

REPORT ON BOILERS.

21 SEP 1927

No. 9771

Received at London Office 30 JUN 1927

Date of writing Report 1927 When handed in at Local Office 29-6-1927 Port of Belfast

No. in Reg. Book. Survey held at Belfast Date, First Survey See mehy. report Last Survey 192

on the TWINSS "LAHEJ" (Number of Visits) Gross Tons } Net

Master Built at Greenock By whom built Harland & Wolff Ltd. Yard No. 796GK When built 1927

Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 796GK When made 1927

Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 796GK. When made 1927

Nominal Horse Power 145 Owners P & O Steam Nav Co Ltd Port belonging to Aden.

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.

Manufacturers of Steel David Colville & Sons Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 2470 sq ft 258. Is forced draught fitted. Yes Coal or Oil fired Oil

No. and Description of Boilers Two single-ended cylindrical Working Pressure 180 lb.

Tested by hydraulic pressure to 320 lb. Date of test 10.6.27 No. of Certificate 898 900 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Two High-lift spring-loaded

Area of each set of valves per boiler per Rule 49.50 as fitted 4.80 Pressure to which they are adjusted 185 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 18" Is oil fuel carried in the double bottom under boilers NONE

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated YES

Largest internal dia. of boilers 10'-6" Length 12'-6" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 29/32 Are the shell plates welded or flanged No. Description of riveting: circ. seams { end double } inter. 2.657" long. seams 15/16 Pitch of rivets { 6 1/16 }

Percentage of strength of circ. end seams { plate 64.8 rivets 47.0 } Percentage of strength of circ. intermediate seam { plate 85.9 rivets 87.6 } Working pressure of shell by Rules 184 lb.

Percentage of strength of longitudinal joint { plate 85.9 rivets 87.6 combined 89.4 } Thickness of butt straps { outer 23/32 inner 27/32 } No. and Description of Furnaces in each Boiler Two Morrison

Material Steel Tensile strength 26-30 tons Smallest outside diameter 34 7/8"

Length of plain part { top bottom } Thickness of plates { crown 29/64 bottom } Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 185 lb.

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/16 Pitch of stays 15" x 20 1/2"

How are stays secured double nuts and washers Working pressure by Rules 183 lb.

Tube plates: Material { front back } Steel Tensile strength { 26-30 tons } Thickness { 1 1/16 1 1/16 }

Mean pitch of stay tubes in nests 7 1/2" Pitch across wide water spaces 13 3/4" Working pressure { front 279 lb back 245 lb }

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder at centre 10'-1 3/4" Length as per Rule 37 1/2" Distance apart 10 3/4" No. and pitch of stays in each three 9" Working pressure by Rules 180 lb. Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 33/32 Back 11/16 Top 23/32 Bottom 23/32

Pitch of stays to ditto: Sides 10" x 8" Back 10 5/8" x 8" Top 9" x 10 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 184 lb. Front plate at bottom: Material 1 1/16 Tensile strength 26-30 tons Thickness 1 1/16 Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1 1/16

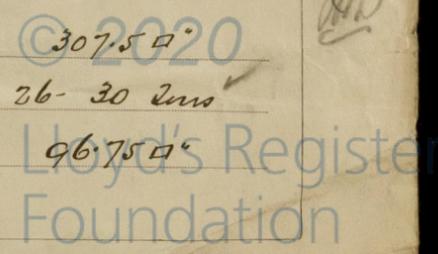
Pitch of stays at wide water space 12 3/4" x 8" Are stays fitted with nuts or riveted over nuts

Working Pressure 400 lb. Main stays: Material Steel Tensile strength 28-32 tons

Diameter { At body of stay, or over threads } 3" No. of threads per inch Five Area supported by each stay 307.5 sq in

Working pressure by Rules 211 lb. Screw stays: Material Steel Tensile strength 26-30 tons

Diameter { At turned off part, or over threads } 1 3/4" No. of threads per inch Ten Area supported by each stay 96.75 sq in



Working pressure by Rules 187 lb Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} _{Over threads} 1 7/8" 2"
 No. of threads per inch 16 Area supported by each stay 116.875 sq" Working pressure by Rules 182 lb
 Tubes: Material Iron External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness ^{No. 8} 5/16" ^{No. 9} 3/8" ^{No. 10} 1/2" No. of threads per inch 16
 Pitch of tubes 3 1/4" Working pressure by Rules Stay 299 lb. plain 300 lb Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 36" x 32" x 3/4" double No. of rivets and diameter of rivet holes 28 - 1 5/16"
 Outer row rivet pitch at ends 9" Depth of flange if manhole flanged ✓ Steam Dome: Material None
 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 _____
 Inner radius of crown _____ Working pressure by Rules _____
 How connected to shell _____ 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 _____

The foregoing is a correct description,
FOR HARLAND AND WOLFF, LIMITED,
J. E. Kebleck Manufacturer.

Dates of Survey ^{During progress of work in shops - - -} _____
 while building ^{During erection on board vessel - - -} _____
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) _____
 Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These Boilers have been constructed under special survey and to approved design. The materials and workmanship are sound and good. They have been tested by hydraulic pressure in accordance with the rules and are, in my opinion, eligible for installation on a classed vessel. They have been shipped to Greenock.

Survey Fee £ : _____ When applied for, _____ 192
 Travelling Expenses (if any) £ : _____ When received, _____ 192

R. Lee Ames
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 20 SEP 1927**

Assigned *See Grk. Rpt. No. 18762 WJM*

TUES. 4 OCT 1927



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