

Hydrostatic and Stability (Practical Component)

L-P-T: 0-0-3

Credit: 2

Course content

1. Introduction to lines plan of ship
2. Preparation of drawing of the following items
 - Profile (Stem contour, stern contour and decks)
 - Body plan
 - Half breadth plan
 - Buttock lines
 - Diagonal
3. Preparation of offset table
4. Calculation and drawing of section area curves (Bonjeans) and section area moment curves
5. Calculation for hydrostatic curves, cross curves of stability and the curves of statical stability.

Main particulars of the ship (Bulk carrier)

1. Length overall (L_{OA}): 184.80m
2. Length between perpendiculars (L_{BP}): 174.00m
3. Breadth moulded: 22.90m
4. Depth moulded up to 1st deck at side: 14.4m
5. Draught design/scantling/free board: 10.45m
6. Bilge radius: 3.00m
7. Camber at center of 1st deck: 0.45m
8. Forecastle deck sheer at FP: 0.4m
9. Forecastle deck camber: 0.0m
10. Diameter of propeller plate: 1.0m
11. Frame spacing -
 - Frame No. 0 (AP) to Frame No. 13: 610mm
 - Frame No. 13 to Frame No. 177: 800mm
 - Frame No. 177 to Frame No. 211: 700mm
 - Frame No. 211 to last frame: 610mmFrame 229 is 90mm aft of forward perpendicular
Frame 0 is on aft perpendicular
12. Decks and bulwark details:
 - Poop deck is 16.0m above the base line and extends from stern extreme to frame no. 49
 - Forecastle deck is 2.80m above upper deck at F. P. and extends from frame no. 207 to stern extreme
 - Bulwark in the aft. region is 1.0m above the poop deck and extends from stern extreme to frame no. 49
 - Platform deck is 13.30m above the base line and extends from stern extreme to frame no. 43
 - Bulwark in the forward region is 1.5m above the forecastle deck and extends from frame no. 224 to stern extreme

Materials to be supplied: A copy of stem contour, stern contour and offset table; Drawing paper (2m); Straight edge; french curves, battens and batten weights etc.

Materials to be brought: Pencils (HB and H); Sharpener; Eraser; Scale; Set-square; Duster

MAIN PARTICULARS OF BULK CARRIER.

1. Length overall (L.O.A) = 184.80m
2. Length between perpendiculars (L_{pp}) = 174.00m
3. ^{Breadth}~~Depth~~ moulded = 22.90m
4. Depth moulded upto 1st deck at side = 14.40m
5. Draught design / scantling / freeboard = 10.45m
6. Bilge Radius = 3.0m
7. Camber at center of 1st deck = 0.45m
8. Forecastle sheer at F.P = 0.40m
9. Forecastle Camber = 0.0m

