

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index. No. 37758
(For London Office only).

10 OCT 1944

RESCUE

(TUG)

Ship's Name **"ENIGMA"** Official Number **NONE** Nationality and Port of Registry **BRITISH** Gross Tonnage **NONE** Date of Build **1944**

Port of Survey **Hull.**

Date of Survey **During construction**

Surveyor's Signature **J. Macleod**

Particulars of Classification ***100 A-1.**
"FOR TOWING SERVICES"
(CONTEMPLATED)

Moulded Dimensions: Length **160'-0"** Breadth **34'-6"** Depth **16'-6"**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **1240** tons

Coefficient of fineness for use with Tables **.68 (.56 actual)** **T = 10.2**

| Depth for Freeboard (D). | | Depth correction. | | Round of Beam correction. | |
|------------------------------------|-------|---|--|--|--------------------------------------|
| Moulded depth | 16.50 | (a) Where D is greater than Table depth (D - Table depth) R = $(16.53 - 10.67) \times 1.23 = +7.21$ | | Moulded Breadth (B) | 34.5' |
| Stringer plate | .36 | 5.86 | | Standard Round of Beam = $\frac{B \times 12}{50} =$ | 8.28 |
| Sheathing on exposed deck | | (b) Where D is less than Table depth (if allowed) (Table depth - D) R = | | Ship's Round of Beam = | 10" |
| $T \left(\frac{L-S}{L} \right) =$ | NONE | | | Difference | 1.72 |
| Depth for Freeboard (D) = | 16.53 | If restricted by superstructures | | Restricted to | |
| | | | | Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) =$ | $\frac{1.72}{4} \times .5729 = -.25$ |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|-------------------------|-------------------------|--|--------|-------------------|----------------------|
| Poop enclosed ... | | | | | |
| " overhang ... | | | | | |
| R.Q.D. enclosed ... | | | | | |
| " overhang ... | | | | | |
| Bridge enclosed ... | | | | | |
| " overhang aft ... | | | | | |
| " overhang forward ... | | | | | |
| Fore enclosed ... | 68'-4" | 68.33 | 7'-3" | - | 68.33 |
| " overhang ... | | | | | |
| Trunk aft ... | | | | | |
| " forward ... | | | | | |
| Tonnage opening aft ... | | | | | |
| " " forward ... | | | | | |
| Total ... | 68.33 | 68.33 | | | 68.33 |

Standard Height of Superstructure **6'-0"**

" " R.Q.D. **✓**

Deduction for complete superstructure **22'-0"**

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

" " $\frac{S_1}{L} =$ **42.71**

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

Percentage from Table, Line A. **25.80**

(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 = **22' x .258 = -5'-68**

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product | Mean actual sheer aft = | Mean standard sheer aft = | |
|-------------------------------|-------------------|---|---|----------|-----------------|--------------------|---|---|---------|--|-----------------------------|-------------------------------|
| A.P. ... | 26.00 ✓ | 1 | | 26.00 ✓ | 42 | 42 | 1 | | 42 | } sum ✓ | | |
| $\frac{1}{8}$ L from A.P. ... | 11.57 ✓ | 4 | | 46.28 ✓ | 20 | 20 | 4 | | 80 | | Mean actual sheer forward = | Mean standard sheer forward = |
| $\frac{2}{8}$ L " ... | 2.86 ✓ | 2 | | 5.72 ✓ | 5 | 5 | 2 | | 10 | | | |
| Amidships ... | - | 4 | | - | ON PAGE 1. | - | 4 | | - | | | |
| $\frac{2}{8}$ L from F.P. ... | 5.72 ✓ | 2 | | 11.44 ✓ | 9 | 9 | 2 | | 18 | Length of enclosed superstructure forward of amidships = | .027 ✓ | |
| $\frac{1}{8}$ L " ... | 23.14 ✓ | 4 | | 92.56 ✓ | 34 | 34 | 4 | | 136 | " " aft of " = | NX. ✓ | |
| F.P. ... | 52.00 ✓ | 1 | | 52.00 ✓ | 71 | 71 | 1 | | 71 | | | |
| Total ... | | | | 234.00 ✓ | | | | | 357 | | | |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{123(.75 - .2135)}{18 \cdot .5365} = -3.67 \checkmark$

If limited on account of midship superstructure. $3' - 6\frac{3}{4}" = -5.0 \checkmark$

If limited to maximum allowance of $1\frac{1}{2}$ 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 | NX |
| Depth to Freeboard Deck = | 16.53 | $\Delta =$ | 1381 | Depth Correction ... | 7.21 |
| Summer freeboard = | 1.48 | Tons per inch immersion at summer load water line | | Deduction for superstructures ... | - 5.68 |
| Moulded draught (d) = | 15.05 | T = | 10.52 | Sheer correction ... | - .50 |
| Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = | 3.76 = $3\frac{3}{4}$ | Deduction = $\frac{\Delta}{40T}$ inches | $\frac{1381}{40 \times 10.52} = 3.28 = 3\frac{1}{4}$ | Round of Beam correction ... | - .25 |
| Addition for Winter North Atlantic Freeboard (if required) = | 5.34 | Mid Draught | 14'-4" | Correction for Thickness of Deck amidships ... | - |
| | | Ext. Disp. | 1293 | Other corrections, scantlings, etc. ... | - |
| | | T.P.I. | 10.5 | | |
| | | | 1170 | | |
| | | | 10.0 | | |
| | | | 10.52 | | |
| | | | 9.7 | | |
| | | | | Summer Freeboard = | 17.68 |

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

| | | | |
|--|-------------------|------------------------------------|-----------------------|
| Tropical Fresh Water Line above Centre of Disc ... | 7' | Tropical Fresh Water Freeboard ... | 1'-5 $\frac{3}{4}$ " |
| Fresh Water Line " " ... | 3 $\frac{1}{4}$ " | Fresh Water " " ... | 0'-10 $\frac{3}{4}$ " |
| Tropical Line " " ... | 3 $\frac{3}{4}$ " | Tropical " " ... | 1'-2 $\frac{1}{2}$ " |
| Winter Line below " " ... | 3 $\frac{3}{4}$ " | Winter " " ... | 1'-2" |
| Winter North Atlantic Line " " ... | 5 $\frac{3}{4}$ " | Winter North Atlantic " " ... | 1'-11 $\frac{1}{2}$ " |

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.

British
100' 0"
32' 8"
16' 0"
12' 0"
T: 10.2

10' 0"

NONE

Trade of ship FOR TOWING SERVICES.

Names of sister ships "ENTICER" - "ENVY".

Builder's name and yard number COCHRANE & SONS LTD YARD NO. 1287.

Owners THE ADMIRALTY.

Fee £ TO BE CHARGED WITH FIRST ENTRY.



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