

CONTAINER TERMINAL REPRESENTATIVE: A SAFER FUTURE FOR CONTAINER SHIPS AND TERMINALS

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Abstract: This study analyzes the current information exchange practices between container vessels and terminals to identify opportunities for improvement by applying best practices from dry bulk and liquid bulk shipping. The study reveals that unlike the well-regulated interfaces between solid and liquid bulk cargo terminals and ships, container terminals and ships are not subject to any of the present International Maritime Organization (IMO) or shipping industry regulatory instruments. The lack of a formally defined Terminal Representative role and standardized ship-to-terminal communication protocols for container vessels poses potential risks to operational safety and efficiency. To address these deficiencies, this study proposes recommendations such as developing IMO regulations specifically for container terminal-ship interfaces and establishing a formal Terminal Representative role with defined responsibilities.

Keywords: *Container terminal, Terminal Representative, Container ship-to-Terminal interface*

1. Introduction to the ship-to shore information exchange

Global trade and commerce significantly rely on the maritime industry, with ports functioning as critical hubs for the transportation of international goods. Within this complex network, the Terminal Representative emerges as a key figure, facilitating connections between shipping companies, port authorities and various logistics stakeholders. This position encompasses a broad spectrum of duties, including vessel operation coordination, cargo handling supervision, adherence to safety regulations, and terminal efficiency enhancement. As the demand for streamlined operations and improved communication grows, the terminal representative's expertise and function become increasingly vital in addressing the intricacies of port and ship administration, ultimately enhancing the overall effectiveness of maritime operations.

The terminal representative plays a crucial role in planning a ship's port stay and ensuring safety during port operations, particularly in terms of ship-to-terminal communication. This study analyzes the current information exchange practices between container vessels and

terminals, aiming to identify opportunities for improvement by applying best practices from dry bulk and liquid bulk shipping. The research methodology employs system analysis and synthesis, incorporating the author's extensive worldwide experience (spanning over 24 years) as chief officer and master on container ships ranging from 900 TEU to 13,000 TEU. The study also includes regular references to accepted information exchange practices for other vessel types based on international standards and requirements and IMO instruments. The primary objective is to highlight certain deficiencies in IMO regulations that permit unregulated ship-to-terminal information exchange and suggest specific measures to mitigate the resulting safety risks for both container ships and terminals.

2. International regulations concerning Terminal Representative

The master bears the overall responsibility for the safety of the vessel under his/her command. This responsibility extends to official ship-to-shore communication, which falls exclusively within the master's purview. Consequently, the only person on board the ship officially authorized to discuss safety-related matters with the terminal during the ship's operation in the port is the master. While the master may temporarily delegate part or all of this responsibility to another deck officer, typically the chief mate, this delegation does not remove the master's duty to ensure the overall safety of the ship. On the other hand, the terminal should designate an employee who is functionally responsible for communicating with the ship. This designation forms the fundamental definition of the **Terminal Representative**. A review of current IMO instruments, with particular emphasis on the main Conventions and Codes, reveals that the definition of a Terminal Representative is included in SOLAS (IMO, 2020), the BLU Code (IMO, 2011), and the "Manual on loading and unloading of solid bulk cargoes for terminal representatives" (IMO, 2005). According to the IMO definition in SOLAS, a terminal representative is an individual appointed by the terminal who is "responsible for operations conducted by that terminal or facility with regard to the particular ship". This definition is contained in Regulation 7 of Chapter 6 and applies exclusively to solid-bulk cargo terminals. Only in the context of bulk cargo handling does a formal obligation exist for the master and terminal representative to ensure that the limitations of the ship's hull strength parameters are not exceeded by drawing up a detailed plan for loading/unloading and deballasting/ballasting the ship. Additionally, there is a requirement to provide a copy of this plan to the competent port State administration. SOLAS VI/2 refers to the terminal representative for container terminal only with regard to the obligation of a shipper to present the verified gross mass of the container to the terminal representative.

The IMO further expanded regulations concerning the ship-to-terminal interface by implementing a specialized code (BLU Code). The code was developed in response to the continued loss of bulk carriers and associated loss of life. This Code focuses solely on the safety practices for information exchange between dry bulk terminals and vessels operated by them. It specifies the responsibilities of all parties involved in planning ship's voyage, such as ship owners, managers, operators, charterers, shippers and terminal operators. All of them have specific duties during the planning process to arrange the safety of the ship and the terminal during port stay by verifying the suitability of the vessel for the intended voyage and port limitations. At the later stage of the voyage and prior ship arrival, both the ship and the terminal have their responsibilities and obligations to take certain measures and exchange the appropriate safety-related information. There are clearly distinguished stages in the ship-to-terminal interface:

- Procedures Prior to the Ship's Arrival
- Procedures Prior to Cargo Handling
- Cargo Loading and Handling of Ballast (deballasting)
- Cargo Unloading and Handling of Ballast (ballasting)

For each of these stages, there are clearly defined duties and responsibilities of the ship and terminal, which must guarantee that the ship's hull and cargo decks will not be overloaded during the operations. The Code confirms the SOLAS definition of a Terminal Representative and states that he/she is personally responsible for the ship's safety, together with the ship's master, with each one having a specific role to play.

