

## REPORT ON BOILERS.

No. 29915

Received at London Office

19 DEC 1928

Date of writing Report 1928 When handed in at Local Office 17 Dec 1928 Port of Sunderland

No. in Reg. Book. Survey held at Sunderland Date, First Survey Last Survey Dec 14 1928

on the S. S. "ATHELSTANE" (Number of Visits ) Gross Tons Net

Master Built at Goole By whom built Goole Shipbuilding & Repairing Co. Yard No. 284. When built 1928.

Engines made at Sunderland By whom made MacColl & Pollock, L<sup>d</sup>. Engine No. 364. When made 1928.

Boilers made at Sunderland By whom made MacColl & Pollock, L<sup>d</sup>. Boiler No. 364. When made 1928.

Nominal Horse Power 166 Owners United Molanes & Co. L<sup>d</sup>. Port belonging to Liverpool.

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

Manufacturers of Steel James Dunlop & Co., L<sup>d</sup>. (Letter for Record (S) )

Total Heating Surface of Boilers 3265 sq ft Is forced draught fitted No Coal or Oil fired coal.

No. and Description of Boilers Two - Single ended. Marine type. Working Pressure 180 lbs sq in

Tested by hydraulic pressure to 320 lbs sq in Date of test 28-9-28 No. of Certificate 4008 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 40.56 sq ft No. and Description of safety valves to each boiler Two - Direct Spring loaded.

Area of each set of valves per boiler { per Rule 10.46 sq in as fitted 11.88 sq in Pressure to which they are adjusted 185 lbs sq in 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 ~~on woodwork~~ 5' 2" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2' 5" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12' 9 1/16" Length 11' 0" (FULL) Shell plates: Material Steel Tensile strength 29 to 33 tons sq in

Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. lap. inter. 3 1/4" } Pitch of rivets { 7 13/16" }

Long. seams T. R. D. B. S. Diameter of rivet holes in { circ. seams 1 1/8" long. seams 1 1/8" }

Percentage of strength of circ. end seams { plate 68.96 rivets 42.19 } Percentage of strength of circ. intermediate seam { plate 85.6 rivets 91.77 }

Percentage of strength of longitudinal joint { plate 89.5 rivets 91.77 } Working pressure of shell by Rules 181 lbs sq in

Thickness of butt straps { outer 7/8" inner 1" } No. and Description of Furnaces in each Boiler Two - Corrugated - Deighton type.

Material Steel Tensile strength 26 to 30 tons sq in Smallest outside diameter 3' 9 3/8"

Length of plain part { top bottom } Thickness of plates { crown 3 9/16" bottom 3 9/16" } Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 180 lbs sq in

End plates in steam space: Material Steel Tensile strength 26 to 30 tons sq in Thickness 1 1/8" Pitch of stays 19" x 17"

How are stays secured Double Nuts Working pressure by Rules 180.8 lbs sq in

End plates: Material { front back } Steel Tensile strength { 26 to 30 tons sq in Thickness { 7/8" 13/16" }

Mean pitch of stay tubes in nests 11 1/8" Pitch across wide water spaces 14" Working pressure { front 192.8 lbs sq in (all water spaces) back 192 lbs sq in }

Orders to combustion chamber tops: Material Steel Tensile strength 29 to 33 tons sq in Depth and thickness of girder

centre 7 1/4" x 1 5/8" Length as per Rule 31 1/2" Distance apart 8 1/2" No. and pitch of stays

each 2 x 9 3/8" Working pressure by Rules 181.8 lbs sq in Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons sq in Thickness: Sides 1 1/16" Back 2 1/32" Top 1 1/16" Bottom 1 5/16"

Pitch of stays to ditto: Sides 10 1/2" x 8" Back 9" x 9 1/4" Top 9 3/8" x 8 1/2" Are stays fitted with nuts or riveted over Fitted with Nuts.

Working pressure by Rules Sides 190 lbs sq in Back 180 lbs sq in Top 194 7/16 lbs sq in Front plate at bottom: Material Steel Tensile strength 26 to 30 tons sq in

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26 to 30 tons sq in Thickness 3/4"

Pitch of stays at wide water space 13" x 9" Are stays fitted with nuts or riveted over Fitted with Nuts.

Working Pressure 182 lbs sq in Main stays: Material Steel Tensile strength 28 to 32 tons sq in

Diameter { At body of stay, or Over threads } 2 7/8" & 2 3/4" No. of threads per inch 6 Area supported by each stay 3230" x 2800"

Working pressure by Rules 189 lbs sq in & 197 lbs sq in Screw stays: Material Steel Tensile strength 26 to 30 tons sq in

Diameter { At turned off part, or Over threads } 1 5/8" No. of threads per inch 9 Area supported by each stay Sides 840" Backs 23.250" Tops 23.750"

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Working pressure by Rules *181.8 lbs* 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 *9* Area supported by each stay *1000"* Working pressure by Rules *181.8 lbs*

Tubes: Material *Wrought Iron* External diameter { Plain *3 1/4"* Stay *3 1/4"* Thickness { *9 W.G.* *1/4" & 5/16"* No. of threads per inch *9*

Pitch of tubes *4 3/8" x 4 1/2"* Working pressure by Rules *Plain 180 lbs, Stay 180 & 188 lbs* Manhole compensation: Size of opening in shell plate *16" x 12"* Section of compensating ring *7 1/2" x 6 1/2" x 1 1/32"* No. of rivets and diameter of rivet holes *32 @ 1 1/8" Dia.*

Outer row rivet pitch at ends *7 13/16"* 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

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 *Yes*

The foregoing is a correct description,  
PER PRO MACCOLL & POLLOCK LTD.  
*J. H. Pelling* Manufacturer.

Dates of Survey { During progress of work in shops - - } *Please see Mech. Rpt.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - }

Total No. of visits

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

*The Materials and Workmanship are good.*  
*The Boilers have been built under Special Survey, and satisfactorily fitted in the vessel.*  
*For notation please see Machinery Report.*

Survey Fee ... *£ Charged on Machinery Report* When applied for, 192

Travelling Expenses (if any) £ When received, 192

*A. I. Griffith.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *WED. 2 JAN 1929*

Assigned *See Sub rpt. attached*