Frame Spacings

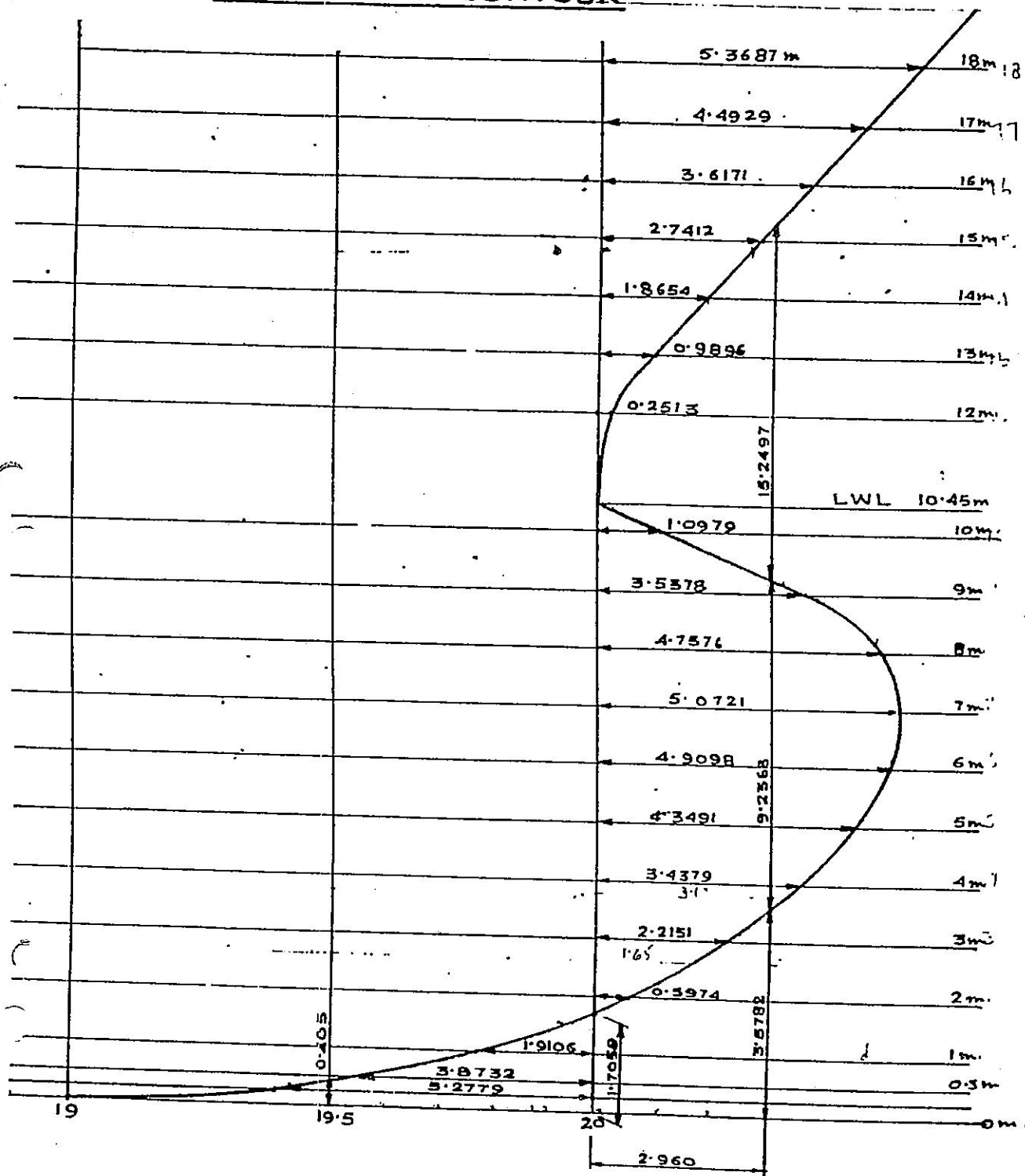
- a) upto fr 13 = 610 mm
- b) from fr 13 to fr 177 = 800 mm
- c) from fr 177 to fr 211 = 700 mm
- d) from fr 211 - = 610 mm

