

# REPORT ON BOILERS.

Received at London Office SEP -7 1938

Date of writing Report 5<sup>th</sup> Sept 1938 When handed in at Local Office 5<sup>th</sup> Sept. 1938 Port of West Hartlepool

No. in Survey held at West Hartlepool Date, First Survey 8<sup>th</sup> December, 1937 Last Survey 30<sup>th</sup> August, 1938

Reg. Book. on the S.S. "Corinthian" (Number of Visits 72) Tons {Gross 3122  
Net 1431

Master West Hartlepool Built at West Hartlepool By whom built W<sup>m</sup> Grays & Co. Ltd. Yard No. 1083 When built 1938

Engines made at West Hartlepool By whom made Central Marine Engine Works Engine No. 1083 When made 1938

Boilers made at West Hartlepool By whom made Central Marine Engine Works Boiler No. 1083 When made 1938

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

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

Manufacturers of Steel Colvilles Ltd. Glasgow (Letter for Record S)

Total Heating Surface of Boilers 4,440 sq ft Is forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers Three, single ended. Working Pressure 225 lbs.

Tested by hydraulic pressure to 388 lbs Date of test 3<sup>rd</sup> 6<sup>th</sup> 1938 No. of Certificate 3889 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 55.5 sq ft No. and Description of safety valves to each boiler 2, Cockburn's High Lift.

Area of each set of valves per boiler per Rule 6.745 sq ins Pressure to which they are adjusted 235 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 24" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 24 1/2" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 15'0" Length 12'6" Shell plates: Material steel Tensile strength 29.33 tons

Thickness 1 15/32" Are the shell plates welded or flanged no Description of riveting: circ. seams {end D.R. Lap.  
inter. ✓

long. seams J. R. D. B. S Diameter of rivet holes in {circ. seams 1 1/2"  
long. seams 1 1/2" Pitch of rivets {4"  
10 7/16"

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 Working pressure of shell by Rules 225.7 lbs.  
combined 88.38

Thickness of butt straps {outer 1 1/8"  
inner 1 1/4" No. and Description of Furnaces in each Boiler Three, Deighton type.

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

Length of plain part {top ✓  
bottom ✓ Thickness of plates {crown 23/32"  
bottom ✓ Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 235.8 lbs.

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 18" x 20"

How are stays secured Double nuts & washers Working pressure by Rules 228.7 lbs.

Tube plates: Material {front steel  
back steel Tensile strength {26-30 tons Thickness {7/8"

Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14" Working pressure {front 229.5 lbs  
back 251 lbs.

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 9 1/8" Two 7/8" plates Length as per Rule 35.4" Distance apart 8 1/8" No. and pitch of stays

in each 3 x 9 1/4" Working pressure by Rules 230.3 lbs. Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 9 1/4" Back 8 1/2" x 7 3/4" Top 8 1/8" x 9 1/4" Are stays fitted with nuts or riveted over all milled except 50% in centre which are riveted with a constant of 62

Working pressure by Rules 229.5 lbs. 226.5 lbs. 238.5 lbs. Front plate at bottom: Material steel Tensile strength 26-30 tons

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

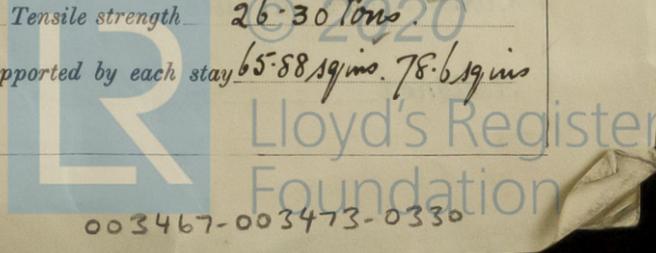
Pitch of stays at wide water space 14 1/4" x 8 1/2" Are stays fitted with nuts or riveted over nuts.

Working Pressure 262.5 lbs. Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, 3 3/8"  
or Over threads 3 3/8" No. of threads per inch 6 Area supported by each stay 360 sq ins

Working pressure by Rules 243 lbs Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part, 1 5/8" & 1 3/4"  
or Over threads 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay 65.88 sq ins. 78.6 sq ins



Working pressure by Rules 231 lbs. Are the stays drilled at the outer ends NO. Margin stays: Diameter <sup>At turned off part.</sup> 2" <sub>or</sub> <sup>Over threads</sup> 2"  
 No. of threads per inch 9 Area supported by each stay 93.5 sq in Working pressure by Rules 264.7 lbs.  
 Tubes: Material Iron External diameter <sup>Plain</sup> 3" Thickness <sup>8 W.G.</sup> 1/4" 5/16" No. of threads per inch 9  
 Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 250 lbs. Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 37" x 33" x 1 5/32" No. of rivets and diameter of rivet holes 32 1 9/16"  
 Outer row rivet pitch at ends 11" Depth of flange if manhole flanged 4 1/4" Steam Dome: Material   
 Tensile strength  Thickness of shell  Description of longitudinal joint   
 Diameter of rivet holes  Pitch of rivets  Percentage of strength of joint <sup>Plate</sup>  <sub>Rivets</sub>   
 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 Smoke tube Manufacturers of <sup>Tubes</sup> Stewart & Lloyds <sub>Steel forgings</sub> Bolwilles Ltd. <sub>Steel castings</sub>   
 Number of elements 57 each boiler Material of tubes solid drawn steel Internal diameter and thickness of tubes 1 7/8" 2 1/2" m-m.  
 Material of headers mild steel Tensile strength 26-30 tons Thickness 1 7/16" Can the superheater be shut off and 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 ins. Are the safety valves fitted with easing gear Yes. Working pressure as per Rules approved plan 225 lbs. Pressure to which the safety valves are adjusted 235 lbs. Hydraulic test pressure: tubes 1,200 lbs. forgings and castings 675 lbs. and after assembly in place 1,000 lbs. Are drain ~~each~~ 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,  
 (W. Gray & Co., Ltd.) Manufacturer.

Dates of Survey <sup>During progress of work in shops - - -</sup>  Are the approved plans of boiler and superheater forwarded herewith Yes. <sub>(If not state date of approval.)</sub>  
<sup>while building</sup> <sub>During erection on board vessel - - -</sub>  Total No. of visits \_\_\_\_\_

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. S.S. "Ionian" W. Spl Rpt No 17837

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed under Special Survey and in accordance with the approved plans for a working pressure of 225 lbs per sq inch. The materials and workmanship have been found good.  
Upon completion the Boilers were tested in the presence of the undersigned with hydraulic pressure 388 lbs per sq inch, showed no signs of weakness and were found tight and sound in every respect at that pressure.

Survey Fee ... See accompanying Machinery Report. When applied for, 19  
 Travelling Expenses (if any) ... See accompanying Machinery Report. When received, 19

L. Brooke Smith  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 13 SEP 1938  
 Assigned See F. B. Rpt.

