



Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

2 - DEC 1952

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

Ship's Name WATFORD TRADER P E T R A D A N	Official Number ---	Nationality and Port of Registry LIBERIAN Danish Esbjerg MONROVIA	Gross Tonnage About 10665	Date of Build 1952 12	Port of Survey Gothenburg
Moulded Dimensions: Length 156.970 M. Breadth 19.51 M. Depth 11.730 Metres					Date of Survey Whilst building
Freeboard Length 157.275 Metres to Centre Line of Rudder Stock					Surveyor's Signature <i>Hammerling</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth 23570 M³					Particulars of Classification +1COA1 Carrying Petroleum in bulk
Coefficient of fineness for use with Tables .77					

Depth for Freeboard (D). Moulded depth 11.730 Stringer plate 21.7 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 11.751	Depth correction. (a) Where D is greater than Table depth (D—Table depth) R = 8.33(11.751 - 10.485)30 = + 316 (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) 19.51 M. Standard Round of Beam = $\frac{B \times 25}{50} =$ 390 mm Ship's Round of Beam = 475 mm. Difference 85 Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{85}{4} \times .5926 =$ -13%
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed EQUIV.	34.712	34.712	2440		34.712
» overhang					
R.Q.D. enclosed					
» overhang					
Bridge enclosed EQUIV.	11.518	11.518	2440		11.518
» overhang aft					
» overhang forward					
F'cle enclosed	17.840	17.840	2440		17.840
» overhang					
Trunk aft					
» forward					
Tonnage opening aft					
» » forward					
Total	64.070	64.070			64.070

Standard Height of Superstructure **2.290 m**» » R.Q.D. **—**Deduction for complete superstructure **1067 mm**

Percentage covered $\frac{S}{L} =$ **40.74** ✓
 » » $\frac{S_1}{L} =$ **40.74** ✓
 » » $\frac{E}{L} =$ **40.74** ✓

Percentage from Table, Line A. **TANKER 31.74** ✓
(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 = **1067 × .3174 = - 339 mm**

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	1564	1	1564	1016	1016	1	1016
1/6 L from A.P.	695	4	2780	91	91	4	364
2/6 L »	174	2	348	0	—	2	—
Amidships	—	4	—	0	—	4	—
2/6 L from F.P.	347	2	694	0	—	2	—
1/6 L »	1390	4	5560	555	555	4	2220
F.P.	3128	1	3128	2440	2440	1	2440
Total			14074				6040

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{8034}{18} (.75 - .2037) = + 244 \text{ mm}$ ✓
 If limited on account of midship superstructure. **—**

Mean actual sheer aft = **Deficient**
 Mean standard sheer aft = **Deficient**
 Mean actual sheer forward = **Deficient**
 Mean standard sheer forward = **Deficient**
 Length of enclosed superstructure forward of amidships = **Tanker**
 » » aft of » = **Tanker**

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.Depth to Freeboard Deck = **11.751**Summer freeboard = **2.675**Moulded draught (d) = **9.076**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{48}$ inches = **189 mm**

Addition for Winter North Atlantic Freeboard

(required) = **189 + 129 = 318 mm**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ **21462**

Tons per inch immersion at summer load water line

 $T =$ **67.73 tons/inch**Deduction = $\frac{\Delta}{40 T}$ inches**= 7.92"****= 201 mm.**

TABULAR FREEBOARD (corrected for Flush Deck (if required))

Correction for coefficient $\frac{.77 + .68}{1.36} = \frac{1.45}{1.36}$ Depth Correction **316**Deduction for superstructures **339**Sheer correction **244**Round of Beam correction **13**

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc.

Summer Freeboard = **2677**

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

Tropical Fresh Water Line above Centre of Disc	390 mm	15 1/4"	Tropical Fresh Water Freeboard	2385	7' 6"
Fresh Water Line	200	7 3/4"	Fresh Water	2475	8' 1 1/2"
Tropical Line	190	7 1/2"	Tropical	2485	8' 1 1/4"
Winter Line below	180	7 1/2"	Winter	2865	9' 4 3/4"
Winter North Atlantic Line	320	12 3/4"	Winter North Atlantic	2975	9' 10"

