

Index. No. _____
(For London Office only.)

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

22977.

Computation of Freeboard for Steamer, Sailing Ship, Tanker having <u>Prop. Long Bridge - Arcuate</u>		Port of Survey <u>NEWPORT, MON.</u>
(Type of Superstructures.)		Date of Survey <u>31st May 1932</u>
Ship's Name <u>"HAXBY."</u>	Nationality and Port of Registry <u>British W. Hartlepool</u>	Official Number <u>160760.</u>
Gross Tonnage <u>5207.</u>		Date of Build <u>1929-5.</u>
Moulded Dimensions: Length <u>421.00</u> ✓ Breadth <u>54.04</u> ✓ Depth <u>30.1</u> ✓		Name of Surveyor <u>W. Macfarlane</u> <u>Johnston</u>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>12700</u> tons		
Coefficient of fineness for use with Tables <u>.764</u> ✓		
Particulars of Classification <u>100A1</u>		See <u>Donalson</u>

Depth correction				Round of Beam correction	
Moulded depth	...	...	...	Moulded Breadth (B)	54.04
Stringer plate	...	...	...	Standard Round of Beam = $\frac{B \times 12}{50}$	12.974
Sheathing on ex	ck	...	...	Ship's Round of Beam	13.5
T $\left(\frac{L-S}{L} \right)$				Difference	.53
J. 1 r Freeboard (D) =	30.11			Restricted to	.257
				Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right)$	.53

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Ship					
Po	1 ...	29.9	29.75	7.6	29.75
ng...	...				
F	sed ...				
ang ...	240.17				
sed...	240.2	240.17	7.6		240.17
ang aft ...					
ang forward	42.21				
1 ...	42.21	42.21	7.6		42.21
g ...	7.6	60	+3 wood		60
ward ...					
ward ...					
To ...					
ge opening aft ...					
" forward					
Total ...	313.34	312.73			312.73

Standard Height of Superstructure 7.50 ✓
 " " R.Q.D. ✓
 Deduction for complete superstructure 42.00
 Percentage covered $\frac{S}{L} = 74.43\%$
 " " $\frac{S_1}{L} = 74.30\%$
 " " $\frac{E}{L} = 74.30\%$
 Percentage from Table, Line A. ✓
 (corrected for absence of forecastle (if required)) ✓
 Percentage from Table, Line B. 68.29%
 (corrected for absence of forecastle (if required)) ✓
 Interpolation for bridge less than 2L (if required) ✓
 Deduction = 42.00 × .6829 = - 28.68

SHEER CORRECTION.

Station	Standard Ordnate	S M	Product	Actual Ordnate	Effective Ordnate	S M	Product
A.P. ...	52.10 57 "	1	52.10	51.00	51.00	1	51.00
$\frac{1}{6}$ L from A.P. ...	23.18 22.12 "	4	92.72	22.12	22.12	4	88.48
$\frac{2}{6}$ L " ...	5.73 5.51 "	2	11.46	5.53	5.53	2	11.06
Amidships ...	X	4	✓	✓	✓	4	✓
$\frac{2}{6}$ L from F.P. ...	11.46 11.87 "	2	22.92	11.40	11.40	2	22.80
$\frac{1}{6}$ L " ...	46.37 46.62 "	4	185.48	45.62	45.62	4	182.48
F.P. ...	104.20 105 "	1	104.20	105.00	105.00	1	105.00
Total ...			468.88				460.82

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{Deficient}$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Deficient}$$
$$\frac{\text{Length of enclosed superstructure}}{L} \text{ forward of amidships} = .308$$

" " aft of " = .260

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18}$$

$$\left(.75 - \frac{8}{2L} \right) = \frac{8.06}{18} \times (.75 - .3721) = +.17$$

