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**REPUBLIC OF THE PHILIPPINES**

**DEPARTMENT OF TRANSPORTATION**

**MARITIME INDUSTRY AUTHORITY**

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| **INVENTORY OF TEACHING AIDS AND REFERENCES** |

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| **Training Course:** | Advanced Training for Chemical Tanker Cargo Operations |
| **Name of Maritime Training Institution:** |  |

| *Note: Substitute textbooks and videos can be used provided they contain the same content of the required.* | **Self-Assessment** | **Tabletop Evaluation** | **Inspection** | **Remarks** |
| --- | --- | --- | --- | --- |
| **To be accomplished by applicant MTI** | **To be accomplished by designated Tabletop Evaluator** | **To be accomplished by designated Evaluation and Inspection Team (EIT)** |
| **Items** | **Hardcopy** | **Electronic Copy** | **Complied** | **Not Complied** | **Complied** | **Not Complied** |  |
| **Teaching Aids (A):** |
| 1. Visual Presentations
 |  |  |  |  |  |  |  |
| 1. Training videos about the following:
* Introduction to Chemical Tankers
* Cargo Pump Operations
* Tanker Safety Culture
* Chemical Tanker Cargo Tank Cleaning
* Over and Under Pressurization of Tank
* Prevention and Reaction to Marine Oil Spills
* Chemical Tanker Emergencies
* Collision, Grounding and Spillage
* Emergency Shutdown Device Linked system
* Entry into Enclosed Space
* Operation and Maintenance of Inert Gas Systems
* Crude Oil Washing
* Permit to Work System

