BRITANNIA LOSS PREVENTION

GUIDANCE

MAY 2024

SHIP TO SHIP OPERATIONS PREPARE TO ABORT

A SHIP TO SHIP (STS) TRANSFER OPERATION IS THE TRANSFER OF CARGO BETWEEN TWO SHIPS ALONGSIDE EACH OTHER, EITHER WHILE STATIONARY OR UNDERWAY.

Bringing two ships together and separating them while underway is an unusual occurrence for many ships and the crews onboard. Consequently, heightened risks are associated with these operations, where skill and experience play crucial roles. This article examines the risks involved in manoeuvring the ships while they are underway and the necessity to be ready to abort the operation should circumstances change.

Before engaging in an STS operation, each ship follows its own set of protocols, typically integrated into the ships Safety Management System (SMS) and risk assessment. Tankers will have a Ship to Ship Transfer Operation Plan (STS plan) approved by their flag to consult and follow, and we recommend that the latest version of the 'Ship to Ship Transfer Guide ' is consulted when preparing for this operation.

DURING THE PREPARATION STAGE, THERE ARE SEVERAL FACTORS TO CONSIDER, INCLUDING:

- Ship dimensions and the likely interaction effects between the vessels involved
- Mooring supervisors and their quantity
- Method of communication to be agreed and function tested. A common language should be agreed, and alternative means of communication prepared should the primary means fail
- Clarify which ship will maintain course and speed during the operation (the Constant heading ship) and which ship will be the Manoeuvring ship
- Daylight hours: For certain transfers, especially Very Large Crude Carrier (VLCC) to VLCC transfers, the availability of daylight hours may be stipulated by the company, influencing the timing of the operation
- Wind velocity and direction: There is a defined threshold for wind velocity, often set at 30 knots, with even lower limits for larger ships. The wind direction can make manoeuvring difficult, particularly if in opposition to any tidal currents
- Constraints on swell: Restrictions on swell conditions, typically around 3 meters, are implemented, although VLCC transfers may observe a reduced limit of 1.5 meters
- Meteorological predictions: Weather forecasts must remain within acceptable parameters, and allowances for potential time extensions should be made to account for unforeseen delays
- Unobstructed clear sea area: An unobstructed clear sea area, spanning a specified distance such as 10 nautical miles, is essential for safe manoeuvring
- Approach velocity and heading: The approach velocity should be carefully maintained, often at a speed of 5 to 6 knots, to ensure controlled and safe mooring. The velocity may also be limited by the load limits of the fendering arrangement. The difference in relative heading of the manoeuvring ship should not be excessive and the approach is most commonly from the quarter of the side of mooring (Figure 1)
- Fender requirements: A minimum of 4 jumbo fenders is a standard requirement to protect the vessels during the transfer. The fenders can be rigged on either vessel, but a common arrangement is to rig on the manoeuvring ship
- Side of berthing: This may be determined by the respective vessels manoeuvring characteristics (e.g. taking into account the effect of transverse thrust on the manoeuvring ship) or other reasons such as anchor availability on the constant heading ship
- Mooring arrangement: Moorings should be ready for rapid deployment, with all lines lead through class approved, closed fairleads. Spare moorings should be made available in case of failure. Unmooring should not commence until all manoeuvring, navigational and communication equipment has been confirmed in good order
- Abort criteria. For example, should the environmental conditions change, or a piece of essential equipment fail.

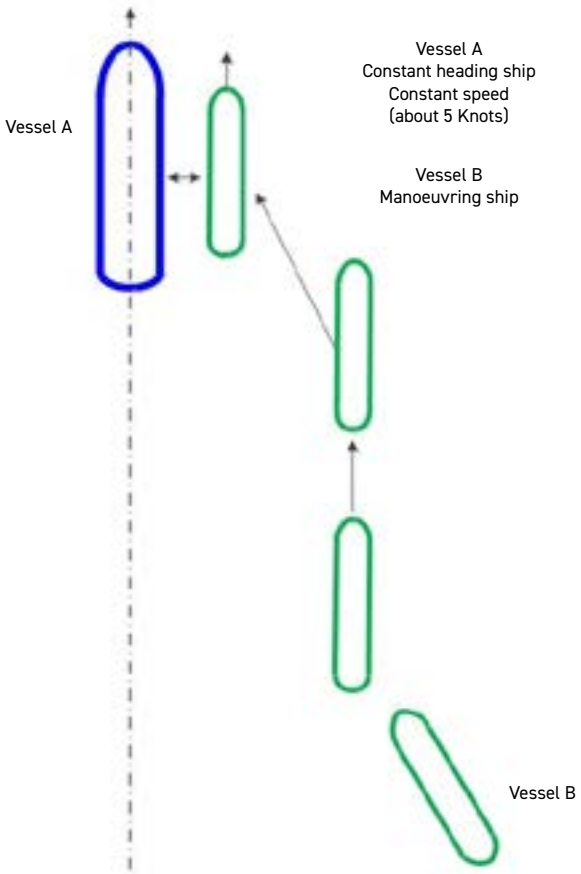

FIGURE 1 American Bureau of Shipping - STS Transfer Operations Plan

THIS LAST POINT IS CRITICAL. QUANTIFYING THE ABORT CRITERIA IN CONTINGENCY PLANS WILL HELP IN MAKING SWIFT DECISIONS IF THE OPERATION IS NOT PROCEEDING AS PLANNED.