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.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)																														
<p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p style="text-align: right;">Ft.</p> <p>Depth to Freeboard Deck = <u>30.11</u></p> <p>Summer freeboard = <u>5.04</u></p> <p>Moulded draught (d) = <u>25.07</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>6.27 = 6 ¹/₄</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u> </u></p>	<p>Displacement in salt water at summer load water line</p> <p>$\Delta = 12542$</p> <p>Tons per inch immersion at summer load water line</p> <p>$T = 45.87$</p> <p>Deduction = $\frac{\Delta}{40T}$ inches</p> <p><math>= 6.84 = 6 ³/₄</math></p>	<p>Correction for coefficient $\frac{.764 + .68}{1.36} = \frac{1.444}{1.36}$</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">+</th> <th style="text-align: center;">-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction ...</td> <td style="text-align: center;">6.12</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">28.68</td> </tr> <tr> <td>Sheer correction ...</td> <td style="text-align: center;">.17</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Round of Beam correction ...</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">.03</td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td></td> <td style="text-align: center;">6.29</td> <td style="text-align: center;">28.71</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: right;">-22.42</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: right;">Summer Freeboard = 60.52</td> </tr> </tbody> </table>		+	-	Depth Correction ...	6.12	✓	Deduction for superstructures ...	✓	28.68	Sheer correction17	✓	Round of Beam correction ...	✓	.03	Correction for Thickness of Deck amidships ...	✓	✓	Other corrections, scantlings, etc. ...	✓	✓		6.29	28.71		-22.42			Summer Freeboard = 60.52	
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	...	13	...
Fresh Water Line	"	6 3/4	...
Tropical Line	"	6 1/4	...
Winter Line	below	6 1/4	...
Winter North Atlantic Line	"		✓

Tropical Fresh Water Freeboard ...	...	3' - 11/2"
Fresh Water " " ...	...	4' - 5 3/4"
Tropical " " ...	...	4' - 6 1/4"
Winter " " ...	...	5' - 6 3/4"
Winter North-Atlantic " " ...	...	5' - 6 3/4"

MARKING FORM

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway	1	2	3	4	5	6	Prop	2	3	4
Dimensions of Hatchway	14'3" x 20'0"	20'4" x 20'0"	10'8" x 20'0"	30'4" x 20'0"	30'4" x 20'0"	18'5" x 20'0"	18'0" x 10'0"	30'4" x 20'0"	21'6" x 20'0"	30'4" x 20'0"
COAMINGS	Height above Deck	36"	10"	10"	10"	31"	31"	31"	31"	31"
	Thickness	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"
	Stiffeners	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"	7 x 3 x 4 1/2"
	Brackets, Stays	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
HATCH BEAMS	Number	5	5	1	5	5	5	5	1	5
	Spacing	4'10"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"	5'0"
	Scantling and Sketch	18 x 35	18 x 35	18 x 35	18 x 35	18 x 35	18 x 35	18 x 35	18 x 35	18 x 35
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"
FORE AND AFTERS	Number									
	Spacing									
	Unsupported Lengths									
	Scantling and Sketch									
HATCH COVERS	Material	WP	WP	WP	WP	WP	WP	WP	WP	WP
	Thickness	3"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	How fitted	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.
	Bearing Surface	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
Number of Tarpaulins	2	2	2	2	2	2	2	2	2	2
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>Yes</i></p> <p>Are battens and wedges efficient and in good condition? <i>Yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>Yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>Yes</i></p>										

Particulars of fiddle, funnel and ventilator coamings:—

*Stokehold gratings covered by strong steel lining
Lidlag, funnel & ventilator coamings in efficient condition.
Engine room skylight of steel, strongly constructed.*

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways:—

None

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

*On Prop 2 canvas Port vents 20" dia x 5' thick
1 vent 10" dia canvas 30" high x 8 1/2"
After Hull 1 vent 15" dia canvas 36" high x 4 1/2"
Bridge Deck 2 " 17" " 30" x 4 1/2"
" 3 " 15" " 30" x 4 1/2"
" 3 " 16" " 30" x 4 1/2"
All vents fitted with canvas covers & wood plugs.*

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

*On Prop 2 C.I. air pipes 7" dia 16' 6 1/2" high to A.P.T.
1 " 3 1/2" 16' 11" to DBT
After Hull 1 W.I. 1 1/2" flush fitted with Brass Cap
Bridge Deck 2 C.I. 4" 16' 10" high to 405 DBT
2 " 5" 16' 10" to E.R.T.
Bridge deck 2 C.I. air pipes 4 1/2" dia 16' 10" high to 402 DBT
On Side 1 " 4 1/2" 10' 5" to 1st
" 3 1/2" 15' 10" to A.P.T.
All air pipes fitted with wood plugs
canvas covers no sniffling holes*

Particulars of Gangway Cargo and Coaling Ports:—

None



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Particulars of Scuppers and Sanitary Discharge Pipes —

Soil pipes fitted with storm leaders at Ship's side
No soil pipes or scuppers below, keelson deck. ✓

Particulars of Side Scuttles:

Side scuttles fitted with hinged deadlights ✓

Particulars of Guard Rails:—

Guard rails on Poop Bridge & Forecastle 3' 0" high
Two rails with stanchions spaced 5' 0". Bulwark and ship's
strong & efficiently constructed ✓

Particulars of Gangways, Lifelines, etc.:—

None fitted.

