Rpt. C.11 (Comp.).

Empire Makoro 37245

R.T. COPY.

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Lloyd's Register of Shipping.

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28 DEC 1943

SURVEYS FOR FREEBOARD.

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

Ship's Name	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build
"EMPIRE CHARLES"	169354	BRITISH. HULL.	243·87	1944

Moulded Dimensions: Length 105'-0" Breadth 26'-6" Depth 13'-6"

Moulded displacement at moulded draught = 85 per cent. of moulded depth 523. tons

Coefficient of fineness for use with Tables ·68 (·573 actual) 5·35 T.P.I.

Port of Survey Hull.

Date of Survey While building

Surveyor's Signature J. K. Macleod

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

Depth for Freeboard (D).

Moulded depth	13·5'
Stringer plate ... ·30	·03
Sheathing on exposed deck $T\left(\frac{L-S}{L}\right)$ = NONE	
Depth for Freeboard (D) =	13·53

Depth correction.

(a) Where D is greater than Table depth (D—Table depth) R =
(13·53 − 7·00 / 6·53) × ·808 = + 5·28

(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)	26·5'
Standard Round of Beam = $\frac{B \times 12}{50}$ =	6·36
Ship's Round of Beam =	7½"
Difference	1·14
Restricted to ✓	
Correction = $\frac{\text{Diff}^{e}}{4} \times \left(1-\frac{S_1}{L}\right)$ =	$\frac{1·14}{4}$ = −·28

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					
F'cle enclosed					
„ overhang					
Trunk aft					
„ forward					
Tonnage opening aft ...					
„ „ forward					
Total					

Flush deck. No superstructures.

Standard Height of Superstructure

„ „ R.Q.D.

Deduction for complete superstructure

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

„ „ $\frac{S_1}{L}$ = }

„ „ $\frac{E}{L}$ = }

Percentage from Table, Line A. (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 = Nil.

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	20·50	1	20·50	18"	18	1	18·0
$\frac{1}{6}$L from A.P. ...	9·12	4	36·48	8"	8	4	32·0
$\frac{2}{6}$L „ ...	2·255	2	4·51	1¾"	1¾	2	3·5
Amidships ...	—	4	—	0	—	4	—
$\frac{2}{6}$L from F.P. ...	4·51	2	9·02	9¾"	9¾	2	19·5
$\frac{1}{6}$L „ ...	18·24	4	72·96	35½"	35½	4	142·0
F.P.	41·00	1	41·00	81½"	81½	1	81·5
Total ...			184·47				296·5

Mean actual sheer aft / Mean standard sheer aft = >·75

Mean actual sheer forward / Mean standard sheer forward = Even

Length of enclosed superstructure / L forward of amidships = } Nil.

„ „ aft of „ = }

Correction = $\frac{\text{Difference between sums of products}}{18}\left(\cdot75-\frac{S}{2L}\right)$ = 112·03/18 × ·75 = − 4·67

If limited on account of midship superstructure. No. Flush deck.

If limited to maximum allowance of 1½ ins. per 100 ft. 1·58

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

	Ft.
Depth to Freeboard Deck =	13·53
Summer freeboard =	1·29
Moulded draught (d) =	12·24

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3·06 = 3"

Addition for Winter North Atlantic Freeboard (if required) = 5"

Deduction for Fresh Water.

Displacement in salt water at summer load water line

△ = 585

Tons per inch immersion at summer load water line

T = 5·47

Deduction = $\frac{\triangle}{40\,T}$ inches = 2·67 = 2¾"

MLD DRAFT.	EXT. DISP.	T.P.I.
12'-6"	595	5·50
11'-6"	529	5·35
9'-6"	407	4·90

TABULAR FREEBOARD

10·50 + 1·58 corrected for Flush Deck (~~if required~~) 12·08

Correction for coefficient Nil. 12·08

	+	−	
Depth Correction	5·28	—	
Deduction for superstructures	—	—	
Sheer correction	—	1·58	8-B.
Round of Beam correction	—	·28	28.12.43
Correction for Thickness of Deck amidships ...	—	—	
Other corrections, scantlings, etc.	—	—	
	5·28	1·86	+3·42

Summer Freeboard = 15·50

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

Tropical Fresh Water Line above Centre of Disc	5¾"	Tropical Fresh Water Freeboard	1'-3½"
Fresh Water Line „ „	2¾"	Fresh Water „	0'-9¾"
Tropical Line „ „	3"	Tropical „	1'-0¾"
Winter Line below „	8"	Winter „	1'-0½"
Winter North Atlantic Line „ „	5"	Winter North Atlantic „	1'-8½"

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21/1/44

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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.

(OUT)

Trade of ship FOR TOWING SERVICES.

Names of sister ships "EMPIRE MAISIE" - "EMPIRE MASCOT".

Builder's name and yard number HENRY SCARR LTD. YARD No 432.

Owners THE MINISTRY OF WAR TRANSPORT.

Fee £ TO BE CHARGED WITH FIRST ENTRY.

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