

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD

(COMPUTATION FOR ~~STEAMER~~, ~~SAILING SHIP~~, TANKER)

For LONDON OFFICE ONLY

Received **17 SEP 1957**

Index No.

Govt. Copy

Owners C11

Ship's Name "SOUTHERN CLIPPER"	Official Number 9814	Nationality and Port of Registry Swedish Malmö	Gross Tonnage 13069	Date of Build 1957	Port of Survey M A L M Ö
Moulded Dimensions: Length 525'-8" Breadth 71'-9½" Depth 40'-1 1/4"					Date of Survey During Construction
Freeboard Length To CR. of Rudder Stock 526'-6"					Surveyor's Signature L. Little
Moulded displacement at moulded draught = 85 per cent. of moulded depth 28960 tons					100AL Carrying Petr. in Bulk (Contemplated)
Coefficient of fineness for use with Tables 792 787 X					Particulars of Classification ✓

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 40'-1 1/4"	(a) Where D is greater than Table depth (D-Table depth) R = + 15.27	Moulded Breadth (B) 71'-9½"
Stringer plate 1'-07"	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = 5.09	Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{17.23}$
Wood Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam = 1'-7"
Depth for Freeboard (D) = 40.19		Difference + 1.77
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S}{L} \right) = \mathbf{-0.23}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed (See Sketch) 30265	110.59	110.59	8'-21 1/4"	✓	110.59
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed (See Sketch) 45.59	45.59	45.59	8'-0"	✓	45.59
" overhang aft ...					
" overhang forward ...					
F'cle enclosed (See Sketch) 29265	92.85	92.85	8'-0"	✓	92.85
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	249.03	249.03			249.03

Standard Height of Superstructure **7.5'**

" " R.Q.D. **✓**

Deduction for complete superstructure **42.0"**

Percentage covered $\frac{S}{L} = \mathbf{47.30}$

" " $\frac{S_1}{L} = \mathbf{47.30}$

" " $\frac{E}{L} = \mathbf{47.30}$

Percentage from Table, Line A. **TANKER 38.30**

(corrected for absence of forecastle (if required))

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = $.383 \times 42.0 = \mathbf{16.09}$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	62.65	1	✓	62.65	38.27	46.52	1	✓	46.52
1/8 L from A.P. ...	27.88	4	✓	111.52	5.28	5.39	4	✓	21.56
2/8 L " ...	6.89	2	✓	13.78	0	0	2	✓	0
Amidships ...	0	4	✓	0	0	0	4	✓	0
2/8 L from F.P. ...	13.78	2	✓	27.56	0	0	2	✓	0
1/8 L " ...	55.76	4	✓	223.04	-12.3	-12	4	✓	-48
F.P. ...	125.30	1	✓	125.30	75.83	75.83	1	✓	75.83
Total ...				563.85					144.39

Mean actual sheer aft = **DEFICIENT**

Mean standard sheer aft = **DEFICIENT**

Mean actual sheer forward = **DEFICIENT**

Mean standard sheer forward = **DEFICIENT**

Length of enclosed superstructure forward of amidships = **DEFICIENT**

" " aft of " = **SHEERS.**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{S}{2L} \right) = \mathbf{+11.97}$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck	11335
Summer Freeboard	1926
Moulded draught (d)	9409
Keel allowance	
Extreme draught	
Deduction for Tropical freeboard and addition for =	
Winter freeboard = $\frac{d}{4}$ inches =	196 mm
Addition for Winter North Atlantic Freeboard (if required) = $196 + 25.4 \times 5.27 =$	330 mm

Deduction for Fresh Water.

Displacement in salt water at summer load water line	Δ = 25970
Tons per inch immersion at summer load water line	T = 79.59
Deduction = $\frac{\Delta}{40 T}$ inches	8.16"
	= 207 mm

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient **1.467/1.36**

Depth Correction	15.27
Deduction for superstructures	16.09
Sheer correction	11.97
Round of Beam correction	.23
Correction for Thickness of Deck amidships	360
Other corrections, scantlings, etc.	

+	-
15.27	16.09
11.97	.23
360	27.24
27.24	52.32
- 25.08	
Summer Freeboard = 75.81 = 6'-3 3/4"	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc	203 mm	Tropical Fresh Water Freeboard	1926 mm
Fresh Water Line	207 mm	Fresh Water	1719 mm
Tropical Line	196 mm	Tropical	1730 mm
Winter Line below	196 mm	Winter	2122 mm
Winter North Atlantic Line	330 mm	Winter North Atlantic	2258 mm

Southern Clipper.

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

SHEER

POOP HEIGHT = 98.25" ✓
STAND. HS = 90.00 ✓
EXCESS = 8.25" ✓

allowable sheer 2/10
= 38.27 + 8.25 = 46.52"

allowable sheer 2/10 from 11.55
= 5.28 + 8.25 × (99.3 - 87.75) / 11.55
= 5.28 + .11 = 5.39"

DISPLACEMENT, TONS PER INCH:

Moulded draft			Total Displacement Tons $\delta = 1.025$	Tons/Inch Immersion $\delta = 1.025$
Percent of moulded depth	M/M	Ft-In.		
85	10390	34' - 1"	29070	81,30
80	9778	32' - 1"	27140	80,25
75	9167	30' - 1"	25200	79,15
70	8556	28' - 3/4"	23300	78,00

