

SHIP TO SHIP

Transfer Guide

for Petroleum, Chemicals and Liquefied Gases



**Chemical Distribution Institute
International Chamber of Shipping
Oil Companies International Marine Forum
Society of International Gas Tanker and Terminal Operators**

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Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil and oil products. OCIMF is organised to represent its membership before, and consult with, the International Maritime Organization and other government bodies on matters relating to the shipment and terminalling of crude oil and oil products, including marine pollution and safety.

Society of International Gas Tanker and Terminal Operators (SIGTTO) is a non-profit making organisation dedicated to protect and promote the mutual interests of its members in matters related to the safe and reliable operation of gas tankers and terminals within a sound environment. The Society was founded in 1979 and was granted consultative status at the IMO in November 1983. The Society has over 100 companies in membership who own or operate over 95% of the world's LNG tankers and terminals and over 55% of the world's LPG tankers and terminals.

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1.5 Control of operations

1.5.1 General

All STS transfer operations should be conducted under the co-ordination and advisory control of one individual, who will either be one of the Masters concerned, an STS Superintendent or the POAC (depending on the cargo – see below). To prevent fatigue during extended operations, the role may be formally transferred to another suitably qualified person (see section 1.5.2).

If the Masters involved in the STS operation are unfamiliar with, or inexperienced in, STS transfer operations, it is recommended that an STS Superintendent is employed to advise them. There are STS service companies offering such services. Before employing such assistance, those parties contracting STS service companies should take steps to ensure that the STS service provider will provide trained and experienced STS Superintendents and, where required, properly qualified POACs.

For transfers undertaken at sea involving *MARPOL* Annex I cargoes, the designation of a POAC is a mandatory requirement (see appendix A). The POAC will either be one of the Masters concerned or an STS Superintendent.

It is not the intention of these recommendations to suggest that the POAC or STS Superintendent in any way relieves the ship's Master of any of his authority, duties or responsibilities. The Master of each vessel shall always remain in command of his vessel, crew and cargo, and shall under no circumstances permit safety to be jeopardised by the actions of others.

Prior to the commencement of an STS transfer operation, the Masters of each vessel, together with the STS Superintendent or POAC, should discuss each key component of the operation (as applicable: fendering, manoeuvring, mooring, hose connection, cargo transfer, hose disconnection, unmooring and unfendering). The purpose of this discussion is to ensure that key personnel involved in the operation clearly understand and agree how the operation will be conducted and agree the content of the joint plan of operation (JPO) (see section 5.2).

1.5.2 Manning for ship to ship operations and the prevention of fatigue

A proper deck and bridge watch should be established and maintained on each vessel underway or at anchor for the duration of the operation. Where appropriate the principles of bridge team management should be observed. See *Bridge Procedures Guide* (reference 19). When alongside in port, normal safe deck and cargo watchkeeping duties should be maintained by all vessels involved.

It is to be expected that STS transfer operations will place additional demands on ships' crews, as personnel are not only required for the cargo transfer operations and tending of moorings, but may also be needed to keep a safe navigational or anchor watch throughout the operation.

Analysis of accident data and research within the marine industry points to fatigue as a cause or contributing factor to human error because of its impact on performance. Human error from fatigue is also shown to have contributed to a number of marine casualties.

In the planning phase for an STS transfer operation, in cooperation with the Masters of the nominated vessels, due account should be taken of the estimated duration and complexity of the operation and an assessment made of the additional workloads associated with the activity. The aim should be to ensure that all personnel (including STS Superintendents, POACs and Mooring Masters) remain fatigue free and that minimum rest periods, as required by applicable legislation, are complied with, particularly when conducting multiple transfers. If necessary, additional personnel should be placed on board to assist with the STS transfer operations. Consideration may also need to be given to the provision of an additional STS Superintendent where workloads are indicated to be high or operations are likely to be over an extended period.

Excess noise levels in the vicinity of rest areas can compound fatigue problems. The impact of noise should be monitored and, where necessary, corrective measures taken.

1.6 Role of a ship to ship Superintendent

The role of the STS Superintendent is not to relieve the Master(s) of their duties or responsibilities. The STS Superintendent should ensure, through the provision of professional advice and guidance to the Master(s), the co-ordination and safe completion of the STS operation.