Fr 229 is 90 mm aft of forward perpendicular
Fr 0 is on after perpendicular

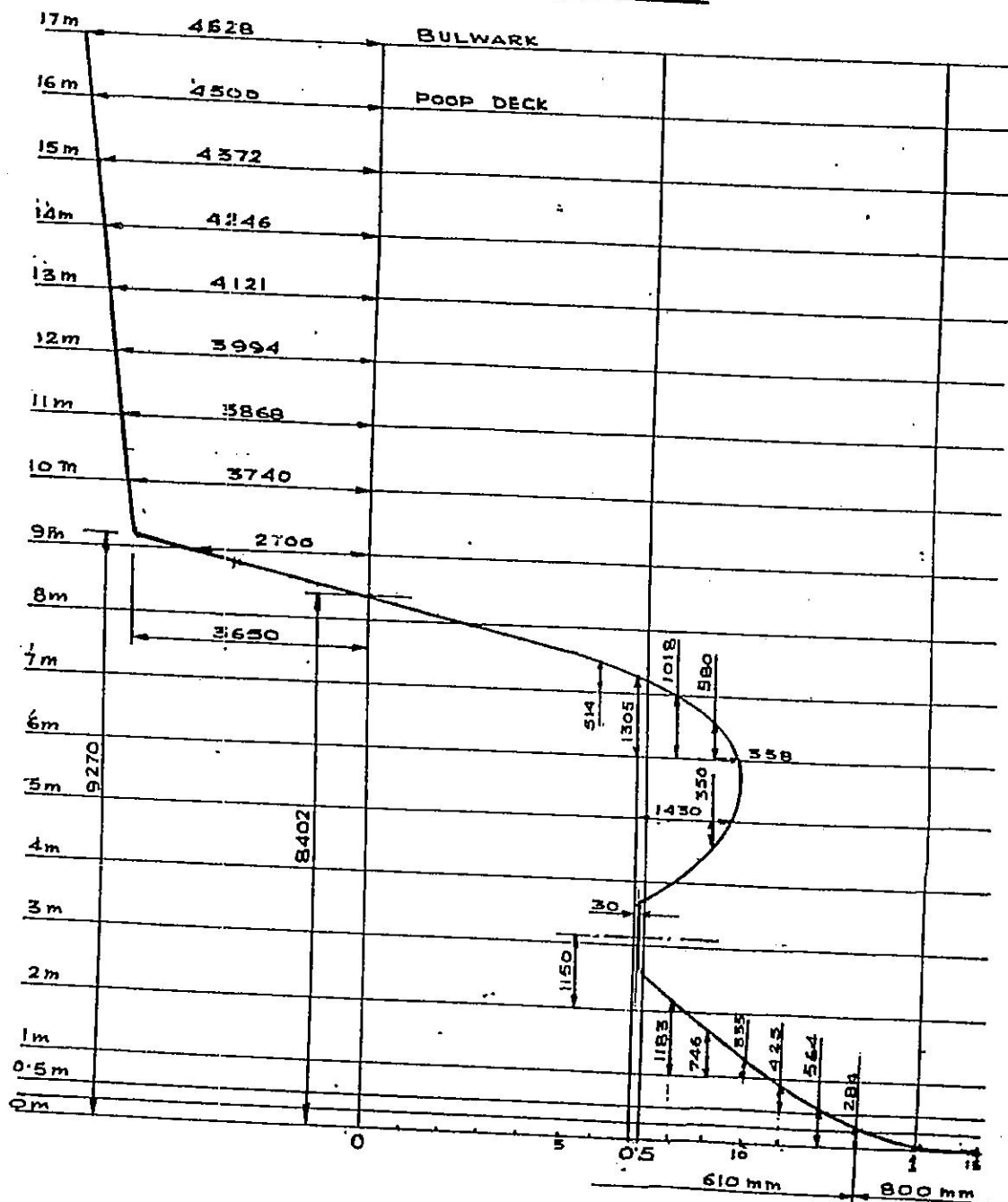
Extent of decks

- a) Poop deck is 16.0m above base line and extends from ~~at stern~~ ^{stem} to fr 49
- b) P'cle deck is 2.80m above upper deck at F.P and extends from fr. 207 to ~~at stern~~ ^{stem}
- c) Bulwark in aft region is 1.0m above poop deck and extends from ~~at stern~~ ^{stem} to fr 49.
- d) Bulwark in fwd region is 1.5m above p'cle deck and extends from fr 224 to ~~at stern~~ ^{stem}
- e) Platform deck is 1330m above base line and extends from ~~at stern~~ ^{stem} to fr 43

FORE BODY CONTOUR



STERN CONTOUR



PRINCIPAL PARTICULARS

LENGTH O.A. aft	184.80 m
LENGTH B.P.	174.00 m
BREADTH MLD.	22.90 m
DEPTH MLD. TO 1st. DECK	14.40 m
AT SIDE	
DRAUGHT DESIGN/SCANTLING/	
FREE BOARD	10.45 m
BILGE RADIUS	3.00 m
CAMBER AT CENTRE OF 1ST. DK.	0.45 m.

(1)

[illegible]

MOULDED OFFSET (mm) of 174.0 m BULK CARRIER

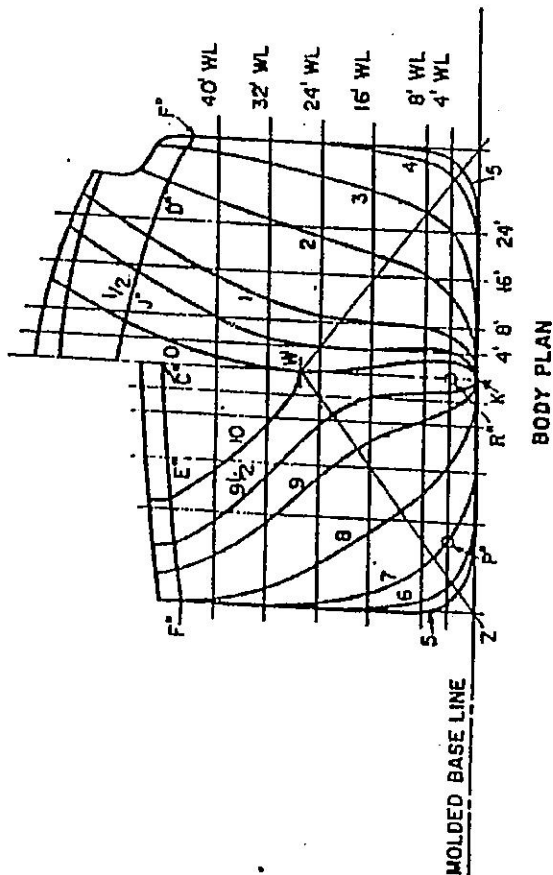
(2)

STNS	WLS	10.45 m.	12.0 m	14.0 m	16.0 m	18.0 m	20.0 m	Upper Deck	F'cle Deck	Ht. above baseline	
										Upper Dk	F'cle Dk
0		4943	6575	8202	9470			8500		14400	
0.25		6566	7930	9286	10324			9500			
0.5		7816	8937	10075	10879			10270			
1.0		9571	10320	11020	11388			11130			
1.5		10715	11110	11408	11450			11440			
2.0		11364	11448	11450				11450			
3.0		11450	11450								
4.0, 5.0, 6.0											
7.0											
8.0		11439				11450	11450				
8.5		10874	11146	11417							
9.0		8963	9566	10517							
9.5		5211	6085	7520	9027	10595		10785		14429	
9.75		2821	3470	4877	6555	8361	10269	7929	10141	14551	17401
10.0		-0	228	1596	3253	5052	6963	5457	7948	14658	17525
Stern Contour			4823	6644	8086			2255	4710	14796	17650
Half Breadth											
2.96 m for'd of F.P.					635	2361					
FR-234 (176%)											

