

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name S.S. "HALVARD BRATT" HANS.	Official Number 7621	Nationality and Port of Registry SWEDISH GERMAN GOTHENBURG. HAMBURG.	Gross Tonnage 1023.	Date of Build 1921.	Port of Survey LONDON.
Moulded Dimensions: Length 224.20' Breadth 33.5 1/2" Depth 16.0 1/2"					Date of Survey 4th & 6th APRIL 1942.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1325 tons					Surveyor's Signature Alex. M. Jenkins
Coefficient of fineness for use with Tables .796					Particulars of Classification EXAMINED L.R. 3, 4.

Depth for Freeboard (D). Moulded depth ... 16.0 1/2" Stringer plate ... 3/8" Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 16.07	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R = (16.07 - 14.94) \times 1.725 = +1.95"$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	Round of Beam correction. Moulded Breadth (B) 33.5 1/2" Standard Round of Beam = $\frac{B \times 12}{50} = 8.03$ Ship's Round of Beam = 0.8 1/2" Difference .03 Restricted to Correction = $\frac{\text{Diff.}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.03}{4} \times .5862 = \text{Nil.}$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	14.00	14.00	7.0	✓	14.00
„ overhang ...	0				
R.Q.D. enclosed ...	✓				
„ overhang ...	✓				
Bridge enclosed ...	59.3	53.32	7.0	✓	53.32
„ overhang aft ...	0				
„ overhang forward ...	✓				
F'cle enclosed ...	25.21	15.00	7.0	✓	15.00
„ overhang ...	3.0	1.50	12.0	✓	1.50
Trunk aft ...	✓				
„ forward ...	✓				
Tonnage opening aft ...	✓				
„ „ forward ...	✓				
Total ...	101.83	94.11			94.11

Standard Height of Superstructure **6.00'**
 „ „ R.Q.D. **28.42'**
 Deduction for complete superstructure
 Percentage covered $\frac{S}{L} = 45.42$
 „ „ $\frac{S_1}{L} = 41.98$
 „ „ $\frac{E}{L} = 41.98$
 Percentage from Table, Line A. ✓
 (corrected for absence of forecastle (if required)) ✓
 Percentage from Table, Line B. **29.18**
 (corrected for absence of forecastle (if required)) ✓
 Interpolation for bridge less than 2L (if required) ✓
 Deduction = **28.42 x .2918 = -8.29"**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	32.42	1		32.42	26"	26	1		26
1/4 L from A.P. ...	14.425	4		57.70	11"	11	4		44
1/2 L ...	3.57	2		7.14	3"	3	2		6
Amidships ...	-	4		-	0	-	4		-
3/4 L from F.P. ...	7.13	2		14.26	11	11	2		22
1/4 L ...	28.855	4		115.42	34"	34	4		136
F.P. ...	64.84	1		64.84	82"	82	1		82
Total ...				291.78					316

Mean actual sheer aft = **> 75%**
 Mean standard sheer aft =
 Mean actual sheer forward = **Excess**
 Mean standard sheer forward =
 Length of enclosed superstructure forward of amidships = **.98**
 „ „ aft of amidships = **> .1**
 Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{2422(.75 - .2271)}{18} = -5.29$
 If limited on account of midship superstructure. **.70 x .198 = .139**
 If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 16.07 Summer freeboard = 1.89 Moulded draught (d) = 14.18 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.54 = 90 mm Addition for Winter North Atlantic Freeboard (if required) = 3.54 + 2 = 5.54 = 140 mm	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 12462$ Tons per inch immersion at summer load water line $T = 16$ Deduction = $\frac{\Delta}{40T}$ inches = 384 = 98 mm $= 33 1/4"$	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient .796 + .68 = 1.476 Depth Correction ... 1.95 Deduction for superstructures ... 8.29 Sheer correction69 Round of Beam correction ... Correction for Thickness of Deck amidships ... Other corrections, scantlings, etc. ... Summer Freeboard = 22.71
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:-

Tropical Fresh Water Line above Centre of Disc ...	188 mm	Tropical Fresh Water Freeboard ...	389
Fresh Water Line " " ...	98	Fresh Water " " ...	479
Tropical Line " " ...	90	Tropical " " ...	487
Winter Line below " " ...	90	Winter " " ...	667
Winter North Atlantic Line " " ...	140	Winter North Atlantic " " ...	717

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Ship's Name S. S. "HALVARD BRATT" HANS.	Official Number 7621.	Nationality and Port of Registry SWEDISH GERMAN GOTHENBURG. HAMBURG.	Gross Tonnage 1023.	Date of Build 1921.	Port of Survey LONDON.
Moulded Dimensions: Length 223-1" Breadth 33'-5 1/2" Depth 16'-0 1/2"					Date of Survey 4th & 6th APRIL 1942.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1325 tons					Surveyor's Signature Alex. M. Jenkins
Coefficient of fineness for use with Tables .796					Particulars of Classification EXAMINED L.R. 3, 41.

