

LLOYD'S REGISTER OF SHIPPING

SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received **6 AUG 1959**
 Index No.
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 Owners C11.....

Ship's Name "AGATAN"	Official Number -	Nationality and Port of Registry Russian Leningrad	Gross Tonnage 1500	Date of Build 8.59	Port of Survey Gävle
Moulded Dimensions: Length 71.800 m Breadth 12.50 m Depth 5.20 to main deck					Date of Survey Whilst building
Freeboard Length 72.000 m					Surveyor's Signature <i>H. O. Altherton</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth 2207 m ³					Particulars of Classification +100A1 For Towing Services. class contemplated
Coefficient of fineness for use with Tables 0.680 (ACTUAL 0.555)					

DEPTH FOR FREEBOARD (D). mm	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION. mm
Moulded depth ... 5200	(a) Where D is greater than Table depth (D-Table depth) R = $\frac{0.414}{8.33(5.214-4.800)} \times 72/3.96 = +63$	Moulded Breadth (B) 12500
Stringer plate ... 14	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 18}{50} = 250$
Wood Sheathing on exposed deck		Ship's Round of Beam = 244
$T \left(\frac{L-S}{L} \right) =$		Difference = 6
Depth for Freeboard (D) = 5214	If restricted by superstructures	Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S}{L} \right) = \frac{6}{4} \times \left(1 - \frac{0.4676}{1} \right) = 0.4676$

DEDUCTION FOR SUPERSTRUCTURES.

See sketch overleaf	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	Standard Height of Superstructure
Poop enclosed			2300			1830
" overhang						R.Q.D.
R.Q.D. enclosed						Deduction for complete superstructure 753 mm
" overhang						Percentage covered $\frac{S}{L} = 53.29$
Bridge enclosed						$\frac{S_1}{L} = 53.24$
" overhang aft						$\frac{E}{L} =$
" overhang forward						Percentage from Table, Line A. 36.54
Fore enclosed	38.202	38.202	2300		38.202	(corrected for absence of forecastle (if required))
" overhang	173	130			130	Percentage from Table, Line B. 39.24
Trunk aft						(corrected for absence of forecastle (if required))
" forward						Interpolation for bridge less than 2L (if required) 37.41
Tonnage opening aft						Deduction = $753 \text{ mm} \times 0.3 = 282$
" forward						
Total	38.375	38.332			38.332	

SHEER CORRECTION. mm

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	854	1	854	763	763	1	763
1/4 L from A.P.	379	4	1516	224	224	4	896
1/2 L	95	2	190	13	13	2	26
Amidships	0	4	0	0	0	4	0
3/4 L from F.P.	190	2	380	362	240	2	480
1/4 L	759	4	3036	1005	959	4	3836
F.P.	1708	1	1708	2003	2158	1	2158
Total			7684				8159

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.75} \right) = \frac{475}{18} (0.75 - 0.2665) = -13$

If limited on account of midship superstructure. $13 \times 13.24/20 = -9$

Mean actual sheer aft = 0.6476 DEFICIENT

Mean standard sheer aft =

Mean actual sheer forward = EXCESS

Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = 70.11

" aft of " = 3.241

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck	=	17.11
Summer freeboard	=	3.73
Moulded draught (d)	=	13.38
Keel allowance	=	
Extreme draught	=	
Deduction for Tropical freeboard and addition for	=	

Winter freeboard = $\frac{d}{4} \text{ inches} = 3.35 = 3\frac{3}{4}$ Addition for Winter North Atlantic Freeboard (if required) = $3\frac{3}{4} + 2 = 5\frac{1}{4}$

Deduction for Fresh Water.