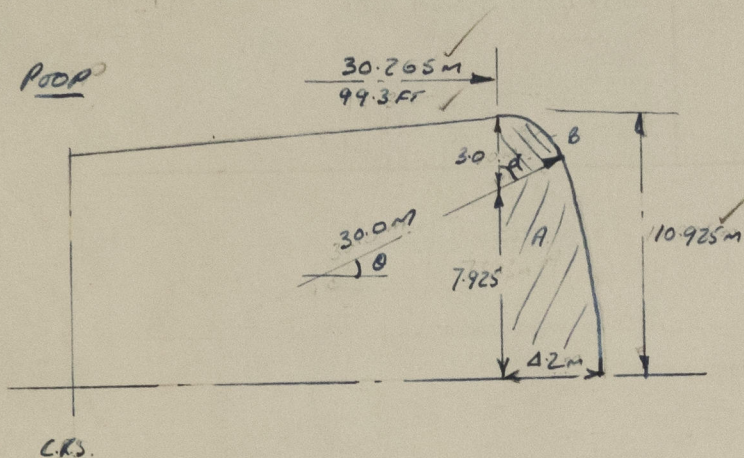
NOTE:- Deck line to be placed 915 mm from top of Steel deck produced.

FORECASTLE

EQUIV. LENGTH
= 29.265 - 2.84 × 6.7 / 7.4
= 29.265 - .965 = 28.3m

= 92.85 ft

POOP



Area A $\tan \theta = \frac{7.925}{30.0 - 4.2} = .30717 \therefore \theta = 17.075^\circ$

$$\therefore A = \pi \times 30.0^2 \times \frac{17.075}{360} - \frac{25.8 \times 7.925}{2} = 134.11 - 102.23 = 31.88 \text{ m}^2$$

Area B

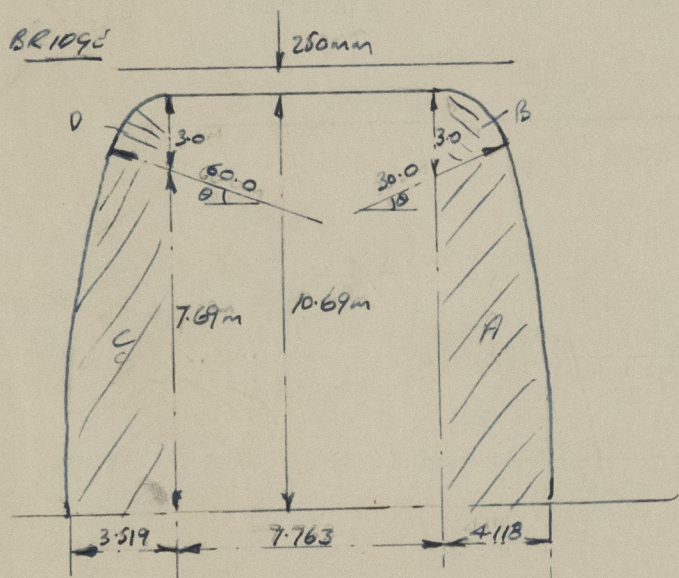
$$\alpha = 90.0 - 17.075 = 72.925^\circ$$

$$\therefore B = \pi \times 3.0^2 \times \frac{72.925}{360} = 5.78 \text{ m}^2$$

$$\therefore \text{Equivalent bhd} = 30.265 + \frac{31.88 + 5.78}{10.925}$$

$$= 30.265 + 3.443 = 33.708 \text{ m} = 110.59 \text{ ft}$$

BRIDGE



FORE END

Area A $\tan \theta = \frac{7.69}{30.0 - 4.118} = .2971 \therefore \theta = 16.55^\circ$

$$\therefore A = \pi \times 30.0^2 \times \frac{16.55}{360} - \frac{25.882 \times 7.69}{2} = 129.98 - 99.52 = 30.46 \text{ m}^2$$

Area B $\alpha = 90.0 - 16.55 = 73.45$

$$\therefore B = \pi \times 3.0^2 \times \frac{73.45}{360} = 5.77 \text{ m}^2$$

$$\text{EQUIV. BHD} = \frac{30.46 + 5.77}{10.69} = 3.389 \text{ m}$$

AFT END

Area C $\tan \theta = \frac{7.69}{60.0 - 3.519} = .1362 \therefore \theta = 7.75^\circ$

$$\therefore C = \pi \times 60.0^2 \times \frac{7.75}{360} - \frac{56.481 \times 7.69}{2} = 243.47 - 217.17 = 26.30 \text{ m}^2$$

Area D $\alpha = 90.0 - 7.75 = 82.25$

$$\therefore D = \pi \times 3.0^2 \times \frac{82.25}{360} = 6.460 \text{ m}^2$$

$$\therefore \text{EQUIV. BHD} = \frac{26.30 + 6.46}{10.69} = 3.065 \text{ m}$$

EQUIV. BRIDGE

$$\frac{(7.763 + 3.389 + 3.069) \times 10.69}{14.221} = 13.896 \text{ m}$$

$$= 45.59 \text{ ft}$$

Trade of ship

All Seas.

Names of sister ships

Builder's name and yard number

Kockums Mek. Verkstads AB, Malmö, Yard No. 394.

Owners

Rederi AB Clipper, Malmö

Fee f To be charged with F.E.

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)
Midship Section, Profile and Decks and 2 off Freeboard Particular sheets.

check
Poop

$$\begin{aligned} \text{Length at side} &= 30269. \\ &+ 2000 \\ &+ \frac{2}{3} \times 2200 = 1467 \end{aligned}$$

$$33736 = 110.68$$

(1" longer)

Bridge

$$\begin{aligned} \text{Length at side} &= 7763 \\ &+ 2250 \\ &+ 2000 \\ &+ \frac{2}{3} \times 1269 = 1412 \\ &+ \frac{2}{3} \times 2118 = 14271 \end{aligned}$$

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