

R.N. AIR 3A
36773.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index. No.
(For London Office only).36824
7th 4511.

13 MAY 1942

Ship's Name "R.N. AIR 2A"	Official Number	Nationality and Port of Registry BRITISH	Gross Tonnage 257.23	Date of Build 1941/42	Port of Survey NORTHWICH (LIVERPOOL OFFICE)
Moulded Dimensions: Length 121.67' 120' 0" <i>To centre of rudder stock</i>	Breadth 24' 0"	Depth 9' 0"	Moulded displacement at moulded draught = 85 per cent. of moulded depth 424 tons	Surveyor's Signature W. Baylan	Date of Survey During Construction
Coefficient of fineness for use with Tables .68.57 (Actual .664)				Particulars of Classification +100A.1. COASTING FOR HARBOUR SERVICES.	

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 9' 0"	(a) Where D is greater than Table depth (D - Table depth) R = (9.03 - 8.11) x .936 = +.86"	Moulded Breadth (B) 24' 0"
Stringer plate ... 3/8" THICK	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ 5.76
Sheathing on exposed deck NONE	If restricted by superstructures	Ship's Round of Beam = 6"
T $\left(\frac{L-S}{L}\right) =$		Difference .24"
Depth for Freeboard (D) = 9.03		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.24}{4} \times .4216 = .03"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S _i)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	50.64	50.87	7.0	✓	50.87	Standard Height of Superstructure 6.00'
„ overhang ...	NIL					„ „ R.Q.D. ✓
R.Q.D. enclosed ...	7					Deduction for complete superstructure 18.17'
„ overhang ...						Percentage covered $\frac{S}{L} =$ 57.84
Bridge enclosed ...	7					„ „ $\frac{S_i}{L} =$ 57.84
„ overhang aft ...						„ „ $\frac{E}{L} =$ 57.84
„ overhang forward ...	19.50	19.50	6.25	✓	19.50	Percentage from Table, Line A. 42.98
F'cle enclosed ...	19.50	19.50	6.25	✓	19.50	(corrected for absence of forecastle (if required)) ✓
„ overhang ...	NIL					Percentage from Table, Line B. ✓
Trunk aft ...	7					(corrected for absence of forecastle (if required)) ✓
„ forward ...						Interpolation for bridge less than .2L (if required) ✓
Tonnage opening aft ...						Deduction = 18.17 x .4298 = -7.81'
„ „ forward ...						
Total ...	70.37	70.37			70.37	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	22.17	1	22.17	22'	22	1	22.0			Mean actual sheer aft = deficient but > 75%
1/2 L from A.P. ...	9.865	4	39.46	10'	10	4	40.0			Mean actual sheer forward = Excess
3/4 L „ ...	2.44	2	4.88	2 1/2'	2 1/2	2	5.0			Mean standard sheer forward
Amidships ...	-	4	-	-	-	4	-			Length of enclosed superstructure forward of amidships = Nil
3/4 L from F.P. ...	4.875	2	9.75	5'	5	2	10.0			„ „ aft of „ = .018
1/2 L „ ...	19.73	4	78.92	20'	20	4	80.0			
F.P. ...	44.33	1	44.33	46'	46	1	46.0			
Total ...			199.51				203.0			

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{3.49}{18} = .19"$ but limited to **-.01"**
 If limited on account of midship superstructure. $.09 \times \frac{.018}{.1} = -.01"$
 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)	12.17
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient None	12.17
Depth to Freeboard Deck = 9.03	$\Delta =$ 4.193 ✓ 4.88	Depth Correction86	
Summer freeboard = .44	Tons per inch immersion at summer load water line	Deduction for superstructures ... 7.81	
Moulded draught (d) = 8.59	T = 4.193 ✓ 5.79	Sheer correction01	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 2.15 = 2 1/4"	Deduction = $\frac{\Delta}{40 T}$ inches = 2.11	Round of Beam correction03	
Addition for Winter North Atlantic Freeboard (if required) = ✓	2"	Correction for Thickness of Deck amidships ... -	
		Other corrections, scantlings, etc. ... -	
		Summer Freeboard = 5.18	

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

Tropical Fresh Water Line above Centre of Disc ...	4 1/4"
Fresh Water Line „ „ ...	2"
Tropical Line „ „ ...	2 1/4"
Winter Line below „ „ ...	2 1/4"
Winter North Atlantic Line „ „ Not assigned ...	✓

Tropical Fresh Water Freeboard ...	0' - 5 1/4"
Fresh Water „ „ ...	0' - 1"
Tropical „ „ ...	0' - 3 1/4"
Winter „ „ ...	0' - 3"
Winter North Atlantic „ „ ...	0' - 7 1/2"