Exercise Plan Template
(Instructor's Copy)

Course Title	Management Level Course for Marine Deck Officers (Function 2)
Exercise No.	Exercise Sheet No. A5.1
Exercise Title	Creating a plan for safe loading/unloading cargo
Duration	120 minutes (2 hours) (30 minutes briefing, 75 minutes exercise scenario, and 15 minutes debriefing)
Function	Cargo handling and stowage at the management level
Competence	Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes
Knowledge, Understanding and proficiency	Ability to use all available shipboard data related to loading, care and unloading of bulk cargoes
Intended Learning Outcome/s	At the end of the exercises, the trainee should be able to create a plan for safe loading/unloading cargo and ballasting/de-ballasting operations using stability and trim diagrams and stress-calculating equipment, stowage, and legislative requirements through a given scenario.
Training Equipment/ Materials	• Exercise Sheet A5.1 • Desktop/Laptop Cargo Handling Simulator (Loading Computer)
Scenario Description	Vessel is going to load 70,000 m/t of soda ash in bulk cargo with SF: 40.64 ft3/lt (10% moloo) in the port of Yokohama, Japan bound for Mumbai, India. Trainees must calculate; a) Initial ballast condition b) Final dep. cond. due regards to port draft limit, which is 17.0 m. Vessel has to load the required amount of cargo and distribute cargo in all the 7 cargo hold compartments. Cargo Loading Rate: 3000 mt/hr Ballast pump capacity: Pump 1=1000 m3/hr ; Pump 2=1000 m3/hr Cargo operation to be completed and set to depart in 24 hours. Candidate must conform with the Performance Standards
Ships Particular	M/V PEPETONE Type of ship: Bulk Carrier Call Sign: 3FXF3 Class: Nippon KaijiKyokai (NK) LOA: 225.0 m LBP: 216.0 m (Sumitomo Type 1 vsl) Breadth Moulded: 31.80 m Depth Moulded: 13.87 m Minimum GM: 1.0 (Company Standard) Maximum List: 2 (degrees) Max. Trim (Departure): 0.50 m Max. SF: 85% Max. BM: 85% Min. propeller immerion (%): 60%
Initial Condition	Displacement: **32952.7 mt** Draft: **Fwd/5.385 m, Aft/6.313 m ;**Density : **1.015** Trim: **0.928 m by stern ;** Heel: **0 degrees** GM: **7.125 m** FO: **2,010.3 mt** DO: **59.3 mt** FW: **296 mt** Ballast: **20933.1 mt** Cargo onboard: **nil**

Final Condition	Displacement: **82019.6 mt** Draft: **Fwd/13.497 m, Aft/13.867 m;** Density : **1.015** Trim: **0.37 m by stern ;** Heel: **0 degrees** GM: **3.257 m** FO: **2,010.3 mt** DO: **59.3 mt** FW: **296 mt** Ballast: **nil** Cargo onboard: **70,000 m/t**
Instructor's Action	The instructor should follow these steps for the entire duration of the exercise to ensure effective and safe conduct of the simulation: • before the start of the exercise, ensure that the simulators are up and running and load the specific scenario; • distribute to the trainees the necessary checklists and forms for exercise, conduct briefing and familiarization.; • start the exercise; • monitor the trainees' performance using the checklist (Practical Exercise Record Sheet); • stop the exercise if there is any deviation from the required operation, then explain the reason and give further instructions. Stop also the activity when the time allotted is over; and • conduct debriefing.
Exercise Procedure	
Briefing	Before the start of the exercise, ensure that the following are fully understood by the trainees: • intended learning outcomes and performance criteria for the exercise; • need to treat the activity as it is a real-life situation; • best management practices applicable in exercise; • assessment of the completed exercise, to point out the positive; accomplishment as well as the points for improvements, if any; and • seek clarifications and concerns regarding the instructions given prior commencing the simulation exercise.
Trainee's Action	• plans the loading of cargo to ensure that maximum allowable stress limits are not exceeded; • plans the loading and consumption of deadweight items to determine the minimum departure freeboard to ensure that the vessel is not overloaded at any stage of the voyage through multiple loadline and seasonal zones; and • plans loading operations within acceptable stress parameters.
Debriefing	Start the debriefing by stating the purpose of the debriefing and encourage peer review and discussions, then: • ask the trainees how they went about the exercise and what challenges they encountered; • state whether the intended learning outcomes were achieved; • provide the result of the evaluation using the checklist provided based on the criteria for assessing the competence; and • discuss the positive accomplishment as well as the points for improvements if any.
Monitoring Checklist	
Trainees should be required to repeat the execution if any of the performance criteria is not done or not acceptable	

PERFORMANCE CRITERIA	DONE	NOT DONE	OBSERVATIONS/ COMMENTS
1. Prepare maximum cargo that can be loaded in each hold with consideration on the port of destination • Max. Draft limit: 17.0 m • Max. Heel: +/- 2 degrees • Max. Trim: 0.50 m			
2. Adjust ballast condition for maximum allowable summer draft when loading. To minimize FSM, ballast tanks must be either full or empty • Min. GM: 0.5 m • Max GZ: 1.9 m (45 deg.)			
3. Proper planning, execution, and supervision during loading operation in progress • Ensuring that the operational and design limits of the ship are not exceeded at any stage of the cargo operation.			
4. Planning of stowage plan calculation of ship's draft, trim, stresses • Min. GM: 2.0 m • Max. SF/BM%: 85% at sea condition			
5. Preparing appropriate identification and reporting of unusual condition, as per legislative requirement • Draft: not exceeding allowable maximum draft.			

Note: This sample practical Exercise Sheet was used during the conduct of pilot testing. MTI may enhance this taking into account the Resources they have.