*Note: Other titles of video materials may be used provided it has similar content.* |  |  |  |  |  |  |  |
| 1. Charts, Diagrams and Tables
* IMO Symbols (Load Line Chart)
* Chemical Cargo Compatibility Chart
* Flammability Diagram
* Pumping Curves (Cargo, Ballast, Stripping and Ejector)
* Venting Capacity
* Loading Rate/Capacity
* American Society for Testing a Materials (ASTM) Table
* Hazard Zone Diagram
* Cargo Tank Calibration Table
 |  |  |  |  |  |  |  |
| 1. Various Ships Plan
* General Arrangement and Construction
* Pumping Arrangement and Equipment
* Tank Arrangement, Pipeline System and Tank Venting Arrangement
* Gauging Systems and Alarms
* Cargo Heating Systems
* Tank cleaning, Gas-freeing, and Inerting Systems
* Ballast Water Management System
* Cargo Area Venting and Accommodation Ventilation
* Slop Arrangements
* Vapor Recovery Systems
* Cargo-related Electrical and Electronic Control System
* Tank Coating
* Tank Temperature and Pressure Control Systems
* Fire-fighting Systems
* Ship Emergency Response Plans
 |  |  |  |  |  |  |  |
| 1. Various Operational Checklists
* Loading and unloading (Stowage Plan, VEF, NOR, Ullage Report, Ship/Shore Information Exchange, Cargo Request Form, SSSC Ship Shore Safety Checklist, Loading Certificate, Before & After Loading Certificate, Before and After Discharging Certificate, Pumping Log, Letter of Protest)
* Ballasting and De-ballasting
* Tank Cleaning
* Inerting (Nitrogen Gas)
* Gas-freeing (Cargo tank ventilation procedures)
* Ship to Ship Transfer
* Toxicity
* Flammability and Explosion
* Health Hazards
* Inert Gas Compositions
* Electrostatic Hazards
* Permit to Work and Risk Assessment (entering enclosed spaces, before and during repair and maintenance work, hot and cold work and electrical work)
* Personal Protective Equipment (PPE)
* Cargo Operations Emergency Shutdown
* Firefighting on Chemical Tankers
* Enclosed Space Rescue
* Preparation prior Arrival to Port
* Arrival before Cargo Operation
* Ship/Shore Safety Checklist
* Ship/Shore Safety Cargo Loading/Unloading Agreement
* Ship/Shore Safety Cargo Venting Agreement
* Routine Cargo Operation Safety Checklist
* Ships’ Cargo Hourly Rate and Condition Monitoring
 |  |  |  |  |  |  |  |
| 1. Manuals, Publications and Record Book
* Gas-Detection Instruments and Equipment`s Manual
* Cargo Record Book
* Material Safety Data Sheets (MSDS)
* Procedure and Arrangement (P&A) Manual
* Marine Environment Protection Committee (MEPC) Manual
* Appendix 1 of Regulation 6 Annex II of MARPOL Convention (Guidelines for the categorization of noxious liquid substances)
 |  |  |  |  |  |  |  |
| 1. Exercise Sheets
2. Safe working practices including risk assessment and personal shipboard safety relevant to chemical tankers
3. Tanker safety culture and implementation of Safety Management System (SMS)
4. Monitoring and Safety Systems, including Emergency Shutdown
5. Cargo Measurements and calculations
6. Development and application of cargo-related operation plans, procedures and checklists
7. Chemical cargo-related operations
8. Effect of bulk liquid cargoes on trim and stability and structural integrity
9. Calibration and use of monitoring and gas detection systems, instruments and equipment
10. Chemical tanker emergency procedures
11. Medical first aid procedures on board chemical tankers
12. IBC Code and related documents
 |  |  |  |  |  |  |  |
| **IMO References (R):***MTIs may use additional references as deemed necessary to meet the intended learning outcomes of this training course.* |
| 1. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization (IMO) (latest edition). International Convention for the Safety of Life at Sea (SOLAS)
 |  |  |  |  |  |  |  |
| 1. International Maritime Organization (IMO) (latest edition) MARPOL Consolidated Edition
 |  |  |  |  |  |  |  |
| 1. Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG), Latest Edition
 |  |  |  |  |  |  |  |
| 1. International Safety Management Code (ISM Code) and Revised Guidelines on the Implementation of the ISM Code, Latest Edition
 |  |  |  |  |  |  |  |
| 1. International Code for Fire Safety Systems (FSS Code), Latest Edition
 |  |  |  |  |  |  |  |
| 1. International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), Latest Edition
 |  |  |  |  |  |  |  |
| 1. International Chamber of Shipping (ICS), Tankers Safety Guide (Chemicals), Latest Edition
 |  |  |  |  |  |  |  |
| 1. IMO Resolution A.1050 (27), Revised Recommendations for Entering Enclosed Spaces aboard Ships
 |  |  |  |  |  |  |  |
| 1. International Maritime Dangerous Goods (IMDG) Code Supplement, Latest Edition
 |  |  |  |  |  |  |  |
| 1. International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM). (latest edition)
 |  |  |  |  |  |  |  |
| **Bibliographies (B):***The MTIs may choose from the following bibliography or they may use other reference provided it has similar content of the latest edition.**Electronic publications may be accepted as alternatives to printed copies of latest editions and must be sourced from authorized publishers.* |
| 1. Bulk Liquid Chemical Handling Guide for Plants, Terminals, Storage & Distribution Depots (BLCH Guide). Witherby Publishing Group, Livingston UK. Latest Edition
 |  |  |  |  |  |  |  |
| 1. Maritime and Coast Guard Agency. Code of Safe Working Practices for Merchant Seafarers (COSWP). Latest Edition
 |  |  |  |  |  |  |  |
| 1. Nautical Class. Tank Cleaning Procedure Chemical Tanker. Latest Edition
 |  |  |  |  |  |  |  |
| 1. Oil Companies International Marine Forum (OCIMF). International Safety Guide for Inland Navigation Tank-barges and Terminals (ISGINTT). Latest Edition
 |  |  |  |  |  |  |  |
| 1. INTERTANKO. Measures to Prevent Accidental Pollution. Oslo, Norway. Latest Edition
 |  |  |  |  |  |  |  |
| 1. SIGTTO. Ship to Ship Transfer Guide for Petroleum, Chemicals and Liquefied Gases., Witherby Publishing Group, Livingston UK. Latest Edition.
 |  |  |  |  |  |  |  |
| 1. Tanker Management Self-Assessment 3 (TMSA3). Witherby Publishing Group, Livingston UK. Latest Edition
 |  |  |  |  |  |  |  |
| 1. Vladimir Kunichkin. Chemical Tanker Notes. Witherby Publishing Group, Livingston UK. Latest Edition
 |  |  |  |  |  |  |  |
| 1. United States Coast Guard. Chemical Data Guide for Bulk Shipment by Water, Latest Edition. Marine Technical and Hazardous Materials Division, United States Coast Guard, Washington, DC.
 |  |  |  |  |  |  |  |
| 1. Michael Volk. Pump Characteristics and Applications, Latest Edition. CRC Press, Boca Raton, Florida
 |  |  |  |  |  |  |  |

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| **Accomplished by** | **:** |  |  | **Date** | **:** |  |
|  |  | Name and Signature ofMTI’s Authorized Representative |  |  |  |  |

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| **Table Top Evaluator’s Comments:** |
|  |  |  | **Date of Evaluation** |  |  |  |
|  | **Table Top Evaluator’s Name & Signature** |  |  |  |  |  |
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| **Inspector’s Comments:** |
|  |  |  | **Date of Inspection** |  |  |  |
|  | **Inspector’s Name & Signature** |  |  |  |  |  |
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