Displacement in salt water at summer load water line	$\Delta = 2037 \text{ Tons.}$
Tons per inch immersion at summer load water line	$T = 6.77$
Deduction = $\frac{\Delta}{40 T}$	$= \frac{2037}{40 \times 6.77} = 7.8 \text{ mm}$
	$= 3.07$
	$= 3$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient NIL

Depth Correction	63
Deduction for superstructures	282
Sheer correction	9
Round of Beam correction	1
Correction for Thickness of Deck amidships	1
Other corrections, scantlings, etc. To CORRESPOND	610
To A-SUMMER MOULDED DRAUGHT OF 4.075 m (ACTUAL 4.077 m)	674
Summer Freeboard =	755 mm

755 mm

755 mm

24/8/59

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

Tropical Fresh Water Line above Centre of Disc	6 1/4"
Fresh Water Line	3 1/4"
Tropical Line	3 1/4"
Winter Line	3 1/4"
Winter North Atlantic Line	5 1/4"

Tropical Fresh Water Freeboard	3' - 8 3/4"
Fresh Water	3' - 2 1/2"
Tropical	3' - 5 3/4"
Winter	3' - 5 1/2"
Winter North Atlantic	4' - 0"
	4' - 2"

3' - 8 3/4"

3' - 2 1/2"

3' - 5 3/4"

3' - 5 1/2"

4' - 0"

4' - 2"

+ 383

Summer Freeboard = 1138 mm - 44.75"

A. gator

DISPLACEMENT

DISPLACEMENT
ON SHELL, TON (METRIC)
IN SALT WATER

TON/CM
ON SHELL
METRIC TON

100 % of mould. depth

2830

7.00

95 % " " "

2660

7.00

85 % " " "

2276

6.90

75 % " " "

1914

6.70

78.44

2037

6.77

SHEER AFT.

SHEER FORWARD.

ACTUAL S.M. PRODUCT.

$$4555 + \left(2034 \times \frac{14 \cdot 76}{25} \right) = 5756$$

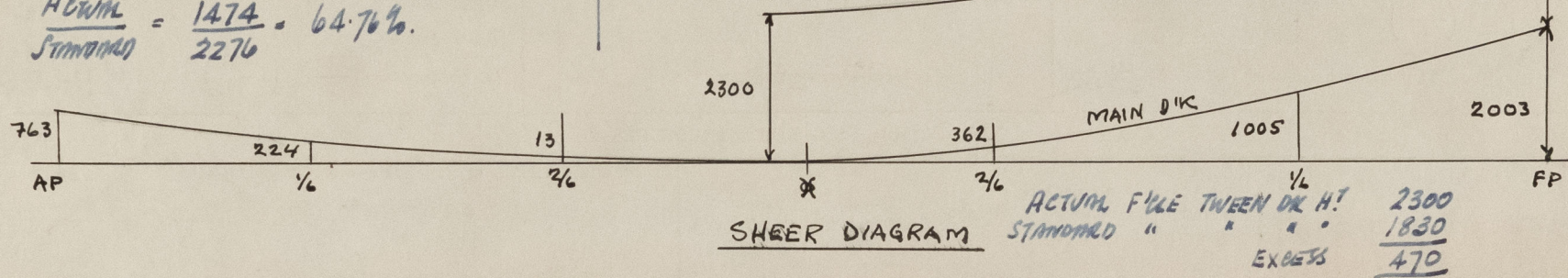
STANDARD	S.M.	PRODUCT	ACTUAL	S.M.	PRODUCT
854	1	854	763	1	763
379	3	1137	224	3	672
95	3	285	13	3	39
0	1	0	0	1	0
		<u>2276</u>			<u>1474</u>

$$\frac{\text{Actual}}{\text{Standard}} = \frac{1474}{2276} = 64.76\%$$

Standard	J.M.	Product.
0	1	0
190	3	570
759	3	2277
1708	1	<u>1708</u>
		4555

0	1	816
272	3	3300
1100	3	2473
2473	1	<u>6589</u>
		<u>4555</u>
		<u>2034</u>

FCL OK

$$\text{Allowed Short} = \frac{\text{Standard}}{\text{Ord. (Prod.)}} \times \frac{5756}{4555}$$


ALLOWED SHEAR AT F.P = $470 + 2003 = 2473$.

