69	79.88	Aft		22.76
P13	90.00	29.00	31.45	Closed Chock	500x400	136.0	8.71	74.06	Aft		22.74
P14	91.20	29.00	31.45	Closed Chock	500x400	136.0	8.72	72.86	Aft		22.73
P15	92.65	29.00	31.45	Closed Chock	500x400	136.0	8.72	71.41	Aft		22.73
P16	131.05	29.00	31.45	Closed Chock	500x400	136.0	8.84	33.01	Aft	STS Aft	22.61
P17	162.07	29.00	31.45	Panama Chock	500x400	Unknown	8.94	1.99	Aft	Manifold	22.51
P18	164.06	29.00	31.45	Panama Chock	500x400	Unknown	8.94	0.00	Aft	Manifold	22.51
P19	166.05	29.00	31.45	Panama Chock	500x400	Unknown	8.95	1.99	Fwd	Manifold	22.50

Identity	Long'nal Distance from stern	Transverse Dist from C/L	Vertical Height above Keel	Fairlead Type	Size (mm)	SWL (Tonnes)	Vertical Height above W/L	Distance from manifold mid point		Additional Information	Draft at Station
								Distance	Fwd or Aft		
P20	201.05	29.00	31.45	Closed Chock	500x400	136.0	9.06	36.99	Fwd	STS Forward	22.39
P21	251.10	29.00	31.45	Closed Chock	500x400	136.0	9.22	87.04	Fwd		22.23
P22	252.56	29.00	31.45	Closed Chock	500x400	136.0	9.22	88.50	Fwd		22.23
P23	253.77	29.00	31.45	Closed Chock	500x400	136.0	9.22	89.71	Fwd		22.23
P24	269.00	28.78	31.64	Closed Chock	500x400	136.0	9.46	104.94	Fwd		22.18
P25	270.45	28.72	31.67	Closed Chock	500x400	136.0	9.50	106.39	Fwd		22.17
P26	271.66	28.67	31.69	Closed Chock	500x400	136.0	9.52	107.60	Fwd		22.17
P27	303.83	22.01	31.83	Closed Chock	500x400	136.0	9.76	139.77	Fwd		22.07
P28	205.77	21.29	31.93	Closed Chock	500x400	136.0	9.55	41.71	Fwd		22.38
P29	321.74	14.51	32.61	Closed Chock	500x400	136.0	10.60	157.68	Fwd		22.01
P30	322.94	13.55	32.66	Closed Chock	500x400	136.0	10.65	158.88	Fwd		22.01
P31	324.90	12.58	32.90	Closed Chock	500x400	136.0	10.90	160.84	Fwd		22.00
P32	333.35	3.29	33.14	Closed Chock	500x400	136.0	11.16	169.29	Fwd		21.98
P33	333.83	0.97	33.38	Closed Chock	600x450	204.0	11.40	169.77	Fwd		21.98
Starboard Fairleads											
Identity	Long'nal Distance from stern	Transverse Dist from C/L	Vertical Height above Keel	Fairlead Type	Size (mm)	SWL (Tonnes)	Vertical Height above W/L	Distance from manifold mid point		Additional Information	Draft at Station
								Distance	Fwd or Aft		
S1	1.94	9.43	30.49	Closed Chock	500x400	136.0	7.48	162.12	Aft		23.01
S2	3.39	10.16	30.49	Closed Chock	500x400	136.0	7.48	160.67	Aft		23.01
S3	4.35	10.40	30.49	Closed Chock	500x400	136.0	7.48	159.71	Aft		23.01
S4	8.47	12.82	30.49	Closed Chock	500x400	136.0	7.50	155.59	Aft		22.99
S5	10.40	13.79	30.49	Closed Chock	500x400	136.0	7.50	153.66	Aft		22.99
S6	12.10	14.51	30.49	Closed Chock	500x400	136.0	7.51	151.96	Aft		22.98
S7	12.82	15.24	30.49	Closed Chock	500x400	136.0	7.51	151.24	Aft		22.98
S8	14.27	15.97	30.49	Closed Chock	500x400	136.0	7.52	149.79	Aft		22.97
S9	15.48	16.69	30.49	Closed Chock	500x400	136.0	7.52	148.58	Aft		22.97
S10	81.28	29.00	31.45	Closed Chock	500x400	136.0	8.69	82.78	Aft		22.76

