

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. **34622 B**
(For London Office only.)

15 FEB 1935

Computation of Freeboard for *motor* Steamer, Sailing Ship, Tankerhaving *Poop, bridge and Forecastle*Port of Survey *Rotterdam*

(Type of Superstructures.)

Date of Survey *Building*

Ship's Name *M.V. "RAPANA"* Nationality and Port of Registry *Dutch Butch* Official Number *167247* Gross Tonnage *8017.4* Date of Build *1934-35*

Name of Surveyor *J. v. Heerwaarden*

Moulded Dimensions: Length *140.21 M* Breadth *17.98 M* Depth *10.363 M*
Moulded displacement at moulded draught = 85 per cent. of moulded depth *17620 M³* tons
Coefficient of fineness for use with Tables *.794*

Particulars of Classification *+100 A1 carrying petroleum in bulk contemplated.*

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	... 10.363	(a) Where D is greater than Table depth (D - Table depth) R = <i>833 (10.383 - 9.347) 30.0</i>		Moulded Breadth (B)	17.98 M
Stringer plate	... 20	= + 259 mm		Standard Round of Beam = $\frac{B \times 12}{50}$	360 mm
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	✓	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	✓	Ship's Round of Beam	360 mm
Depth for Freeboard (D) =	10.383	If restricted by superstructures	✓	Difference	Nil
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right)$	Nil

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	28.27	28.27	2.286	✓	28.27
" overhang					
R.Q.D. enclosed					
" overhang			2.286		
Bridge enclosed	14.33	14.33	2.286	2290	14.30
" overhang aft					
" overhang forward					
Fore enclosed	14.72	14.72	2.286	+ 64 mm wood	14.72
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	57.32	57.32			57.29

Standard Height of Superstructure *2290*

" " R.Q.D. ✓

Deduction for complete superstructure *1067*Percentage covered $\frac{S}{L} = 40.88\%$ " $\frac{S_1}{L} = 40.88\%$ " $\frac{E}{L} = 40.88\%$ Percentage from Table, Line A. Tanker *31.86%*
(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 x .3186 = - 340 mm*

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	1422	1	1422	1423	1423	1	1423
$\frac{1}{8}L$ from A.P.	632	4	2528	632	632	4	2528
$\frac{2}{8}L$ "	158	2	316	156	156	2	312
Amidships	✓	4	✓	✓	✓	4	✓
$\frac{3}{8}L$ from F.P.	316	2	632	311	311	2	622
$\frac{4}{8}L$ "	1263	4	5052	1266	1266	4	5064
F.P.	2844	1	2844	2846	2846	1	2846
Total			12794				12795

Mean actual sheer aft = *Standard*
Mean standard sheer aft =Mean actual sheer forward = *Standard*
Mean standard sheer forward =Length of enclosed superstructure forward of amidships = } *Tanker*
" " aft of " =Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1}{18} (.75 - \frac{2044}{2844}) = \frac{.5456}{18} = \text{Nil}$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *10.385*Summer freeboard = *2060*Moulded draught (d) = *8325*

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *17 cms*Addition for Winter North Atlantic Freeboard (if required) = *173 + 115 mm = 29 cms*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 16730 M^3$

Tons per inch immersion at summer load water line

T = *21.82*Deduction = $\frac{\Delta}{40T}$ inches= *19 cms*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{794 + .68}{1.36} = \frac{1474}{1360}$

Depth Correction ... 259

Deduction for superstructures ... 340

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ... 2

Other corrections, scantlings, etc. ...

261 340 - 79

Summer Freeboard = *2059*SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *wood*, Steel, Deck: -Tropical Fresh Water Line above Centre of Disc ... *14 1/4 36 cms*Fresh Water Line " " ... *7 1/2 19 "*Tropical Line " " ... *6 1/4 17 "*Winter Line below " " ... *6 3/4 17 "*Winter North Atlantic Line " " ... *11 1/2 29 "*Tropical Fresh Water Freeboard ... *5-6 1/4 170 "*Fresh Water " " ... *6-1 1/2 187 "*Tropical " " ... *6-2 1/4 189 "*Winter " " ... *7-3 1/4 223 "*Winter North Atlantic " " ... *7-8 1/2 235 "*

RAPANA

Particulars of fiddley, funnel and ventilator coamings:— Fiddley casing funnel and ventilators in efficient condition.
Motor room skylight all steel with steel flaps strongly constructed.
Gratings on fiddley casing fitted with steel hinged covers.