A key requirement is the mutual obligation between the ship and terminal to agree on a **sequence plan** for each phase of loading/discharging and to ensure that the plan will be strictly followed by both parties. Such a plan must be lodged to port state authorities to enable them to control the actual execution of the plan. The safety of the ship at each loading/discharging stage must be carefully checked and confirmed.

Another fundamental requirement of the code is the inclusion of a **Ship/Shore Safety Checklist**. It is a critical tool for improving safety and communication between ships and terminals during cargo operations. The checklist has to be completed and confirmed by both the master and the terminal representative and should be kept by both the ship and terminal for a period of at least six months.

Oil tanker operations are regulated by the industry-generated "International Safety Guide for Oil Tankers and Terminals", ISGOTT (IAPH/ICS/OCIMF, 2020). In the case of gas tankers, the relevant guide is the "Liquefied Gas Handling Principles on Ships and in

Terminals” (SIGTTO, 2026). Although the IMO has not generated its own instrument concerning tanker operations at ports, the ISGOTT has been recognized and used as a standard reference for safe operations in the tanker industry for many years. The guide is divided into four parts: General Information, Tanker Information, Terminal Information and Management of the Tanker and Terminal Interface. The last part covers the specific requirements for the interface between the crude oil terminals and tanker vessels. Again, the terminal representative is expected to cooperate fully with the ship personnel in the mutual interest of achieving safe and efficient operations. There is a similar requirement for completing a Ship/Shore Safety Checklist jointly between the ship’s master. Both have to agree on all details of the cargo and ballast operations, as well as on the transfer procedures prior to the beginning of operations. There is a requirement for emergency preparedness, stating that actions in case of an emergency during cargo and ballast operations must be agreed upon in writing. The terminal representative is required to alert the ship to any forecast of adverse weather conditions. He is overall responsible that the shore personnel adhere to all the safety requirements agreed in the Ship/Shore Safety Checklist.

As a summary of this part of the study, it can be reasonably concluded that thanks to the efforts of the IMO, ICS, OCIMF, and other maritime industry organizations, the interface between the solid and liquid bulk cargo terminals and ships is well regulated and has proven to be reliable in terms of ensuring the safety of port operations.

3. Industry accepted practices of the interface between container terminals and container ships

Unlike the well-developed regulatory environment with regard to the shore-to-terminal interface described above, container terminals and ships are not subject to any of the present IMO or shipping industry’s regulatory instruments. The transportation of containers by sea has been significantly developed over the last three decades in response to the growing demand of the global trade. The links between different parties involved in the international transport of containers have become more complex. The introduction of modern techniques and standards for electronic data exchange between shippers, shipping lines, and container port operators has led to the development of unique procedures for data exchange between concerned parties. The growth in both the size and complexity of modern container terminals and container ships requires specific attention by the IMO, as related risks and risk consequences have also significantly increased. The lack of a formally employed terminal representative is partly compensated by container terminal operators by authorizing the so called “terminal(vessel) planner” to communicate with the vessel in regard to the stowage planning. This is a list of

some of the responsibilities of such an employee, which are only related to ship-to-terminal communication:

- Processes various vessel related EDIs and follow up on their timely submission as applicable
- Interact closely with the shipping lines regarding loading lists
- Responsible for providing vessel and shipping agents with information about vessel load and discharge processes
- Controls and assists if planning disturbances occur during vessel call
- Ensures efficient and highly productive planning as per established standard with due consideration to the vessel stability and safety under load and discharge
- Preparation and execution of vessel discharge and load sequence to support, achieve & sustain productivity targets per quay crane operation

The full list of typical job description duties of a terminal planner is quite large, but it has been reduced to duties directly related to the ship-to-terminal interface, as the rest are not subject to this study.

The information flow regarding a ship's cargo planning at a terminal is normally initiated by the central planner of the container line/service. He/she is the one responsible for providing vessel and the terminal with the loading list. It is a common practice nowadays that he/she will be the one to prepare the initial cargo plan which is later sent to the vessel for a review and approval. Once coordinated with the vessel, the container line planner sends a preliminary stowage plan to the terminal planner. There is no regulation that requires any exchange of information between the vessel and the terminal prior to the ship's arrival. All safety-related pre-arrival information, such as ETA, draft limits, water density, ETB, ETS, and loading rates (time required for operations) are furnished to the vessel via the local port agent or the container line planner. At this stage, there is an important difference between the procedures accepted for solid and liquid bulk terminals, and container terminals. The terminal representative, as per both the BLU Code and the ISGOTT, is jointly responsible for the safe operation of the vessel at the terminal, whereas none of the container line planner and the terminal planner bear any formal responsibility for the ship's safety at the port, where the master remains solely responsible, despite the fact that he is not in control of the loading/discharging operations.

