

## REPORT ON BOILERS.

No. 18031

Received at London Office APR 19 1940

Survey Report 15<sup>th</sup> April 1940 When handed in at Local Office 15<sup>th</sup> April 1940 Port of WEST HARTLEPOOL.

Survey held at WEST HARTLEPOOL.

Date, First Survey 22<sup>nd</sup> May, 1939 Last Survey 13<sup>th</sup> April 1940

Boilers on the STEEL SCREW STEAMER "FLORIAN"

(Number of Visits 173 ) Gross Tons }  
Net Tons }

Built at West Hartlepool. By whom built Wm. Gray &amp; Co. Ltd. Yard No. 1099. When built 1940.

Made at West Hartlepool. By whom made Central Marine Engine Works Engine No. 1099. When made 1940.

Made at West Hartlepool. By whom made Central Marine Engine Works Boiler No. 1099. When made 1940.

Horse Power 606. Owners Ellerman Lines, Ltd. Port belonging to Liverpool.

## TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Boilers of Steel boilers, 2<sup>nd</sup> Glasgow.

Heating Surface of Boilers 7,770 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

Description of Boilers Three single ended. Working Pressure 225 lbs. sq. in.

Hydraulic pressure to 388 lbs. Date of test 7-11-39. No. of Certificate 3906 Can each boiler be worked separately Yes.

Firegrate in each Boiler 55.5 sq. ft. No. and Description of safety valves to each boiler 2 Backburn High Lift.

Each set of valves per boiler { per Rule 6.745 sq. in. as fitted 7.952 sq. in. Pressure to which they are adjusted 225 lbs. sq. in. Are they fitted with easing gear Yes.

Donkey boilers, state whether steam from main boilers can enter the donkey boiler —

Distance between boilers or uptakes and bunkers or woodwork 24" Is oil fuel carried in the double bottom under boilers No.

Distance between shell of boiler and tank top plating 24 1/2" Is the bottom of the boiler insulated Yes.

Internal dia. of boilers 15'-0" Length 12'-6" Shell plates: Material Steel Tensile strength 29-33 tons

1 15/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. Lat. inter. —

T.R. Double Butts Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets { 4" 10 1/2"

Percentage of strength of circ. end seams { plate 62.5% rivets 47.7% Percentage of strength of circ. intermediate seam { plate — rivets —

Percentage of strength of longitudinal joint { plate 85.62% rivets 85.65% combined 88.38%

No. and Description of Furnaces in each Boiler 3 Deighton Type Goutley ends.

Steel Tensile strength 26-30 tons Smallest outside diameter 44 13/16"

Thickness of plates { crown 23/32" bottom 23/32" Description of longitudinal joint Welded.

Stays of stiffening rings on furnace or c.c. bottom —

Stays in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 18x20"

Stays secured Double nuts and washers

Stays: Material { front Steel Tensile strength 26-30 tons Thickness 15/16" back Steel Tensile strength 26-30 tons Thickness 7/8"

Pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14"

Combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

9 1/8", 2-3/8" plates Length as per Rule 35.4" Distance apart 8 1/8" No. and pitch of stays

3 @ 9 1/4" Combustion chamber plates: Material Steel Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"

Stays to ditto: Sides 8 1/2 x 9 1/4" Back 8 1/2 x 7 3/4" Top 8 1/2 x 9 1/4" Are stays fitted with nuts or riveted over 50% in centre which are riveted box 62.

Plate at bottom: Material Steel Tensile strength 26-30 tons

Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 15/16"

Stays at wide water space 14 1/4 x 8 1/2" Are stays fitted with nuts or riveted over Nuts.

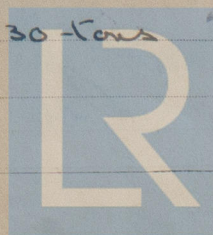
Stays: Material Steel Tensile strength 28-32 tons

At body of stay, No. of threads per inch 6.

Stays: Material Steel Tensile strength 26-30 tons

At turned off part, No. of threads per inch 9.

Over threads 1 5/8" &amp; 1 3/4"



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W395-0110



Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 2" or Over threads 2"  
No. of threads per inch 9  
Tubes: Material Steel External diameter { Plain 3" Stay 3" Thickness { 8 W.G. 1/4" 9/16" No. of threads per inch 9  
Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening  
shell plate 20 x 16 Section of compensating ring 37 x 33 x 1 1/2 No. of rivets and diameter of rivet holes 32 @ 1 1/2  
Outer row rivet pitch at ends 11" Depth of flange if manhole flanged 4 1/4" Steam Dome: Material Steel  
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 Thickness of crown No. and diameter  
stays Inner radius of crown  
How connected to shell Size of doubling plate under dome Diameter of rivet holes and  
of rivets in outer row in dome connection to shell

Type of Superheater Smoke tube

Manufacturers of

Tubes Messrs Stewart & Lloyd  
Steel forgings Messrs Colvilles & Co.  
Steel castings Messrs Stephenson & Head Wrightson

Number of elements 57 each Material of tubes Solid drawn steel Internal diameter and thickness of tubes 17 1/4" 2 1/2" W.G.  
Material of headers Mild steel Tensile strength 26-30 tons Thickness 1 1/2" Can the superheater be shut off  
the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
Area of each safety valve 1.76 sq. in. Are the safety valves fitted with easing gear Yes  
Pressure to which the safety valves are adjusted 235 lbs. sq. in. Hydraulic test pressure  
tubes 1,200 lbs. sq. in. forgings and castings 675 lbs. sq. in. and after assembly in place 1,000 lbs. sq. in. Are drain cock  
valves fitted to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
FOR THE CENTRAL MARINE ENGINE WORKS,  
(H. Gray & Co., Ltd.)

Manufactured

Dates of Survey { During progress of work in shops - - }  
while building { During erection on board vessel - - }

Are the approved plans of boiler and superheater for GENERAL henceforth  
(If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. SS. CORINTHIAN N° 17862

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey and in accordance with approved plans for a working pressure of 225 lbs per square inch.

The materials and workmanship have been found good.

Upon completion the boilers were tested in the presence of the undersigned by hydraulic pressure to 388 lbs per square inch, showed no signs of weakness and were sound and tight in every respect at that pressure.

Survey Fee ... £ : : When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

Arthur W. Oxford.

Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute

FRI 26 APR 1940

Assigned

Dec Hpl. J.E. 18031



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