Particulars of Flush Bunker Scuttles:— *none fitted* ✓

Particulars of Companionways:— One steel Companionway on freeboard deck in forewell $8'3'' \times 14'2'' \times 7'3''$ high. ✓
 leading to forward pumproom with steel hinged door on after side $5'0'' \times 2'6''$
 sill $18''$ fitted watertight and Capable of being operated from both sides.
 One steel companionway on freeboard deck in afterwell $8'5'' \times 14'2'' \times 7'3''$ high leading
 to after pumproom with steel watertight hinged door on after side $5'0'' \times 2'6''$
 sill $18''$ Capable of being operated from both sides. ✓

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:					Remarks
in fore-castle deck	10 ft.	12" diam.	coaming 18 6 x 30 "	led to fore-castle	
	1 "	6 "	" 36 x 30 "	led to enclosed fore-castle	
On poop-deck	3 "	10 "	" 36 x 28 "	" " " "	
	3 "	12 "	" 18 6 x 30 "	" " " "	
	5 "	12 "	" 30 x 30 "	" enclosed poop-space	
	2 "	10 "	" 30 x 30 "	" " " "	
	5 "	8 "	" 30 x 28 "	" " " "	
On bridge deck	8 "	6 "	" 30 x 28 "	" " " "	
			" 30 x 28 "	" enclosed bridge-space	

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :-

On fore-castle deck	5 airpipes	$3\frac{1}{2}$ " dia. x 36" high	from break & creptank.	} All airpipes are fitted with gann and canvas covers are provided. ✓
	2 " "	5" " x 36" " "	" "	
On poop deck	1 " "	$3\frac{1}{2}$ " " x 36" " "	" afterpeak. "	

Particulars of Gangway Cargo and Coaling Ports:— *none fitted.*

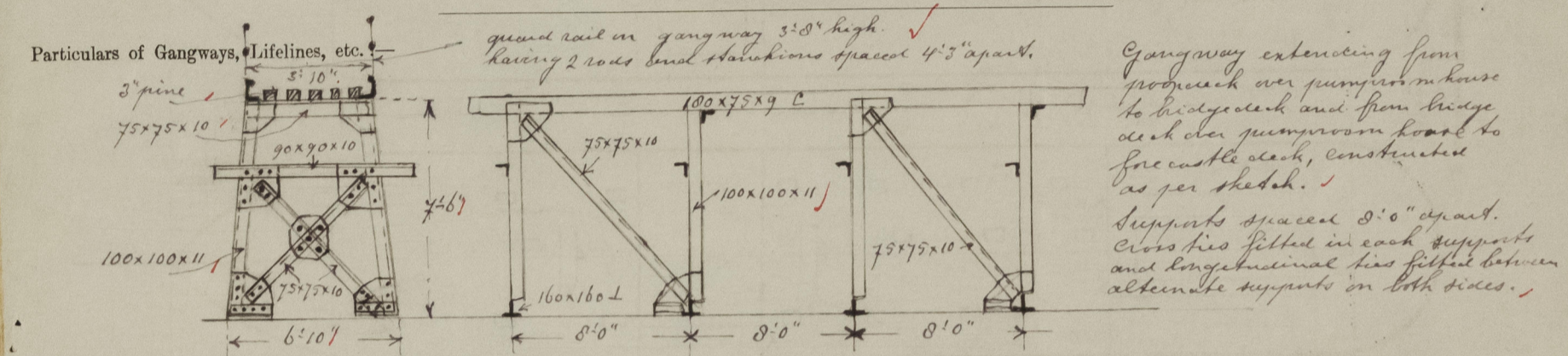
Particulars of Scuppers and Sanitary Discharge Pipes

Trawl	4 scuppers cut through stinger angle ✓
Reef	8 scuppers cut through stinger angle ✓
Sanitary discharge pipes from accommodation in fore hold	{ S.B. one 5" and one 4" discharge P.S. one 5" and one 4" discharge
" " " "	{ P.S. two 4" discharges
" " " "	{ S.B. two 2" two 2½" one 5" and one 4" discharges P.S. one 2½" two 2" and four 4" discharges

All sanitary discharges fitted below foreboard each with steel valve stems or shipstays and metal flanges.