Identity	Long'nal Distance from stern	Transverse Dist from C/L	Vertical Height above Keel	Fairlead Type	Size (mm)	SWL (Tonnes)	Vertical Height above W/L	Distance from manifold mid point		Additional Information	Draft at Station
								Distance	Fwd or Aft		
S11	82.73	29.00	31.45	Closed Chock	500x400	136.0	8.69	81.33	Aft		22.76
S12	84.18	29.00	31.45	Closed Chock	500x400	136.0	8.69	79.88	Aft		22.76
S13	90.00	29.00	31.45	Closed Chock	500x400	136.0	8.71	74.06	Aft		22.74
S14	91.20	29.00	31.45	Closed Chock	500x400	136.0	8.72	72.86	Aft		22.73
S15	92.65	29.00	31.45	Closed Chock	500x400	136.0	8.72	71.41	Aft		22.73
S16	129.06	29.00	31.45	Closed Chock	500x400	136.0	8.83	35.00	Aft	STS Aft	22.62
S17	162.07	29.00	31.45	Panama Chock	500x400	Unknown	8.94	1.99	Aft	Manifold	22.51
S18	164.06	29.00	31.45	Panama Chock	500x400	Unknown	8.94	0.00	Aft	Manifold	22.51
S19	166.05	29.00	31.45	Panama Chock	500x400	Unknown	8.95	1.99	Fwd	Manifold	22.50
S20	199.06	29.00	31.45	Closed Chock	500x400	136.0	9.05	35.00	Fwd	STS Forward	22.40
S21	251.10	29.00	31.45	Closed Chock	500x400	136.0	9.22	87.04	Fwd		22.23
S22	252.56	29.00	31.45	Closed Chock	500x400	136.0	9.22	88.50	Fwd		22.23
S23	253.77	29.00	31.45	Closed Chock	500x400	136.0	9.22	89.71	Fwd		22.23
S24	269.00	28.78	31.64	Closed Chock	500x400	136.0	9.46	104.94	Fwd		22.18
S25	270.45	28.72	31.67	Closed Chock	500x400	136.0	9.50	106.39	Fwd		22.17
S26	271.66	28.67	31.69	Closed Chock	500x400	136.0	9.52	107.60	Fwd		22.17
S27	303.83	22.01	31.83	Closed Chock	500x400	136.0	9.76	139.77	Fwd		22.07
S28	205.77	21.29	31.93	Closed Chock	500x400	136.0	9.55	41.71	Fwd		22.38
S29	321.74	14.51	32.61	Closed Chock	500x400	136.0	10.60	157.68	Fwd		22.01
S30	322.94	13.55	32.66	Closed Chock	500x400	136.0	10.65	158.88	Fwd		22.01
S31	324.90	12.58	32.90	Closed Chock	500x400	136.0	10.90	160.84	Fwd		22.00
S32	333.35	3.29	33.14	Closed Chock	500x400	136.0	11.16	169.29	Fwd		21.98
S33	333.83	0.97	33.38	Closed Chock	600x450	204.0	11.40	169.77	Fwd		21.98



