

REPORT ON BOILERS.

No. 10365.

OCT 22 1937

Received at London Office

Date of writing Report 13th October 1937 When handed in at Local Office

192

Port of Copenhagen

No. in Reg. Book. 38466 on the Single Se. Motor Tanker "HÖEGH RAY" Date, First Survey 21st January Last Survey 5th October 1937

(Number of Visits 17) Tons {Gross 9357.37 Net 5659.41

Master - Built at Odense By whom built 2 Odense Skibskonstruktørværk Yard No. 66 When built 1937
 Engines made at Copenhagen By whom made Asst. Børnmoeller & Sørensen Engine No. 2657 When made 1937
 Boilers made at Copenhagen By whom made Asst. Børnmoeller & Sørensen Boiler No. 1926 When made 1937
 Nominal Horse Power - Owners Skibs & Anslags (Leif Løngren) Port belonging to Oslo

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Plates: Corbridge Ltd, Shotton Works and Appleby Forge & Engineering Co Ltd, South Shields
 Tubes: Shillodens & Co Ltd, Rye, East Sussex; Furness: Lonsdale Bridge & Thomas Fyfe & Co, Tynes
 Manufacturers of Steel Stays: The United Steel Companies Ltd, Sheffield, S. Yorks; Elmslie & Co, Glasgow Letter for Record -

Total Heating Surface of Boiler Oil fired: 150.2 m²; gas fired 58.3 m² Is forced draught fitted yes Coal or Oil fired & exhaust gas

No. and Description of Boilers 2 off horizontal multitubular Working Pressure 180 lbs/sq in

Tested by hydraulic pressure to 320 lbs/sq in Date of test 19.4.37 No. of Certificate 602-3 Can each boiler be worked separately yes

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2 off direct spring loaded at 3 1/2" diam

Area of each set of valves per boiler {per Rule 9290 sq in as fitted 12450 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler -

Smallest distance between boilers or uptakes and bunkers or woodwork no woodwork Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating Boilers placed on platform Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3850 mm Length 3180 mm Shell plates: Material S. Ct. Steel Tensile strength 29.0-30.6 lbs/sq in

Thickness 26 mm Are the shell plates welded or flanged no Description of riveting: circ. seams {end 216-296 inter. none

long. seam 26 lb butt straps 36 lb rivets Diameter of rivet holes in {circ. seams 29 mm long. seams 28 mm Pitch of rivets {88.24 mm 190 mm

Percentage of strength of circ. end seams {plate 67 rivets 47 Percentage of strength of circ. intermediate seam {plate 85.3 rivets 95.5

Percentage of strength of longitudinal joint {plate 85.3 rivets 95.5 combined 89.6 Working pressure of shell by Rules 183 lbs

Thickness of butt straps {outer 26 mm inner 26 mm No. and Description of Furnaces in each Boiler 2 off corrugated, Deighton's section

Material S. Ct. Steel Tensile strength 26.7-29.4 lbs/sq in Smallest outside diameter 940 mm

Length of plain part {top 13 mm bottom 13 mm Description of longitudinal joint none (welded)

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 200 lbs/sq in

End plates in steam space: Material S. Ct. Steel Tensile strength 26.8-27.8 lbs/sq in Thickness 27 mm Pitch of stays 350 x 490 mm

How are stays secured screwed in both plates, nuts inside & outside Working pressure by Rules 180 lbs/sq in

Tube plates: Material {front S. Ct. Steel Tensile strength 27.3-29.6 lbs/sq in Thickness 24 mm

Mean pitch of stay tubes in nests 228 mm Pitch across wide water spaces 355 mm Working pressure {front 181 lbs/sq in back 248 lbs/sq in

Girders to combustion chamber tops: Material S. Ct. Steel Tensile strength 31.7 lbs/sq in Depth and thickness of girder

at centre 160 x 19 mm x 2 Length as per Rule 672 mm Distance apart 225 mm No. and pitch of stays

in each 2 of 224 mm Working pressure by Rules 192 lbs/sq in Combustion chamber plates: Material S. Ct. Steel

Tensile strength 28.4-31.4 lbs/sq in Thickness: Sides 17 mm Back 16 mm Top 17 mm Bottom 19 mm

Pitch of stays to ditto: Side 240 x 215 mm Back 204 x 188 mm Top 225 x 224 mm Are stays fitted with nuts or riveted over filled with nuts

Working pressure by Rules 195 lbs/sq in Front plate at bottom: Material S. Ct. Steel Tensile strength 27.3-29.6 lbs/sq in

Thickness 24 mm Lower back plate: Material S. Ct. Steel Tensile strength 27.3-29.6 lbs/sq in Thickness 24 mm

Pitch of stays at wide water space D = 492 mm Are stays fitted with nuts or riveted over nuts inside & outside

Working Pressure 228 lbs Main stays: Material S. Ct. Steel Tensile strength 29.8-32.35 lbs/sq in

Diameter {At body of stay, 2 1/2" 2 1/2" No. of threads per inch 11 Area supported by each stay 172000 mm²

Over threads 3" - 2 3/4" 2 3/4" - 2 1/2" Working pressure by Rules 208 lbs Screw stays: Material S. Ct. Steel Tensile strength 28.29-30.40 lbs/sq in

Diameter {At body of stay, 1 1/2" 1 5/8" No. of threads per inch 11 Area supported by each stay 38352 x 43860 mm²

Over threads 1 1/2" - 1 5/8" Working pressure by Rules 208 lbs

Working pressure by Rules 188 lbs/sq in Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 1 3/4" ^{or} Over threads

No. of threads per inch 11 Area supported by each stay 44 53000 sq in Working pressure by Rules 201 lbs/sq in

Tubes: Material Sell. Steel External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness 3.75 sq in No. of threads per inch 11

Pitch of tubes 90 x 92 sq in Working pressure by Rules 200 lbs Manhole compensation: Size of opening in shell plate 405 x 505 sq in Section of compensating ring flange 26 in. thick No. of rivets and diameter of rivet holes 46 of 28 sq in diam

Outer row rivet pitch at ends 95 x 27 sq in Depth of flange if manhole flanged 88 sq in Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint ^{Plate} ^{Rivets}

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown Working pressure by Rules

Size of doubling plate under dome Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell

Type of Superheater Manufacturers of ^{Tubes} ^{Steel castings}

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules

Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description,
BURMEISTER & WAINSKIN-OSKIBSYGGER Manufacturer.

Dates of Survey ^{During progress of work in shops - -} 2/1-4/2-8/2-11/2-24/2-27/2-8/3-15/3-24/3-19/4 Are the approved plans of boiler and superheater forwarded herewith yes ^(If not state date of approval.)

^{while building} ^{During erection on board vessel - - -} 26/8-2/9-7/9-15/9-25/9-1/10-5/10 Total No. of visits 17

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The above steam boiler has been constructed and fitted on board under special survey in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letters E dated 19/5 & 14/7-1906

The material used in construction have been tested as required by the Rules and the workmanship is good

Recommend the vessel's machinery to have notation in the Register Book of 203-180 lbs

Survey Fee ... £ 6/5-00 When applied for, 20. 10. 1937

Travelling Expenses (if any) £ : : When received, 1. 11. 1937

Christoph J. Langkilde
 Engineer, Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 26 OCT 1937

Assigned See also F.E. report