

REPORT ON BOILERS.

Sld. No. 29353.
Mol No. 12766

Received at London Office

1/11/1926 When handed in at Local Office 1/11/1926 Port of **Middlesbrough**
 No. in Survey held at **Stockton on Tees** Date, First Survey **16th July 1924** Last Survey **1/11/1926**
 on the **Single End Boiler for J. Blumer & Co. Ltd. Sunderland** Number of Visits **30** Gross **3517** Net **2175**
S.S. CYDONIA Built at **Sunderland** By whom built **John Blumer & Co. Ltd.** Yard No. **258** When built **1927**
 Engines made at **Sunderland** By whom made **John Dickinson & Sons Ltd.** Engine No. **878** When made **1927**
 Boilers made at **Stockton** By whom made **Messrs Riley Bros Ltd** Boiler No. **5525** When made **1925**
 Nominal Horse Power **301** Owners **Stag Line Ltd** Port belonging to **North Shields**

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Steel Coy of Scotland & South Durham Steel & Iron Coy. (Letter for Record **(S)**)
 Total Heating Surface of Boilers **880 sq ft** Is forced draught fitted **No** Coal or Oil fired **coal**
 Pressure as per. and Description of Boilers **One Single end.** Working Pressure **120 lbs**
 Test pressure tested by hydraulic pressure to **230 lbs** Date of test **1/11/26** No. of Certificate **6517** Can each boiler be worked separately **Yes**
 Valves fitted **30** No. and Description of safety valves to each boiler **Two Spring loaded**
 Area of each set of valves per boiler **8.149 sq ins** Pressure to which they are adjusted **125 lbs** Are they fitted with easing gear **Yes**
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **No** Non-return Stop Valve fitted **Yes**
 Smallest distance between boilers or uptakes and bunkers or woodwork **7 ft** Is oil fuel carried in the double bottom under boilers **No**
 Smallest distance between shell of boiler and tank top plating **Fitted in Iron Dick.** Is the bottom of the boiler insulated **No**
 Largest internal dia. of boilers **10'-0"** Length **10'-0"** Shell plates: Material **Steel** Tensile strength **28-32 tons**
 Thickness **5/8"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams **OR - LAP**
 Rivets **(Double Butt straps) Double Riveted 3 rivets per pitch** Diameter of rivet holes in **15/16"** Pitch of rivets **3" & 6"**
 Percentage of strength of circ. end seams **plate 68.66 rivets 45.00** Percentage of strength of circ. intermediate seam **plate 82.0 rivets 85.2 combined 92.4**
 Percentage of strength of longitudinal joint **plate 82.0 rivets 85.2 combined 92.4** Working pressure of shell by Rules **125 lbs**
 Thickness of butt straps **outer 8 3/4" x 17/32" inner 8 3/4" x 2 1/32"** No. and Description of Furnaces in each Boiler **Two Plain**
 Material **Steel** Tensile strength **26-30 tons** Smallest outside diameter **38"**
 Length of plain part **top 75 11/16" bottom 103"** Thickness of plates **19/32"** Description of longitudinal joint **weld**
 Dimensions of stiffening rings on furnace or c.c. bottom **Yes** Working pressure of furnace by Rules **123 lbs**
 End plates in steam space: Material **Steel** Tensile strength **26-30 tons** Thickness **7/8"** Pitch of stays **16 1/2" TO 15 1/2" TO TUBES**
 How are stays secured **Double nuts and loose washers 8 1/2" x 5/8"** Working pressure by Rules **124 lbs**
 End plates: Material **Steel** Tensile strength **26-30 tons** Thickness **7/8"**
 Can pitch of stay tubes in nests **10 5/16"** Pitch across wide water spaces **14" x 8 1/2"** Working pressure **front 141 lbs back 132 "**
 Orders to combustion chamber tops: Material **Steel** Tensile strength **28-32 tons** Depth and thickness of girder **6 1/2" x 1 1/4"**
 centre **6 1/2" x 1 1/4"** Length as per Rule **28"** Distance apart **9"** No. and pitch of stays **2 c 8 1/2"**
 Tensile strength **26-30 tons** Thickness: Sides **17/32"** Back **17/32"** Top **17/32"** Bottom **13/16"**
 Pitch of stays to ditto: Sides **9 1/4" x 8 1/2"** Back **10" x 7 3/4"** Top **9" x 8 1/2"** Are stays fitted with nuts or riveted over **nuts**
 Working pressure by Rules **120 lbs** Front plate at bottom: Material **Steel** Tensile strength **26-30 tons**
 Thickness **7/8"** Lower back plate: Material **Steel** Tensile strength **26-30 tons** Thickness **7/8"**
 Pitch of stays at wide water space **14" x 7 3/4"** Are stays fitted with nuts or riveted over **nuts**
 Working Pressure **141 lbs** Main stays: Material **Steel** Tensile strength **28-32 tons**
 Diameter **2 3/8"** No. of threads per inch **6** Area supported by each stay **301.5 lb sq**
 Working pressure by Rules **130 lbs** Screw stays: Material **Steel** Tensile strength **26-30 tons**
 Diameter **1 3/8"** No. of threads per inch **9** Area supported by each stay **77.5 sq**

Working pressure by Rules **130 lbs** Are the stays drilled at the outer ends **NO** Margin stays: Diameter { At turned off part, **1 1/2"** or Over threads **1 1/2"** Working pressure by Rules **142 lbs**

No. of threads per inch **9** Area supported by each stay **88**

Tubes: Material **Iron** External diameter { Plain **3 3/4"** Stay **3"** Thickness { **NO 10 SWG** **5/16"** No. of threads per inch **9**

Pitch of tubes **4 3/8" x 4 1/4"** Working pressure by Rules **130 lbs** Manhole compensation: Size of opening in shell plate **20" x 16"** Section of compensating ring **7 x 3 1/4" mild steel** No. of rivets and diameter of rivet holes **86 c 1 7/16"**

Outer row rivet pitch at ends **6 1/2"** Depth of flange if manhole flanged **✓** 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

FOR
RILEY BROS. (BOILERMAKERS) LIMITED.
The foregoing is a correct description,
J. H. Shields SECRETARY, Manufacturer.

Dates of Survey { During progress of work in shops - 1924. Jul 16. Aug 7. Oct 22. Nov 5. 13. 20. 26. 30
while building { During erection on board vessel - 1925. Jan 15. 26. Mar 25. 30. Apr 3. 7. 17. 24. 30
Total No. of visits **36**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) Duplicate of Builders
NO 5454. Mdb Rpt. NO 11898.

This boiler has been constructed under Special Survey: is of good material and workmanship & on completion was tested by hydraulic pressure with satisfactory results

It has now been securely fitted on board the vessel, and the safety valves adjusted under steam.
For Notation see Machinery Report.

Survey Fee ... £ **5 : 17 : -** When applied for **MONTHLY A/c.**
Travelling Expenses (if any) £ : : When received, **192**

A. T. Griffiths

W. H. Roberts

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 14 JAN 1921**

Assigned

See Sld. H.E. No 29353



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