It is recommended that the STS Superintendent:

- Reviews the location-specific risk assessment.
- Reviews the JPO and associated risk assessments.
- Verifies that agreed STS operating procedures are followed and that the operation is conducted in compliance with all applicable regulatory requirements.
- Confirms that all required reports are made to the appropriate authorities.
- Confirms that all relevant checklists are completed.
- Oversees the correct placement of primary and secondary fenders.
- Sights and reviews mooring equipment.
- Conducts a pre-operations discussion with the responsible persons of involved vessels, including lightering support vessel and tugs, as appropriate.
- Confirms that personnel involved in each part of the operation are properly briefed and understand their responsibilities.
- Discusses current and forecasted environmental conditions and the need for their continuous monitoring throughout the operation(s).
- For at sea transfers, discusses passage planning and agrees courses and speeds for manoeuvring and mooring operations.
- Verifies joint agreement of the mooring and unmooring plans.
- Reviews and verifies that any site-specific risk mitigations are in place.
- Supervises vessel approach and manoeuvring alongside.
- Confirms the safe connection of transfer hoses/arms and any associated emergency release systems (ERS).
- Verifies that any emergency shutdown system (ESD) is properly connected and tested.
- Confirms that cargo transfer rates are being monitored together with associated vapour management procedures.
- Verifies that the integrity of the mooring arrangement is being continuously monitored.
- Ensures that contingency plans are activated in the event of an emergency.
- Verifies that cargo transfer lines are properly drained and, where required, purged.
- Confirms safe disconnection of hoses/arms.
- Supervises the unmooring and the separation of vessels.
- Where applicable, supervises the return of primary and secondary fenders and transfer equipment.

The STS Superintendent should advise the Master when to suspend or terminate the STS operation.

In fulfilling the above role, in some locations the STS Superintendent may be supported by a Mooring Master Assistant.

1.7 Person in overall advisory control

The role of the POAC is not to relieve the Master(s) of their duties or responsibilities, but to provide professional advice and guidance to the Master(s) in the co-ordination and safe completion of the STS operation.

A designated POAC of the STS operation is required for at sea transfers of MARPOL Annex I cargoes, and will be either one of the Masters concerned or an STS Superintendent. The role of the POAC will be the same as that described for an STS Superintendent in section 1.6.

For STS transfers undertaken at sea involving *MARPOL* Annex I cargoes, the IMO has published guidance on the qualifications of the POAC and the following is based on the content of the *IMO Manual on Oil Pollution*, section 1, chapter 6 (reference 12):

For transfers involving *MARPOL* Annex I cargoes, the POAC should have at least the following qualifications or level of experience:

- An appropriate management level deck licence or certificate meeting international certification standards, with the *International Convention on Standards of Training Certification and Watchkeeping for Seafarers (STCW)* (reference 9) and dangerous cargo endorsements up-to-date and appropriate for the ships engaged in the STS operation.
- Attendance at a recognised ship handling course.
- Experience in conducting mooring/unmooring operations in similar circumstances and with similar vessels.
- Experience in oil tanker cargo loading and unloading.
- A thorough knowledge of the transfer area and surrounding areas.
- Knowledge of spill clean-up techniques, including familiarity with the equipment and resources available in contingency plans.
- Knowledge of STS operations plans (see appendix A1.5) and associated joint plans of operation (see section 5.2).

For transfers involving cargoes other than *MARPOL* Annex I cargoes, it is recommended that the STS Superintendent has similar qualifications and levels of experience to those detailed above, relevant to the type of cargo transferred.

1.8 Training and familiarisation of ship's personnel

It is likely that the pre-operation risk assessment (see section 3.2.2) will identify that many of the crew will be required to take on additional or different tasks, roles and responsibilities than they would when conducting a routine port and cargo operation. The risk assessment may also identify emergency scenarios that are not included in the vessel's regular exercise programme.

It is important that any additional roles and responsibilities are identified and that suitable training is provided prior to the operation. The training requirement for each ship will differ depending on the recent experience of the individuals on board. It should be noted that factors such as location, service provider and equipment to be used may result in additional training being required for experienced personnel. Where there is little or no experience with STS operations, consideration should be given to providing additional experienced STS personnel prior to the operation to assist with the training of personnel and the STS operation.

Training may include items such as:

- Roles and responsibilities of involved parties.
- Bridge watchkeeping procedures.
- Deck watchkeeping procedures.
- Machinery operation.
- Mooring and unmooring.
 - Procedure for passing lines between vessels.
 - Quick release systems.
 - Properties of mooring lines.
 - Fender management.
 - Measures to minimise chafing of lines.
 - Awareness of snap-back zones.
- Operation of cranes.
- Personnel transfer.
- Transfer equipment.