

REPORT ON BOILERS.

No. *4588*

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office MON. 21 MAY 1906

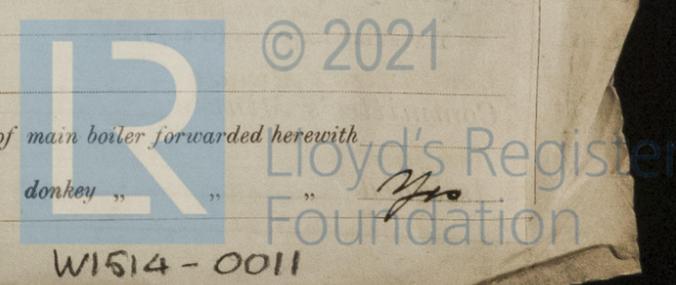
No. in Survey held at Hickton & Middlesbrough Date, first Survey January 4 Last Survey May 2 1906
 Reg. Book 51 on the Donkey Boiler No 2081 of S.S. Lusitania. (Number of Visits 9)
 Master B. de Souza Menezes Built at Middlesbrough By whom built Sir Raylton Dixon & Co. Ltd When built 1906
 Engines made at Newcastle By whom made R & E Marine Eng Co Ltd when made 1906
 Boilers made at do By whom made do when made 1906
 Registered Horse Power _____ Owners Empregu Nacional de Navegacao Port belonging to Lisbon

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel John Brown & Son Ltd

(Letter for record _____) Total Heating Surface of Boilers 948 sq ft Is forced draft fitted no No. and Description of Boilers One Cyl Tubular Working Pressure 110 lb Tested by hydraulic pressure to 200 lb Date of test 2.2.06
 No. of Certificate 3596 Can each boiler be worked separately no Area of fire grate in each boiler 34 sq ft No. and Description of safety valves to each boiler Two direct spring Area of each valve 9.62 sq in Pressure to which they are adjusted 100 lb
 Are they fitted with easing gear Yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no
 Smallest distance between boilers or uptakes and bunkers or woodwork 21 in Dia. of boilers 10-6 Length 10-0
 Material of shell plates Steel Thickness 2 1/32 Range of tensile strength 29/32 Are the shell plates welded or flanged no
 Descrip. of riveting: cir. seams 2 S Riv long. seams 2 Flat riv Diameter of rivet holes in long. seams 15/16 Pitch of rivets 3 5/8
 Lap of plates or width of butt straps 6 1/2 Per centages of strength of longitudinal joint rivets 74.8% Working pressure of shell by rules 101 lb Size of manhole in shell 16 x 12 Size of compensating ring 6 x 2 7/32 plate 74.3%
 No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3-2 Length of plain part top 6-8 Thickness of plates crown 9/16 bottom _____
 Description of longitudinal joint Welded No. of strengthening rings _____ Working pressure of furnace by the rules 111 lb Combustion chamber plates: Material Steel Thickness: Sides 2 1/32 Back 1 9/32 Top 2 1/32 Bottom 9/16 Pitch of stays to ditto: Sides 9 1/2 x 9 Back 9 x 8 1/2 Top 8 1/2 x 9 If stays are fitted with nuts or riveted heads Riveted Working pressure by rules 110 lb Material of stays Iron Diameter at smallest part 1.45 in Area supported by each stay 85.5 sq in Working pressure by rules 104 lb End plates in steam space: Material Steel Thickness 2 3/32 Pitch of stays 14 x 14 1/4 How are stays secured nut & wash Working pressure by rules 116 lb Material of stays Iron Diameter at smallest part 3.45 in Area supported by each stay 199.5 sq in Working pressure by rules 120 lb Material of Front plates at bottom Steel Thickness 2 3/32 Material of lower back plate Steel Thickness 2 3/32 Greatest pitch of stays 13 x 9 Working pressure of plate by rules 136 lb Diameter of tubes 3 1/4 Pitch of tubes 4 5/8 x 4 3/16 Material of tube plates Steel Thickness: Front 2 3/32 Back 3/4 Mean pitch of stays 11.46 Pitch across wide water spaces 13 3/4 Working pressures by rules 119 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 6 1/2 x 1 1/4 Length as per rule 24.2 Distance apart 8 1/2 Number and pitch of Stays in each One 9 Working pressure by rules 116 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately _____ Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____ stiffened with rings _____ Distance between rings _____ Working pressure by rules _____ End plates: Thickness _____ How stayed _____ Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

VERTICAL DONKEY BOILER— No. _____ Description _____ Manufacturers of steel _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint Rivets _____ Plates _____ Working pressure of shell by rules _____ Thickness of shell crown plates _____ Diameter of do. _____ No. of Stays to do. _____ Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____ Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

The foregoing is a correct description.
 THOMAS SUDRON & CO LIMITED.
 Manufacturer. of Donkey boiler.
 Dates: During progress of work in shops - - - 1906 January 14. 10. 24. 26. February 2
 Survey while building - - - - - March 21. 22 April 24 May 3
 Total No. of visits 9
 Is the approved plan of main boiler forwarded herewith _____
 " " " donkey " " _____
 W1514-0011



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

This boiler has been built under Special Survey.
 The materials and workmanship are good and efficient
 After satisfactorily withstanding the hydraulic test it has
 been fitted and secured on board and tried under steam.

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee...	£	:	:	When applied for.
Special	£	:	:	2 3 1906
Donkey Boiler Fee	£	2	2	When received.
Travelling Expenses (if any)	£	:	:	5 3 1906

R. D. Philston *Geo A. Milner*
 Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

TUES. 22 MAY 1906

Committee's Minute

Assigned

See Minute on
 Inve. Rpt. No. 50737



Lloyd's Register
 Foundation