Port Bollards							
Identity	Long'nal Distance from stern	Nearest Fairlead (No)	Distance from fairlead	Bollard Type	Size (mm)	SWL (Tonnes)	Additional Information
C/La	2.90	C/L1	1.21	Double Bollards	Ø450	115.0	
Pa	2.90	P2	2.42	Double Bollards	Ø600	115.0	
Pb	7.26	P4	1.94	Double Bollards	Ø600	115.0	
Pc	16.35	P9	3.87	Double Bollards	Ø600	115.0	
Pd	85.15	P12	3.77	Double Bollards	Ø600	115.0	
Pe	93.38	P15	3.77	Double Bollards	Ø600	115.0	
Pf	130.63	P16	4.16	Double Bollards	Ø550	101.0	
Pg	154.82	P17	7.02	Double Bollards	Ø500	77.0	STS
Ph	159.55	P17	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Pi	162.55	P17	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Pj	165.56	P19	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Pk	168.27	P19	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Pl	174.17	P19	7.02	Double Bollards	Ø500	77.0	STS
Pm	204.66	P20	4.84	Double Bollards	Ø550	101.0	
Pn	250.04	P21	4.35	Double Bollards	Ø600	115.0	
Po	268.52	P24	3.87	Double Bollards	Ø600	115.0	
Pp	317.78	P29	4.84	Double Bollards	Ø600	115.0	
Pq	329.24	P32	5.32	Double Bollards	Ø600	115.0	

Stbd Bollards							
Identity	Long'nal Distance from stern	Nearest Fairlead (No)	Distance from fairlead	Bollard Type	Size (mm)	SWL (Tonnes)	Additional Information
Sa	2.90	S2	2.42	Double Bollards	Ø600	115.0	
Sb	7.26	S4	1.94	Double Bollards	Ø600	115.0	
Sc	16.35	S9	3.87	Double Bollards	Ø600	115.0	
Sd	85.15	S12	3.77	Double Bollards	Ø600	115.0	
Se	93.38	S15	3.77	Double Bollards	Ø600	115.0	
Sf	130.63	S16	4.16	Double Bollards	Ø550	101.0	
Sg	154.82	S17	7.02	Double Bollards	Ø500	77.0	STS
Sh	159.55	S17	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Si	162.55	S17	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Sj	165.56	S19	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Sk	168.27	S19	2.66	Single Cruciform Bollard	Ø315	40.0	Hose Handling
Sl	174.17	S19	7.02	Double Bollards	Ø500	77.0	STS
Sm	204.66	S20	4.84	Double Bollards	Ø550	101.0	
Sn	250.04	S21	4.35	Double Bollards	Ø600	115.0	
So	268.52	S24	3.87	Double Bollards	Ø600	115.0	
Sp	317.78	S29	4.84	Double Bollards	Ø600	115.0	

### 6.2.3. Guidelines for Data Entry

#### 1 Introduction

The STS Plan Mooring Map has been developed as a tool to facilitate pre-operational verification regarding the compatibility of two vessels scheduled to conduct an STS operation.

In order to determine such compatibility the STS Plan Mooring Map captures key dimensional and mooring equipment related data for the named vessel. This enables concerned parties to compare the data captured for both vessels that are scheduled to conduct an STS operation to verify their compatibility to do so.

##### 1.1 Applicability

The STS Mooring Map has been developed for tanker owners and operators and STS Resource Providers who have a vested interest in ensuring the operational integrity and safety of STS Operations conducted utilising their assets and/or for which they have accountability.

#### 2 Scope

The STS Mooring Map is an element of the STS Plan developed in accordance with the standards describe in MARPOL Annex I, as amended by Resolution MEPC. 186(59), Chapter 8: Prevention of Pollution during Transfer of Oil Cargo between Oil Tankers at Sea, Regulations 40, 41, 42.

#### 3 General Guidelines

The data entry fields in both the particulars and map sheets are unprotected and have been configured to reproduce text in blue. Heading and formulated fields are protected and have been configured to reproduce data in black text.

##### 3.1 Particulars Sheet

The data in the 'Particulars' sheet of the STS Plan Mooring Map can be found in the SIRE Vessel's Particulars Questionnaire. Primarily such data is of a dimensional nature and is self explanatory by virtue of their individual heading descriptions.

##### 3.2 Map Sheet

The data in the 'Map' sheet of the STS Plan Mooring Map should be taken from the vessel's Mooring Arrangement Plans.