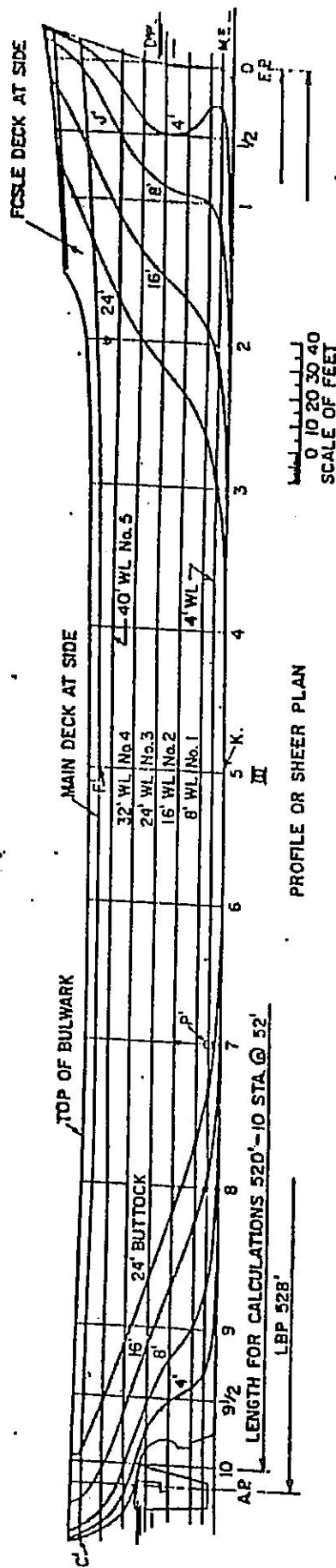
Bulwark in aft region is 1.000m above poop deck extends from aft extreme to Fr 49
 Poop deck is 16.000m above base and extends from aft extreme to Fr 49
 Bulwark in for'd region is 1.500m above F'cle deck and extends from Fr 224 to for'd most point
 F'cle deck is 2.800m above upper deck at F.P. and extends from Fr 207 to for'd extreme

PRINCIPAL DIMENSIONS

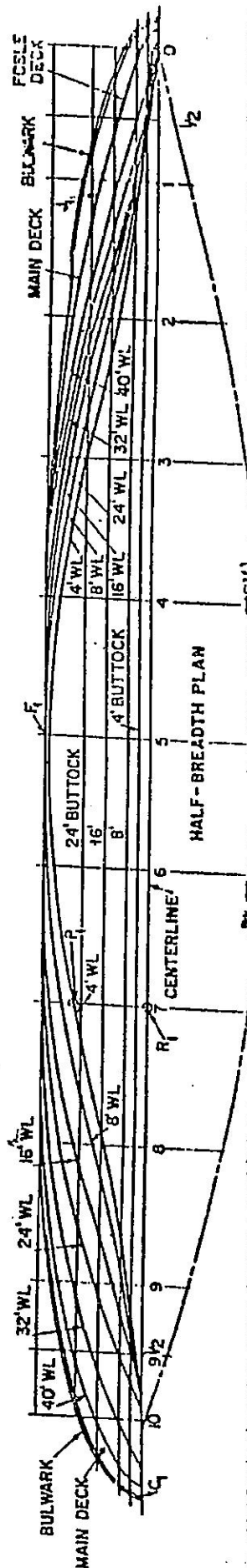
LENGTH OVER ALL 563'-7 3/4"
 LENGTH BETWEEN PERPENDICULARS 528'-0"
 LENGTH FOR CALCULATIONS 520'-0"
 BREADTH MOLDED 76'-0"
 44'-6"
 27'-0"
 29'-10"
 DRAFT, MOLDED, TO MAIN DECK AT SIDE (STA 5) 18,674 TONS
 DRAFT, MOLDED, TO DESIGNED WATERLINE (DWL) 21,093 TONS
 DRAFT, TO LOAD WATERLINE (LWL) 18,674 TONS
 DISPLACEMENT, MOLDED, SALT WATER - 29'-10" LWL 21,093 TONS
 DISPLACEMENT, LOADED, SALT WATER - 29'-10" LWL 21,093 TONS



BODY PLAN



PROFILE OR SHEER PLAN



HALF-BREADTH PLAN