

MODULUS OF SECTION

NAME:— LUNDGREN. A Nike.

Particulars of Vessel 458.42 x 59.00 x 33.50

DRAUGHT (CARGO) = 26.35

Height of Assumed Axis above Keel 15.0'

BELOW ASSUMED AXIS.								ABOVE ASSUMED AXIS.							
ITEM.	SCANTLING.	AREA.	h.	Ah.	Ah ² .	d.	Ad ² .	ITEM.	SCANTLING.	AREA.	h.	Ah.	Ah ² .	d.	Ad ² .
FLAT KEEL ...	40.0 x 1.0	40.00	15.0	600.0	9000	✓		SIDE SHELL							
BOTTOM SHELL ...	2 x 93.0 x .69	128.37	15.0	1925.2	28880	✓		Top Deck Stringer ...	147.0 x .65	95.54	5.83	557.1	3248	12.23	14338
" " ...								STRAKE BELOW SHEERSTRAKE	64.2 x .77	49.44	13.9	687.2	9553	5.35	135
BOTTOM SHELL								" " "							
CENTRE GIRDER PLATE ...	53.0 x .79	73.48	15.0	1102.2	16532	✓		SHEER STRAKE							
" " "								" " ANGLE ...	58.4 x .98	57.23	18.8	1076.0	20225	4.86	1291
BILGE								LONG. BHD							
" " BOTTOM ANGLES	22.5 x .69	63.83	13.1	836.2	10955	4.5	1293	" " PLATING...	77.0 x .41	31.57	3.21	101.3	325	6.42	1301
SIDE SHELL								LONG. BHD							
" " TOP ANGLES	137.0 x .65	89.05	5.4	480.9	2597	11.4	11571	2ND DECK STRINGER	96.0 x .39	37.45	10.1	378.2	3820	8.0	2397
LONG. BHD								LONG. BHD							
CENTRE STRAKE TANK TOP...	73.0 x .51	37.23	12.0	446.8	5362	6.08	1376	" " ANGLE ...	92.0 x .41	37.72	17.54	661.6	11605	7.67	2215
LONG. BHD								SIDE GIRDERS							
MARGIN PLATE ...	96.0 x .45	43.20	5.3	229.0	1159	8.0	2763	" " PLATING	2 x 30.0 x .39	23.40	0.70	16.4	11	✓	
LONG. BHD								SIDE GIRDERS							
" " ANGLES ...	20.0 x .41	8.20	.8	66	5	1.83	27	3RD DECK STRINGER	2 x 30.0 x .39	23.40	9.60	224.7	2157	✓	
CR. GDE								STRINGER ANGLE							
BOTTOM PLATING ...	66.2 x .25	16.55	12.2	201.9	2463	5.52	504	" " ANGLE ...	6.3 x 6.3 x .945	11.00	20.75	228.2	4736	✓	
CR. GDE TOP BAR								U.D.C. STRINGER							
BILGE PLATING ...	11 x 3.2 x .47.80	8.15	9.4	76.6	720	✓		" " PLATING	63.5 x .87	55.24	20.8	1149.0	23900	✓	
SIDE GDE								U.D.C. PLATING							
SIDE PLATING ...	66.2 x .49	32.44	12.2	395.8	4829	5.52	989	4TH DECK STRINGER	31.87 x .47	14.98	21.1	316.1	6669	✓	
SIDE GDE TOP BAR								" " "							
TANK TOP PLATING...	13 x 4 x .59.30	12.10	9.4	113.7	1069	✓		" " ANGLE ...	31.87 x .47	14.98	21.3	319.1	6796	✓	
WING GDE								" " PLATING	63.0 x .79	49.77	21.5	1070.0	23005	✓	
No. 1 Side Stringer Plate	2 x 30.0 x .39	23.40	6.8	159.1	1082	✓		SHEERSTRAKE							
" " " ANGLES								" " "							
No. 2 " " PLATE															
" " " ANGLES		576.00		6574.0	84653		18523	STRAKE BELOW SHEERSTRAKE		501.72		6784.9	116050		22897
No. 3 " " PLATE		2624		2660	2565		323	SHELL PLATING		765		3572	2646		122
TANK TOP								STRINGER DOUBLED							
" " " ANGLES	91.5 x .87	166.60	3.2	533.2	1706	✓		SIDE STRINGER PLATE	49.2 x 1.18	58.05	20.85	1210.0	25237		✓
TANK								DECK DOUBLED							
SIDE KEELSON PLATE	11.5 x 6.07	69.80	3.7	258.3	956	✓		" " ANGLES	55.1 x 1.18	65.02	21.6	1404.7	30334		✓
" " TOP ANGLES															
" " BOTTOM "															
TOTALS BELOW ASSUMED AXIS.		812.40		73655	87315		18525	TOTALS ABOVE ASSUMED AXIS.		624.79		9399.6	171621		22897
								" BELOW ASSUMED AXIS.		812.40		73655	87315		18525
								SUM OR DIFFERENCE		1437.19		20341	258936		41422
								Ad ² / ₁₂					3452		3452

262388

$\xi = 17.00$. (PER RESEARCH)

STANDARD $\frac{I}{y} = 17.00 \times 26.35 \times 59.0 = 26430$

SUMMARY.				
MOMENT OF INERTIA ABOUT ASSUMED AXIS	...	...	(1.)	262388
NEUTRAL AXIS ABOVE ASSUMED AXIS (x)	...	...	(2.)	1.4152
TOTAL AREA $\times x^2$	...	...	(3.)	2878
CORRECTED INERTIA (ONE SIDE ONLY)	=(1.)-(3.)	...	(4.)	259510
CORRECTED INERTIA (BOTH SIDES)	...	...		519020
VALUE OF "Y" AT KEEL GUNWALE BAR	...	...	OF	19.085
MODULUS OF SECTION AT GUNWALE	...	...		27195
VALUE OF "Y" AT KEEL	...	...		16.415
MODULUS OF SECTION AT KEEL	...	...

Initials _____

Date _____

N.B.—The assumed axis is to be taken below lowest deck. The Top Deck is the uppermost strength deck, and other decks are to be numbered from that deck.

35.50

15.00

30.5

14

19.0

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Lloyd's Register
Foundation

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