Lifelines have been fitted in the wells for
the protection of the crew.

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	40' 3" ✓	4' 1"	5' 6" x 9"	4	16.5 sq ft ✓	14.05 sq ft ✓
Forward Well	38' 6" ✓ 37' 11"	4' 0"	5' 0" x 9"	3	11.25 sq ft ✓	10.25 sq ft ✓

State position of each freeing port } After Well:— from B.B.H 5' 0" - 22' 10" - 40' 5" - 58' 4". Height of sill 15" ✓
F. and A. position and height above deck edge) Forward Well:— " " 5' 1" - 16' 1" - 27' 2" " " 13" ✓
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—
1" dia bars

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

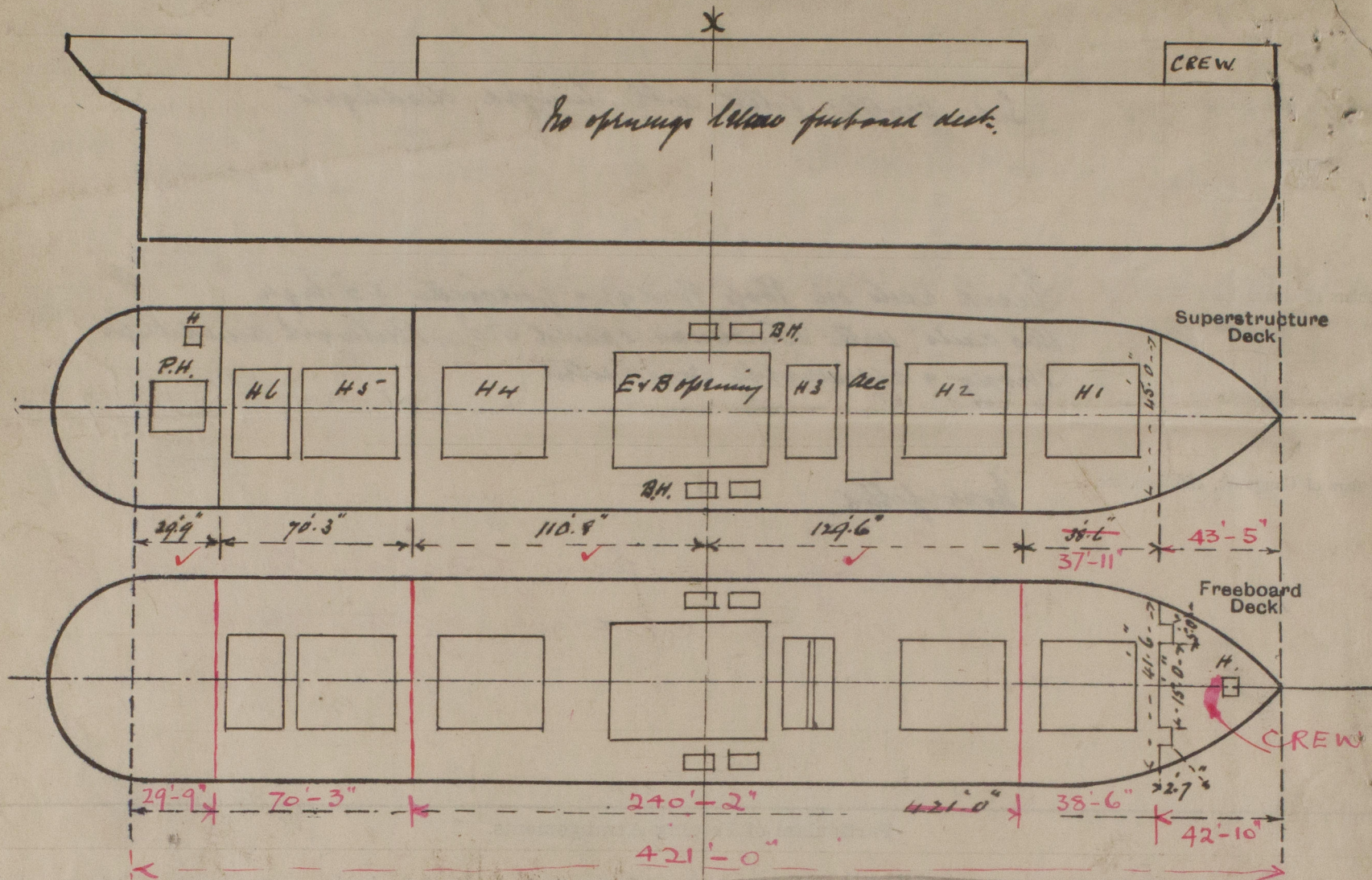
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	.44" ✓	.4" ✓	6 x 3 x .5" ✓	30" ✓	Sup T & B ✓	5' 3" x 3' 0" ✓	21" ✓	7' 6" ✓
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead ... ..	.2" ✓	.32" ✓	4 x 3 x .34" ✓	30" ✓	✓	5' 0" x 3' 1" ✓	23" ✓	7' 6" ✓
Bridge, Forward Bulkhead ... ..	.44" ✓	.44" ✓	9 x 3 x .5 BA ✓	30" ✓	Backs at T Sup at B ✓	4' 4" x 2' 9" ✓	20" ✓	7' 6" ✓
Forecastle Bulkhead	✓	.34" ✓	3 x 3 x .42" ✓	30" ✓	✓	4' 7" x 2' 0" ✓	19" ✓	7' 6" ✓
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks ... ..	.38" ✓	.32" ✓	3 x 3 x .3" ✓	30" ✓	✓	4' 10" x 2' 0" ✓	19" ✓	7' 6" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	.32" ✓	.25" ✓	3 x 3 x .3" ✓	28" ✓	✓	4' 10" x 2' 0" ✓	19" ✓	7' 6" ✓
Deckhouses on Flush Deck Ships								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	Storm boards 2 1/2" WP full height of opening & rivetted channels ✓
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	Storm boards 2 1/2" WP full height of opening & rivetted channels ✓
Bridge, Forward Bulkhead	WT door with hooked fastenings & nuts on outside 20" pitch at sides 18" & B ✓
Forecastle Bulkhead	Steel hinged doors operated from either side ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	Steel hinged doors operated from either side ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Steel hinged doors operated from either side ✓
Deckhouses on Flush Deck Ships	