Particulars of Side Scuttles: *Scuttles from inside poop space secured plugs at inner ends.*
Side scuttles to accommodation in fore-castle and poop are all of substantial construction and fitted with permanent attached deadweights.
Side scuttles in storeroom in bridge sitto. ✓

Particulars of Guard Rails:— *Cast steel bulwark on freeboard deck in fore- and afterwell*
as per sketch on page 4 3' 4" (1.10 mtr.) high, efficiently constructed and supported
galvan rail on fore-castle 3' 8" high having 3 rails and fanchions spaced 4' 5" apart.
on bridge deck 3' 8" " " 3 " " " 4' 3" apart.
on poop-deck 3' 8" " " 3 " " " 5' 6" apart.



Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	48.20 M ^s	1.10 M ^s	9.4 x 5.0 d/d oval 24 M ^s open rail	2 —	74 d M ²	$\frac{1}{2}$ L open rails
Forward Well	34.69 M ^s	1.10 M ^s	9.4 x 5.0 d/d oval 19.42 open rail.	2 —	74 d M ²	"
State position of each freeing port { After Well:— } 14" above deck edge. (F. and A. position and height above deck edge) { Forward Well:— } State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 3 vertical rails 1" in diam.						
Additional area where sheer is less than standard.			See special sketch of increases in freeing port area 15/7/148			

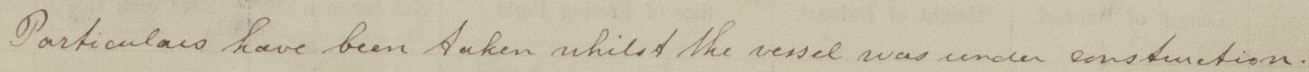
	Coaming	Plating	Stiffeners <i>n_m</i>	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	Vertical	11 mm steel 150 x 90 x 10 A	190 x 75 x 13 A 150 x 90 x 10 A	700 /	brackets top + bottom	1300 x 760	640	2.286 m
Raised Quarter Deck Bulkhead ...		advised long division bulkhead	250 x 90 x 13 BA					
Bridge, After Bulkhead	Vertical	8 mm / long 11.5 & 11 mm	100 x 65 x 9 A 250 x 90 x 13 BA	800 /	none	① 4'-3" x 2'-5" ② 1300 x 950	23" 600	2.286 m
Bridge, Forward Bulkhead	Vertical	11.5 & 11 mm	250 x 90 x 13 BA long division bulkhead	760	brackets top + bottom	1520 x 760	500	2.286 m
Forecastle Bulkhead	9	7.5 mm	100 x 75 x 8 A long division bulkhead	740	none	1400 x 710.2 ft 1350 x 600 ft	600	2.286 m
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Superstructure Decks	Vertical	7.5 mm	100 x 65 x 8	760	brackets on top only	none	—	2.750 m
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	Steel hinged watertight doors operated from both sides. ✓
Raised Quarter Deck Bulkhead	✓ opening with hinged steel doors, operated from both sides
Bridge, After Bulkhead	Steel portable plates 9" mm fastenings with 1" hook bolts spaced ± 350 mm apart. ✓
Bridge, Forward Bulkhead	Steel hinged watertight doors operated from both sides. ✓
Forecastle Bulkhead	✓ opening with hinged steel doors, operated from both sides. ✓
Exposed Machinery Casings on Fore- board or Raised Quarter Decks ...	✓ 8 inch hinged watertight doors operated from both sides. ✓
Exposed Machinery Casings on Super- structure Decks	✓ no openings ✓
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships ...	✓

See closing appliances from B.S. 46

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Rapana.



Small hatches on foremast deck A 2'6" x 2'6" coaming 9" bulwangle closed with steel cover fastened with luggers. ✓
 " " " poop deck B 2'9" x 3'6" coaming 9" bulwangle closed with steel cover fastened with luggers. ✓
 " " " " " C 2'3" x 2'3" coaming 7" bulwangle closed with steel cover fastened with luggers. ✓
 Cofferdam hatches fore deck D 2'0" x 1'6" coaming 10" channel closed with steel bolted covers 1/4 bolts spaced 3 1/2" apart.

St	maulred draught	g. 400 M ²	displacement	22.31	per c. M
"	"	"	g. 200 M ²	22.23	" "
"	"	"	g. 000 M ²	22.15	" "
"	"	"	8.800 M ²	22.06	" "
"	"	"	8.600 M ²	21.96	" "
"	"	"	8.400 M ²	21.86	" "

Builder's name and yard number. *Wilton Frejnoord Yard No 654*

Names of sister ships *ms. Sunetta* Jan N: 186 Rotterdamse Droogdok Maatschappij

Owners. *Petroleum Maatschappij, Rm Corona*

Fee *f* 228.00 : *will be* Received by me *J. H. Curran*