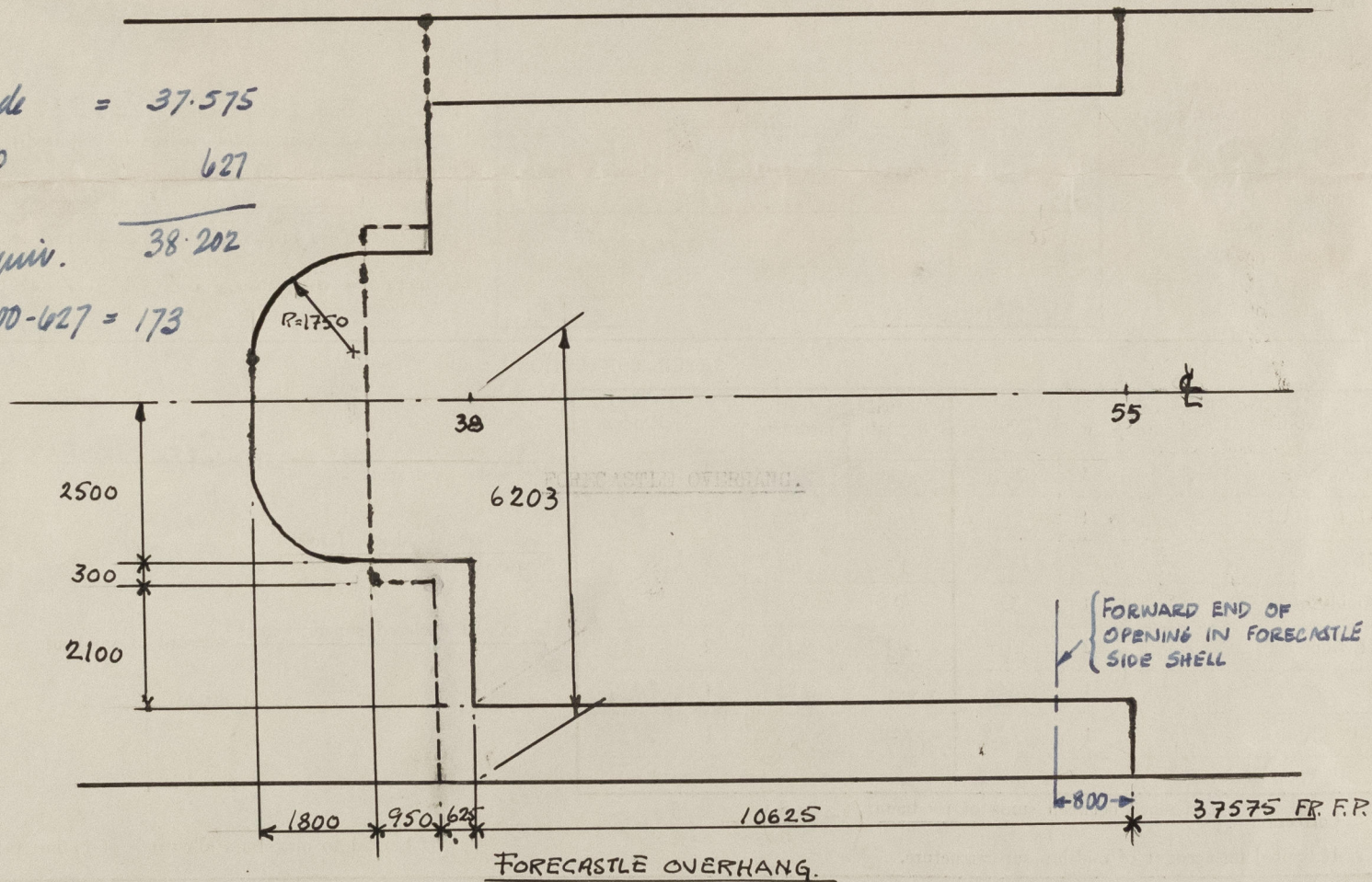
FORECASTLE :-

length at tide = 37.575

PLVS $\frac{4.900 \times 0.800}{6.250}$ 627

Equiv. 38.202

Leistung = $800 - 627 = 173$



Trade of ship International

Names of sister ships "ALDAN", Yard No. 100, Skm Rpt. No. 11939.

Builder's name and yard number A/B Gävle Varv, Yard No. 101.

U.S.S.R.
Owners _____

Fee **1** Kr.: 455:--:

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)

1. Longitudinal section and plans.
2. Midship section.