The conventions for location mooring equipment items are as follows:

- Longitudinal co-ordinates  
Measured from the aftermost extremity of the ship's structure towards the vessel's bow.
- Transverse co-ordinates  
Measured from the Vessel's Centreline towards the ship's side referred to in the specific table heading, or in the case of the 'Structural Appendages' table, as per the description.
- Vertical co-ordinates  
Measured from the Vessel's Keel upwards.

The Table Headings are as follows:

- (i) Port Fairleads
- (ii) Starboard Fairleads
- (iii) Port Bollards

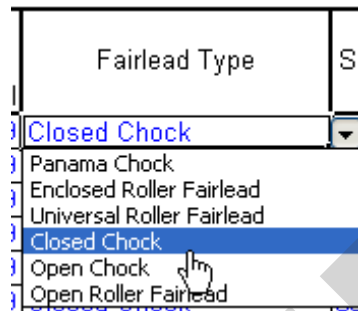
- (iv) Starboard Bollards
- (v) Structural Appendages

Details that should be included in the Structural Appendages table are items that overhang or are vertically above or proximate to the vertical taken from the vessel's sheer strake at the specific location in question. Examples of these may include bridge wings, lifeboats and aft stores crane gantries.

4 Descriptions for fairleads and bollards

4.1 Fairleads

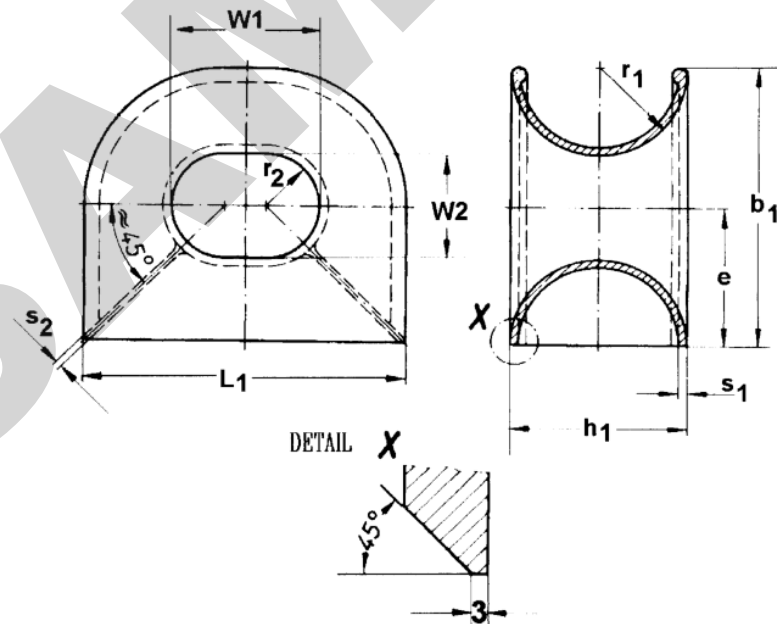
Data entry for the Fairlead Type is facilitated by selection of the appropriate fairlead description from a drop down box. An example is shown hereunder:



The dimensions for each type of fairlead can be determined as follows:

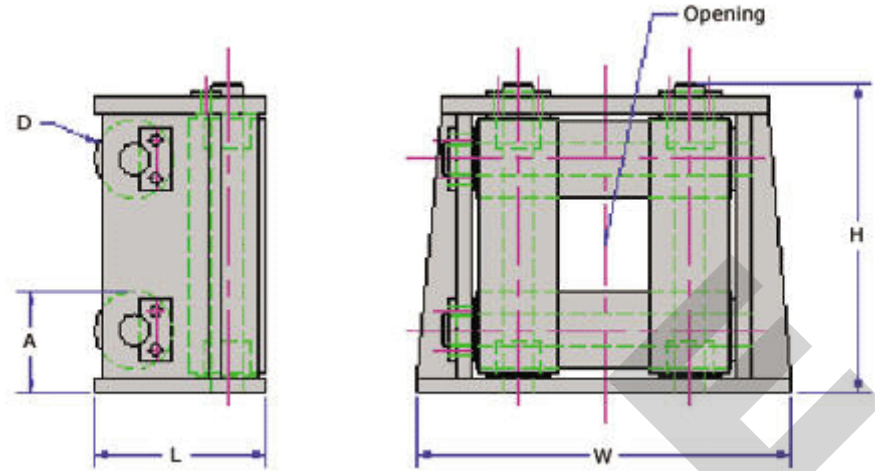
Panama Chock & Closed Chock

Size in mm taken from W1 x W2 as per the diagram below:



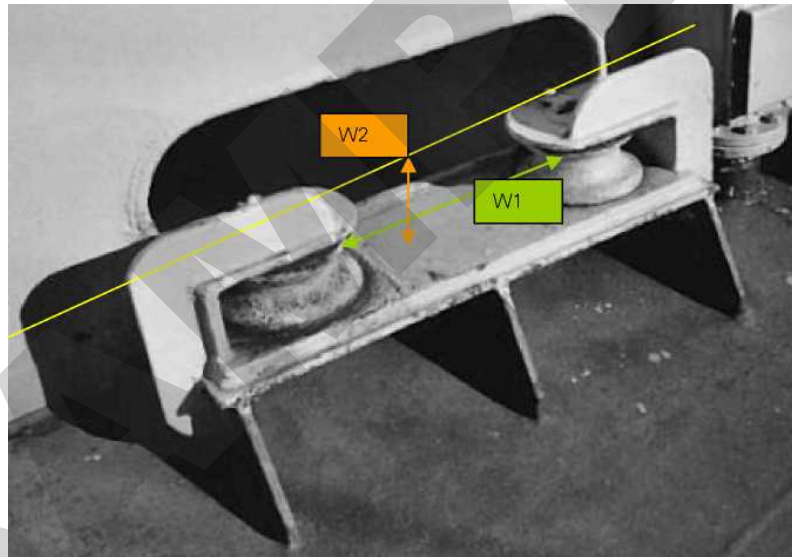
Enclosed or Universal Roller Fairlead

Size in mm taken from W x H as per the diagram below:



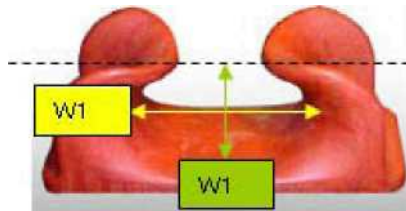
Open Roller Fairleads

Size in mm taken from W1 x W2 as per the image below:



Open Chock

Size in mm taken from W1 x W2 as per the image below:



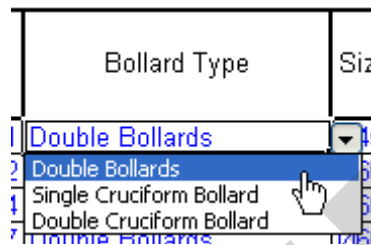
Fairlead Numbering system

Whilst there is no fixed system for numbering the fairleads, naming each fairlead with its own unique alphanumeric identity assists the user to avoid any ambiguity. Furthermore it assists in the determination of the optimum pairing of bollards with their most appropriate fairleads for the purpose of effective mooring.

For example, prefix the bollards on the Port Side with the letter P and number them from aft to forward. Similarly, fairleads on the starboard side could be prefixed with the letter S and numbered aft to forward. For fairleads on the Centreline, these could be prefixed by C/L numbered aft to forward.

