TIMBER.

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build
LORD COCHRANE ex ARCWEAR.	163432	BRITISH LONDON	4157.	1934

Port of Survey Sunderland

Date of Survey While building

Surveyor's Signature _____

Particulars of Classification ✠ 100 A.I.

Moulded Dimensions: Length 360·0 Breadth 57·25 Depth 26·75

Moulded displacement at moulded draught = 85 per cent. of moulded depth 9401 tons

Coefficient of fineness for use with Tables ·702

Depth for Freeboard (D).

Moulded depth ... ... 26·75
Stringer plate ... ... ·39" ·03
Sheathing on exposed deck $T\left(\dfrac{L-S}{L}\right) =$

Depth for Freeboard (D) = 26·78

Depth correction.

(a) Where D is greater than Table depth
(D—Table depth) R =
$(26·78 - 24·00)\ 2·769 = +7·70"$

(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) 57·25
Standard Round of Beam = $\dfrac{B \times 12}{50}$ = 13·74
Ship's Round of Beam = 14·00
Difference ·26
Restricted to
Correction = $\dfrac{\text{Diff}}{4} \times \left(1 - \dfrac{S_1}{L}\right)$ = $\dfrac{·26}{4} \times ·4863$ = $-·03"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	33·08	33·08	7·50		33·08
„ overhang			+·22 Sheathing		
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...	119·00	119·00	7·75		119·00
„ overhang aft ...	3·00	2·25			2·25
„ overhang forward					
F'cle enclosed	30·58	30·58	7·50		30·58
„ overhang ...					
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward					
Total	185·66	184·91			184·91

Standard Height of Superstructure 7·10
" " R.Q.D. ✓
Deduction for complete superstructure 39·33
Percentage covered $\dfrac{S}{L}$ = 51·57
" " $\dfrac{S_1}{L}$ = 51·37
" " $\dfrac{E}{L}$ = 51·37
Percentage from Table, Line A.
(corrected for absence of forecastle (if required))
Percentage from Table, ~~Line B.~~ Timber 70·10
(corrected for absence of forecastle (if required))
Interpolation for bridge less than ·2L (if required)

Deduction = $39·33 \times ·7010$ = $-27·57$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.		1				1	
⅙L from A.P. ...		4				4	
⅓L „		2				2	
Amidships ...		4				4	
⅔L from F.P. ...		2				2	
⅚L „		4				4	
F.P.		1				1	
Total							

Mean actual sheer aft / Mean standard sheer aft =

Mean actual sheer forward / Mean standard sheer forward =

$\dfrac{\text{Length of enclosed superstructure}}{L}$ forward of amidships = $> ·10$

„ „ aft of „ = $> ·10$

Correction = $\dfrac{\text{Difference between sums of products}}{18}\left(·75 - \dfrac{S}{2L}\right)$ = $-1·35$

If limited on account of midship superstructure.

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

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

Ft.
Depth to Freeboard Deck = 26·78
Summer freeboard = 3·26
Moulded draught (d) = 23·52

Deduction for Tropical freeboard ~~and addition for~~
Winter freeboard = $\dfrac{d}{4}$ inches = 5·88 = 6"

Addition for Winter North Atlantic Freeboard (if required) = 7·84 = 7¾"

Deduction for Fresh Water.

Displacement in salt water at summer load water line
Δ = 9800
Tons per inch immersion at summer load water line
T = 40·78
Deduction = $\dfrac{\Delta}{40\,T}$ inches
= 6·01
= 6"

TABULAR FREEBOARD corrected for Flush Deck (if required) 59·40

Correction for coefficient $\dfrac{·68 + ·702}{1·36}$ = $\dfrac{1·382}{1·360}$ 60·36

	+	−
Depth Correction	7·70	
Deduction for superstructures		27·57
Sheer correction		1·35
Round of Beam correction ...		·03
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc. ...		
	7·70 28·95	−21·25

Summer Freeboard = 39·11"

TIMBER SUMMER FREEBOARD amidships ~~from Centre of Disc to top of Deck Line, Wood,~~ Steel, Deck :— 3'-3"

TIMBER				TIMBER		
"	Tropical Fresh Water Line above Centre of Disc ...	25"		TIMBER Tropical Fresh Water Freeboard ...	2'-3"	
"	Fresh Water Line " ...	19"		" Fresh Water " ...	2'-9"	
"	Tropical Line " ...	19"		" Tropical " ...	2'-9"	
"	Winter Line ~~below~~ above " ...	5¼"		" Winter " ...	3'-10¾"	
"	Winter North Atlantic Line " ~~below~~ above " ...	13"		" Winter North Atlantic " ...		