

HONG KONG POLYTECHNIC
CENTRE FOR MARITIME STUDIES

Course : Post experience Diploma in Ship Command
Subject : Shipboard Operations
Class : PEDSC Part B
Session : 1992-93
Date : 7 June 1993
Time allowed : 3 hours

Instructions to Candidates : Attempt Questions 1, 2 and 3 and any FOUR of the remainder.
This paper has NINE questions.

Available from : MEXNA III stability booklet
Invigilator

Reference Exam No. : 3/93

A1. M.V. Mexna III is floating at drafts F 5.17m A 5.84m. Port amidships 5.47m, Starboard amidships 5.50m in sea water. She then loads 240t into No. 2 L.H. and 170t into No. 5 L.H.

Calculate :

- (a) her final drafts forward and aft
- (b) how much cargo is on board on completion of loading.

(Assume hog remains constant and draft marks are at the perpendiculars).
Known weights : Fuel Oil 341t, Diesel Oil 23t, Fresh water 74t, Constant 54t.

(20 marks)

A2. A ship floats at drafts F 9.20m A 9.40m in sea water.

The following cargo is loaded :

800t at 130m forward of A.P.

1200t at 90m forward of A.P.

900t at 60m forward of A.P.

1000t at 20m forward of A.P.

The ship is then required to load further cargo to sail at a mean draft of 11.00m on even keel trim. Calculate the weight of cargo required and the position at which it should be loaded.

MCTC 290 tm. T.P.C.31t. LCF 2m aft of amidships. L.B.P. 160m.

(20 marks)

A3. (a) Explain "Angle of repose" as applied to bulk cargo and state the usefulness of knowing such angle.

(b) Grain cargo is considered to be liable to shift.

(i) State how you would determine if a free grain surface is required to be secured or not.

(ii) Describe briefly one method you would adopt to secure a free grain surface.

(20 marks)

B4. A weight of 220 tonnes is loaded on a ship 120m long at a point 20m aft of amidships. If the drafts originally were F. 5.00m and A. 6.00m, calculate the new drafts. Displacement before loading 5276 tonnes. TPC 14.2.
MCTC at displacement 5276 - 114.4 tm
MCTC at displacement 5496 - 116.0 tm
Centre of floatation at displacement 5276 - 1.1m forward of amidships
Centre of floatation at displacement 5496 - 1.0m forward of amidships.

(10 marks)

B5. Give details of the stability data required to be supplied to ships under the International Loadline Convention 1966.

(10 marks)

B6. A vessel of 10,000t displacement has KM 4.6m, KG 4.6m and KB 3.6m. Calculate the angle of heel if a cargo item weighing 20t is moved horizontally across the deck from port to starboard through a distance of 20m, using the wall-sided formula.

(10 marks)

B7. Your break bulk ship is required to carry dangerous goods :

(a) State the information that is required prior to loading dangerous cargo.

(b) State the precautions that you will take during loading and carriage of the dangerous cargo.

(10 marks)

B8. State all points to consider while planning to load a full load of coal.

(10 marks)

B9. Your ship is assigned timber load lines. Describe how you would comply with the Rules when carrying timber deck cargo and loaded to her timber load line.

(10 marks)

- End -