In the second stage of the operations, once the vessel is already alongside, there is no regulation requiring the vessel and terminal to complete a Ship/Shore Safety Checklist, which is a significant difference from the accepted safety practices for bulk carriers and tankers. There

is even a widespread practice of no terminal employee physically boarding the vessel to discuss the plan for cargo operations with the master or chief mate. Most terminals worldwide continue to adhere to this procedure during the post-COVID time. There are numerous recorded incidents and accidents related to the poor information exchange between container ships and terminals prior start of the operations. As an example, the rising number of accidents during the lashing and unlashng of containers on deck led to the implementation by the IMO of Annex 14 of the CSS Code (IMO, 2021).

A significant deficiency in the planning of container operations in ports is the lack of information exchange regarding the sequence of cargo operations. The preparation and execution of the vessel discharge and load sequence plan are the sole responsibility of the terminal planner, who does not share it outside the terminal. Thus, unlike the safe practices accepted by tankers and bulk carriers, the master of a container vessel has no information regarding the terminal plan for the sequence of operations. Frequently, the final loading plan differs from the initial plan, with the master receiving this updated information only when the final loading plan is sent on board. There are many recorded cases of near misses and accidents due to improper sequence of operations planned and executed by container terminals. A recent example is the loss of stability of MV Sea Xpress in 2023 in the Port of Mundra (Container News, 2023). As the terminal planner is not obliged to provide a sequence plan to the vessel and additionally the intermediate loading condition is not exchanged with the vessel, the master is not able to precisely calculate the ship's stability and hull stresses. Consequently, there are no present safeguards against loss of stability and hull overstressing for container ships during cargo operations.

In the third stage, after the completion of the operations, the vessel normally receives the final loading plan from the terminal. This is necessary to calculate the final seaworthiness and to verify whether the vessel can safely depart from the port. Owing to the tight schedule of both container ships and terminals, the final loading plan is received the minutest before the ship's departure. Sometimes, when pressed by time, masters may depart from the terminal with the final plan not yet received. As mentioned above, the final plan may deviate from the initial plan, and some of the safety limitations for a specific vessel may not be met. In such cases, masters have to assess the condition of the ship and choose whether they will be able to compensate for the deviation with proper ballasting or whether the vessel has to be returned to the terminal. The lack of clearly defined procedures prior to the departure of a ship leads to potential safety risks and/or additional costs for rearranging the container stowage.

The role of the terminal representative, for both tankers and bulk carriers, includes a well-defined duty in the case of emergencies. The mutual responsibilities of the master and the terminal representative are well recorded and countersigned in the Ship/Shore Safety Checklist. Container terminals are not obliged by international regulations to exchange emergency response information with ships, apart from the mandatory ISPS contact details. Local terminals compensate for this lack of international standards using their own procedures, which, in most cases, are based on local regulations. Such procedures are not standardized and may lead to confusion in case of emergency as ship's crew is expected to conduct the emergency communications with terminals in a different way in terminals around the world. Implementation of standardized responsibilities of the master and the terminal representative would contribute to the overall ship's and terminal emergency preparedness and general safety.

4. Conclusion and proposal for a new regulatory framework for the container ship-to-container terminal interface

The analysis of current practices in container ship and terminal interface reveals significant gaps in safety regulations and information exchange procedures compared to bulk and liquid cargo terminals and ships. The lack of a formally defined Terminal Representative role and standardized ship-to-terminal communication protocols for container vessels poses potential risks to operational safety and efficiency.

The key issues identified include the following:

1. Absence of mandatory pre-arrival information exchange between ships and terminals
2. No requirement for a Ship/Shore Safety Checklist
3. No sharing of cargo operation sequencing plans
4. Lack of standardized procedures for final loading plan exchange
5. Inadequate emergency response coordination

To address these deficiencies, the following recommendations are proposed:

1. Develop IMO regulations specifically for container terminal-ship interfaces
2. Establish a formal Terminal Representative role with defined responsibilities
3. Implement mandatory pre-arrival information exchange protocols
4. Introduce a standardized Ship/Shore Safety Checklist for container operations
5. Require sharing of detailed cargo sequencing plans between terminals and vessels
6. Establish procedures for timely verification of final loading plans
7. Develop standardized emergency response procedures

Implementing these measures would significantly enhance the safety, communication, and operational efficiency of container shipping. Further research and industry collaboration are needed to develop and refine these proposed solutions. Ultimately, a more robust regulatory framework for container terminal operations, aligned with established practices in other shipping sectors, is essential to ensure the continued safe growth of global container trade.

5. References

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