We encourage the bridge team to take part in a joint briefing to ensure all taking part are aware of how the connection or disconnection should occur, and to highlight any criteria that will result in aborting the operation.

MARPOL1 Chapter 8 Regulation 41.4 stipulates the role of the Person in Overall Advisory Control (POAC). The regulation states that a ship-to-ship transfer operation should be under the advisory control of a designated person known as POAC. The POAC will either be one of the masters of the ships concerned or an STS superintendent, lightering coordinator or mooring master employed by an STS resource provider. However, appointment of an STS superintendent does not relieve the master's overall authority of commanding the ship.

If an STS provider is utilised, they should be requested to perform a local risk area assessment and provide a contingency plan, including emergency requirements and available resources.

CASE STUDY

BRITANNIA RECENTLY DEALT WITH A MINOR COLLISION THAT OCCURRED WHEN TWO OIL TANKERS WERE ATTEMPTING TO JOIN FOR AN STS OPERATION.

In this case, the entered ship was approaching the larger mother ship from the south and on the starboard side of the mother ship, but the predicted closest point of approach (CPA) was close to zero from the early stages of the approach and throughout. The wind and current were both in a direction that increased the likelihood of the mother ship moving even further to starboard toward the manoeuvring ship. The CPA was therefore more likely to reduce further, which neither bridge team questioned. A mooring master was in attendance and giving orders. It was not until the ships were immediately next to each other that the collision risk was realised and acted upon. The ships attempted emergency evasive manoeuvres but were then too close to each other to avoid contact.

Fortunately, the damage to the respective ships was minor and no pollution or injuries resulted. However, the outcome could easily have become much worse, and the incident serves as a useful reminder of the risks of STS and the procedures that should be observed.

Effective communication plays a crucial role throughout this procedure. Even when a mooring master is present, the ships master remains responsible and should not hesitate to question or override the mooring master. Successfully executing the manoeuvre requires a combination of instinct and 'feel'. On ships approaching each other in close proximity, delaying the decision to make corrections or ultimately aborting the manoeuvre until it's too late should be avoided. This is important to consider as the hydrodynamic pulling forces can be exceptionally powerful when ships are very close, making it challenging or even impossible to keep apart.

The ships master should also be mindful of multiple factors during the approach that require monitoring and analysis. For example, all the focus can be on the one ship you are intending to join with, but attention should not be removed from other ships and navigational hazards in the vicinity. The master should delegate and seek observations and assistance as necessary and encourage the crew to speak if they have any concerns about the course, speed, direction of any other ships, etc.

The careful and continuous monitoring of the approach, CPA, and bodily drag due to hydrodynamic forces when both ships are in close proximity is essential. If the approach is incorrect, it is crucial not to persist. Always bear in mind the extra space needed in case the coming together of the ship for STS overshoots the planned location, or in case an abort is needed.

TRAINING

The individual in overall advisory control of STS operations must be qualified to perform all relevant duties. Masters should also meet following requirements:

- Holds an appropriate management level deck license or certificate that complies with international certification standards, inclusive of up-to-date Standards of Training, Certification, and Watchkeeping (STCW) and dangerous cargo endorsements suitable for ships engaged in the STS operation
- Have attended a suitable ship-handling course
- Demonstrate experience in conducting a suitable number of mooring/unmooring operations in similar circumstances and with similar ships
- Holds understanding of the geographic transfer area and surrounding areas
- Knowledge of spill clean-up techniques, including familiarity with the equipment and resources available in the STS contingency plan
- Thorough knowledge of the STS Plan.

The STCW outlines the essential requirements for masters and chief officers in the competency area, particularly focusing on the ability to "Manoeuvre and handle a ship in all conditions" (refer to Table A-II/2 Specification of minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more Function: Navigation at the management level).

TO ATTAIN THIS COMPETENCE, THE STCW CODE PROVIDES VARIOUS APPROVED METHODS:

1. Approved in-service experience
2. Approved simulator training, when applicable
3. Approved manned scale ship model, when deemed suitable

Given the unique nature of STS operations compared to conventional manoeuvres and the associated distinct risks, it is advisable that senior officers anticipated to be involved in STS operations undergo simulator training specifically tailored to STS operations. This specialised training ensures a comprehensive understanding and preparedness for the nuances and challenges associated with STS manoeuvres.

Members involved in these operations must adhere to strict protocols outlined in their SMS, STS plan, STS drills and industry guidelines. Key considerations include, weather conditions, ship dimensions which will affect the hydrodynamics between the ships and the resources available. Although the POAC is crucial, the authority of the master must remain intact. The success and safety of STS operations relies on meticulous planning, adherence to protocols, effective communication, and the continuous training of personnel. If the operation deviates from the plan or poses potential risks the manoeuvre must be aborted and reapproached when safe to do so.

FOR FURTHER INFORMATION

For further information, please do not hesitate to email lossprevention@tindallriley.com.

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