4.2 *Bitts and Bollards*

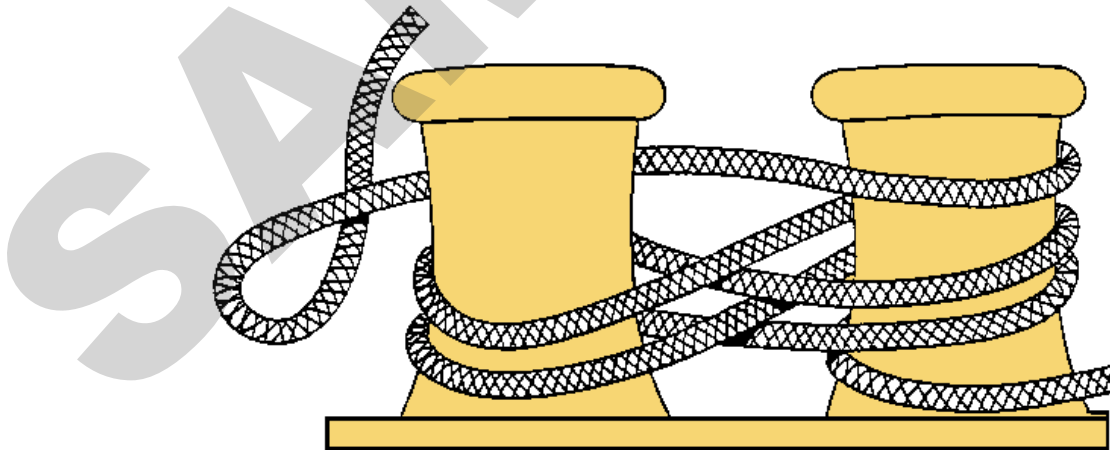
Data entry for the Bollard Type is facilitated by selection of the appropriate Bollard description from a drop down box. An example is shown hereunder:



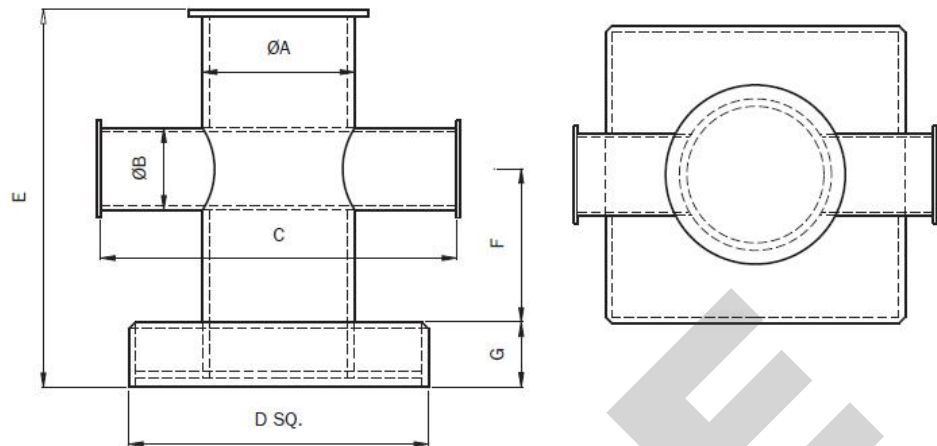
Bollard dimensions

Bollard size (mm) refers to the diameter of the bollard or bitt pins. Bollard Types are as follows:

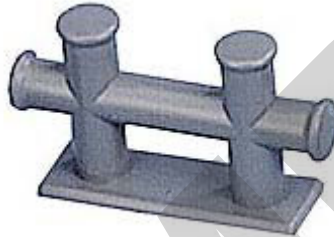
*Double Bollards*



*Single Cruciform Bollard*



*Double Cruciform Bollard*



Bollard Numbering system

Whilst there is no fixed system for numbering the bollards, naming each one with its own unique alphanumeric identity assists the user to avoid any ambiguity.

For example, prefix the bollards on the Port Side with the letter P and alphabetically order them from aft to forward with lower case lettering.

Similarly, bollards on the starboard side could be prefixed with the letter S and alphabetically ordered using lower case letters. For bollards on the Centreline, these could be prefixed by C/L and alphabetically ordered using lower case letters.

In order to identify optimum pairing between bollards and fairleads a data entry field is available for recording the identity number of the nearest fairlead for each set of bollards or bits. A further data entry field is available for capturing the distance from each set of bollard or bits to its nearest fairlead.

### 6.3. EXAMPLE INSTRUCTIONS FOR CONNECTIONS OF STS HOSES

The following instructions shall be followed by ship's personnel to connect the STS Hoses supplied by the STS Service Provider. Ideally this operation should be supervised throughout by the attending STS Superintendent, and should only be performed by the ship's staff when requested in writing to do so by the STS Service Provider.