Haseby

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches:—



$$\begin{aligned} \text{FCLE} &= 42.83 & L/10 &= 42.1 \\ \text{DEDUCT } \frac{2 \times 5 \times 7.58}{41.50} &= \frac{75.8}{41.50} = 1.82 & 42.21 &= 8 \text{ gms BHD} \\ & & 1.21 &= 0.11 @ 50\% \end{aligned}$$

State any special features in the construction of the ship:—

Vessel placed in Dry Dock for complete condition survey. A found in order. ✓ Forecastle sheathed for full length 3" P. One hatch on poop 3' 9" x 3' 0" coaming 12 x 3 1/2 x 5" B.H. Port has 2 hatches under fore 3' 9" x 3' 0" coaming 9 x 8 x 1/2" B.H. Port has 2 1/2" ✓ Two smaller hatches on each side of E.B. coaming 6' 8" x 3' 0" coaming 31" high x 38" rest has 2 1/2" ✓ In Bridge space four trunnion hatches 6' 10" x 3' 0" coaming 12 x 38 rest has 2 1/2" ✓ One hatch to stern 28' x 36" coaming 9 x 5 x 4" B.H. Port wings 2" ✓ Smaller hatch on filling case 19' 7" x 5' 8" coaming 8 x 3 x 4" B.H. ✓ The above hatches are fitted with elcots, battens 2 1/2" ✓ covers & two tarpaulins. ✓ Trunnion hatches at corners of box 2.3 x 4 hatches 2' 0" x 2' 0" coaming 9 x 3 x 38" B.H. with single 2 1/2" W.P. covers secured with bolts & butterfly nuts. ✓ Tarpaulins secured by lashings. ✓ Replaced end coamings of main hatches fitted with stiffeners & stays. ✓

9150 tons DW at 25.1 1/2 draught = 45.8 T.P.1

8550	-	24.0	-	45.59
8000	-	23.0	-	45.08
7450	-	22.6	-	45.17
6900	-	21.0	-	44.96

Builder's name and yard number

W. Gray & Co. Ltd.

Names of sister ships

Owners

Proprietor Shipping Co. Ltd.

Fee £ 13 : 12 : 0

Received by me



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