BS MARINE TRANSPORTATION

PROGRAM EDUCATIONAL OBJECTIVES

Graduates of the Marine Transportation Program are expected to attain the following objectives 3 to 5 years after graduation:

- Shall have been recognized marine deck officers and ratings in accordance with the IMO-STCW '78 standards as amended, other national and international laws and conventions.
- Shall have been socially-involved marine deck officers and ratings who actively contribute to the development and advancement of the local, national and international communities.
- Shall have initiated and contributed to the advancement of the maritime profession and industry as marine deck officers and ratings who actively engage in continuous professional development, training and research.

STUDENT OUTCOMES (SOs) AND PERFORMANCE INDICATORS (PIs)

The Marine Transportation student should attain the following by the time of graduation:

a. Plan and conduct a passage and determine position.

   **Performance Indicators**
   a1. Use celestial bodies to determine the ship’s position
   a2. Determine the ship’s position by use of, landmarks, aids to navigation, including lighthouses, beacons and buoys, dead reckoning, taking into account winds, tides, currents and estimated speed
   a3. Use nautical charts, and publications, such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ships’ routing information
   a4. Determine the ship’s position by use of electronic navigational aids
   a5. Operate the equipment and apply the information correctly
   a6. Determine errors of the magnetic and gyro-compasses, using celestial and terrestrial means, and to allow for such errors
   a7. Adjust controls for optimum performance
   a8. Use and interpret information obtained from shipborne meteorological instruments
   a9. Apply the meteorological information available

b. Maintain a safe navigational watch

   **Performance Indicators**
   b1. Apply knowledge of the content, and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended
   b2. Apply knowledge of the Principles to be observed in keeping a navigational watch
   b3. Use routing in accordance with the General Provisions on Ships' Routing
   b4. Use information from navigational equipment for maintaining a safe navigational watch
   b5. Apply blind pilotage techniques
   b6. Follow the reporting procedures in accordance with the General Principles for Ship Reporting Systems and the Vessel Traffic Scheme.
   b7. Apply bridge resource management principles.

c. Use radar and ARPA to maintain safety of navigation.

   **Performance Indicators**
   c1. Describe the characteristics and performance standards of ARPA, and the dangers of over-reliance on it.
   c2. Apply the fundamentals of radar and automatic radar plotting aids (ARPA)
   c3. Operate, interpret, and analyze information obtained from radar.

d. Use ECDIS to maintain the safety of navigation.

   **Performance Indicators**
d1. Describe the capability and limitations of ECDIS operations.
d2. Demonstrate proficiency in operation, interpretation, and analysis of information obtained from ECDIS enterprise
d3. Interpret and analyze information obtained from ECDIS.

e. Respond to emergencies

Performance Indicators

e1. Apply precautions for the protection and safety of life at sea, the ship and its cargo.
e2. Initiate initial action following a collision or a grounding and conduct initial damage assessment and control.
e3. Follow the procedures for rescuing persons from the sea, assisting a ship in distress, responding to emergencies.

f. Respond to a distress signal at sea

Performance Indicators

f1. Describe the contents of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual
f2. Explain the procedures on how to respond to a distress signal at sea.
f3. Use GMDSS equipment.

g. Transmit and receive information by visual signaling

Performance Indicators

g1. Use the International Code of Signals.
g2. Transmit and receive, by Morse light, distress signal SOS as specified in Annex IV of the International Regulations for Preventing Collisions at Sea, 1972, as amended, and Appendix 1 of the International Code of Signals, and visual signaling of single-letter signals as also specified in the International Code of Signals
g3. Execute visual signaling of single-letter signals as also specified in the International Code of Signals.

h. Maneuver the ship

Performance Indicators

h1. Determine the primary characteristics of the ship.
h2. Describe the ship handling and maneuvering procedures.
h3. Simulate different maneuvering techniques applicable to given situations.

i. Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes

Performance Indicators

i1. Explain the effect of cargo, including heavy lifts, on the seaworthiness and stability of the ship.
i2. Describe safe handling, stowage and securing of cargoes, including dangerous, hazardous and harmful cargoes, and their effect on the safety of life and of the ship.
i3. Establish and maintain standard communications during loading and unloading.

j. Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks

Performance Indicators

j1. Explain the damage and defects most commonly encountered onboard.
j2. State the parts of the ship to be inspected covering all parts within a given period of time, and identify those elements of the ship structure which are critical to the safety of the ship.
j3. Describe the causes of corrosion in cargo spaces and ballast tanks and how corrosion can be identified and prevented.
j4. Describe the procedures on how the inspections shall be carried out.
j5. Explain the purpose of the “enhanced survey programme”

k. Comply with pollution prevention requirements

Performance Indicators

k1. Determine the precautions to be taken to prevent pollution of the marine environment.
k2. Explain anti-pollution procedures and identify all associated equipment.
k3. Utilize proactive measures to protect the marine environment.

l. Maintain seaworthiness of the ship

**Performance Indicators**

l1. Apply knowledge of stability and trim, stress tables, diagrams and stress-calculating equipment.
l2. Identify the fundamental actions to be taken in the event of partial loss of intact buoyancy.
l3. Explain the fundamentals of watertight integrity.
l4. Identify the principal structural members of a ship and the proper names for the various parts.

m. Prevent, control and fight fires onboard

**Performance Indicators**

m1. Differentiate the classes and chemistry of fire.
m2. Explain the fire-fighting systems.
m3. Develop action plan to be carried out in the event of fire, including fires involving oil systems.
m4. Organize and conduct fire drills.

n. Operate life-saving appliances

**Performance Indicators**

n1. Organize abandon ship drills.
n2. Explain the operation of survival craft and rescue boats, launching appliances and arrangements, equipment, including radio lifesaving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids.
n3. Operate lifesaving appliances & equipment which include GMDSS radio, satellite EPIRBs, SARTs, and don immersion suits and thermal protective aids.

o. Apply medical first aid on board ship

**Performance Indicators**

o1. Demonstrate skills in basic first aid.
o2. Apply medical guides and advice by radio.
o3. Perform effective action based on medical advice in the case of accidents or illnesses that are likely to occur on board ship.

p. Monitor compliance with legislative requirements

**Performance Indicators**

p1. Explain the relevant IMO conventions concerning safety of life at sea, security and protection of the marine environment
p2. Describe the mandatory requirements on how to protect the marine environment
p3. Describe the procedures on maintaining safe operation of the vessel.

q. Apply leadership and team working skills

**Performance Indicators**

q1. Explain the shipboard personnel management and training.
q2. Describe related international maritime conventions and recommendations, and national legislation.
q3. Apply task and workload management.
q4. Apply effective resource management.
q5. Apply decision-making techniques.

r. Contribute to the safety of personnel and the ship

**Performance Indicators**

r1. Explain the personal survival techniques.
r2. Explain fire prevention and ability to fight and extinguish fires
r3. Demonstrate skills basic first aid
r4. Relate personal safety and social responsibilities.