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 16'-0 1/2"	(a) Where D is greater than Table depth (D - Table depth) R = $(16.07 - 14.94) \times 1.725 = +1.95"$	Moulded Breadth (B) 33'-5 1/2"
Stringer plate ... 3/8"	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.13"	Standard Round of Beam = $\frac{B \times 12}{50} = 8.03$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam = 0'-8 1/2"
Depth for Freeboard (D) = 16.07		Difference = .03
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.03}{4} \times .5862 = \text{Nil.}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	14.00	14.00	7'-0"	✓	14.00
" overhang ...	0				
R.Q.D. enclosed ...	✓				
" overhang ...	✓				
Bridge enclosed ...	59'-3"	53.32	7'-0"	✓	53.32
" overhang aft ...	0				
" overhang forward ...	✓	.29'			.29
F'cle enclosed ...	25'-0"	15.00	7'-0"	✓	15.00
" overhang ...	3'-0"	1.50	+2' Cheating		1.50
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" " forward ...	✓				
Total ...	101.83	94.11			94.11

Standard Height of Superstructure **6.00'**

" " R.Q.D. **✓**

Deduction for complete superstructure **28.42**

Percentage covered $\frac{S}{L} = 45.42$

" " $\frac{S_1}{L} = 41.98$

" " $\frac{E}{L} = 41.98$

Percentage from Table, Line A. **✓**

(corrected for absence of forecastle (if required)) **✓**

Percentage from Table, Line B. **29.18**

(corrected for absence of forecastle (if required)) **✓**

Interpolation for bridge less than 2L (if required) **✓**

Deduction = **28.42 x .2918 = -8.29**

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	32.42	1	32.42	26"	26	1	26
1/4 L from A.P. ...	14.425	4	57.70	11"	11	4	44
1/2 L " ...	3.57	2	7.14	3"	3	2	6
Amidships ...	-	4	-	0	-	4	-
3/4 L from F.P. ...	7.13	2	14.26	11	11	2	22
1/4 L " ...	28.855	4	115.42	34"	34	4	136
F.P. ...	64.84	1	64.84	82"	82	1	82
Total ...			291.78				316

Mean actual sheer aft = **> 75%**

Mean standard sheer aft

Mean actual sheer forward = **Excess**

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **.98**

L. aft of " = **> .1**

Alt. Sheers

Standard " aft of

32.42 1 32.42 26 26

14.425 4 43.275 11 33

3.57 2 10.71 3 9

86.405 68

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{2422(7.75 - .2271)}{18} = .5229$

If limited on account of midship superstructure. $70 \times \frac{.198}{200} = .69$

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
Depth to Freeboard Deck = 16.07 Ft.	$\Delta = 2462$	796 + 68 = 1476
Summer freeboard = 1.89	Tons per inch immersion at summer load water line	1.36
Moulded draught (d) = 14.18	T = 16	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.54 = 90 m/m	Deduction = $\frac{\Delta}{40 T}$ inches = 384 = 98 m/m	
Addition for Winter North Atlantic Freeboard (if required) = 3.54 + 2 = 5.54 = 140 m/m	= 33 3/4"	
		Depth Correction ... 1.95
		Deduction for superstructures ... 8.29
		Sheer correction69
		Round of Beam correction ... 0
		Correction for Thickness of Deck amidships ... 0
		Other corrections, scantlings, etc. ... 0
		Summer Freeboard = 22.71

D amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-	57 m/m
Fresh Water Line above Centre of Disc	188 m/m
er Line	98
ine	90
ie below	90
orth Atlantic Line	140
Tropical Fresh Water Freeboard	479
Fresh Water	487
Tropical	557
Winter	577
Winter North Atlantic	577