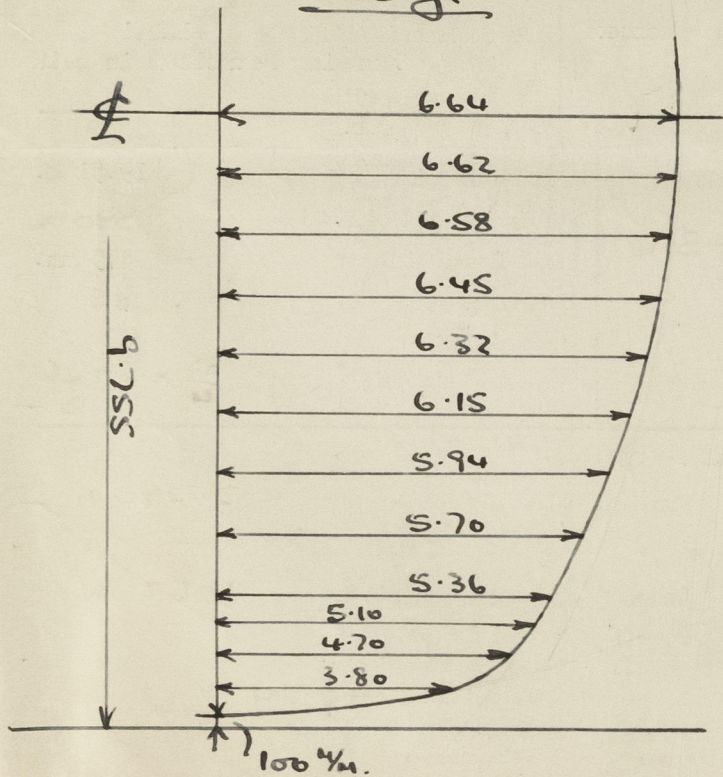
Waterford Trader.

PETRA DAN.

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.

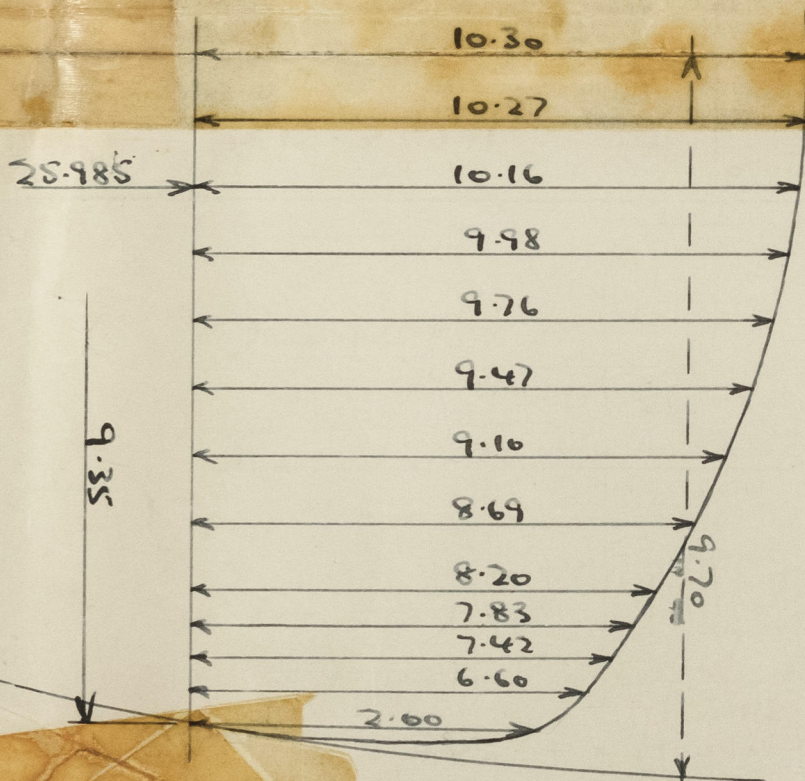
75 % of moulded depth	Displacement in salt water	= 20720 tons	à 1016 kgs.	Tons à 1016 kgs.	inch in salt water	67.35
85 % "	"	"	"	"	"	68.95
95 % "	"	"	"	"	"	70.30
100 % "	"	"	"	"	"	71.00

Bridge.



6.64	1	6.64
6.62	4	26.48
6.58	2	13.16
6.45	4	25.80
6.32	2	12.64
6.15	4	24.60
5.94	2	11.88
5.70	4	22.80
5.36	1 1/2	8.04
5.10	2	10.20
4.70	1	4.70
3.80	2	7.60
0	1/2	0

$$\checkmark \frac{174.54}{30} \times \frac{9.755}{9.755} \times 2 = 11.518 \text{ M}$$



10.30	1	10.30
10.27	4	41.08
10.16	2	20.32
9.98	4	39.92
9.76	2	19.52
9.47	4	37.88
9.10	2	18.20
8.69	4	34.76
8.20	1 1/2	12.30
7.83	2	15.70
7.42	1	7.42
6.60	2	13.20
2.60	1/2	1.30

$$\frac{271.60}{30} \times \frac{18.70}{19.40} = 8.727$$

$$\text{Equivalent length} = \frac{28.985}{34.712}$$

Trade of ship International, Tanker

Names of ~~ships~~ similar ships "Nerma Dan".

Builder's name and yard number A-B. Lindholmens Varv, Gothenburg, Yard No.1028.

Owners J. Lauritzen, Copenhagen.

Fee Kr. -----



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