If it is possible to do so, ship's staff should endeavour to complete stages 1 thru 5 of the tightening process, leaving the final stage to complete under the supervision of the attending STS Superintendent following his arrival on site.

#### *Preparation*

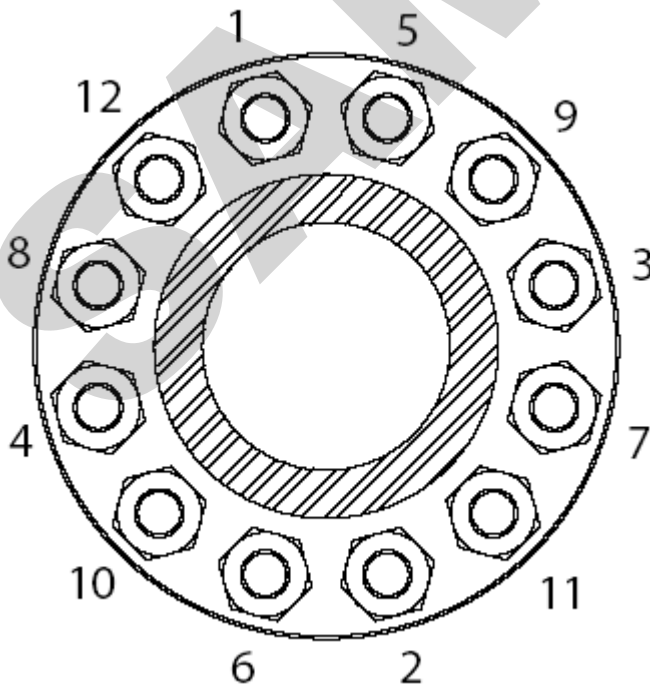
Prior to connection of the two hoses, the flange faces should be inspected and cleaned to ensure all residues and debris from previous gaskets or fixatives are removed completely. For best results, use a metal flange scraper and an aerosol gasket remover and inspect the flange for damage. Be sure surface finish and flatness are satisfactory. Avoid using a wire brush for cleaning flange surfaces as this could result in surface scoring.

Only the joints, nuts, bolts and torque wrench supplied with these hose sections are to be used for the purpose of hose connection.

Lubricate bolt and nut threads and nut bearing face (where it contacts the flange).

Centre the gasket on the flange. Note: standard ANSI ring gaskets, when cut properly, should centre themselves with the bolts in place.

#### *Flange Diagram*





*Tightening process*

After flange assembly and all nuts have been run down by hand with joint in place, start wrench tightening following the sequence of the numbers indicated on the flange diagram above (marking the number on the flange with a crayon aids in keeping track of the tightening process).

During all of the following steps, keep any gap between flanges even all around the circumference, and nuts made up approximately the same amount on each end of the bolt.

- 1) First time around just snug the nuts with a hand wrench.
- 2) Second time around tighten the nuts firmly with the same wrench.

Use a torque wrench for the following steps:

- 3) Third time around apply approximately 25% recommended torque\*\*.
- 4) Fourth time apply approximately 75% of recommended torque\*\*.
- 5) Fifth time around, apply 100% of recommended torque\*\*.
- 6) Continue tightening nuts all around until nuts do not move under 100% recommended torque\*\*.

If possible, re-torque after completion of each transfer operation as most of the short term bolt preload loss occurs within 24 hours after initial tightening.

\*\* The recommended torque value is dependent upon the gasket manufacturer's recommendation and for the gasket supplied is:

<u>xxx</u>	<i>ft lbs / Nm</i>
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6.4. DRAWINGS

The following information related to this plan is attached:

No.	Title	Dwg. No.
1.	General Arrangement Plan	
2.	Capacity Plan (with Deadweight Scale)	
3.	Anchor Handling & Mooring Arrangement Plan	
4.	Diagram of Cargo Oil and Ballast Pipe	

SAMPLE