

Mem R. S. Stephens & Co. Boiler No 566 Shields Eng. E 111. S. B. C. 1590

Rpt. 4. REPORT ON MACHINERY. No. 52879

Port of Newcastle on Tyne Received at London Office FRI. 10. MAY. 1907

No. in Survey held at Newcastle Date, first Survey 27 Dec '06 Last Survey 7 May 1907

Reg. Book. on the Blue Sea K "Swan" (Number of Visits 79)

Master Goble Built at Goble By whom built Goble S B & Rep: G L Tons 45 (96) Gross 1907 Net 1907

Engines made at N Shields By whom made Shields Eng: G L when made 1907

Boiler made at Newcastle By whom made R. S. Stephens & Co when made 1907

Registered Horse Power 50 Owners Wright & Mason Port belonging to Flewood

Nom. Horse Power as per Section 28 50 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12 1/2, 21, 34 Length of Stroke 25 Revs. per minute 110 Dia. of Screw shaft 7.42 Material of W.I.

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes

Dia. of Tunnel shaft 7.42 Dia. of Crank shaft journals 6.72 Length of stern bush 2'-10"

Collars 4 Dia. of screw 9'-0 Pitch of Screw 10'-1 1/2 No. of Blades 4 State whether moveable No Total surface 29.25 ft.

No. of Feed pumps 2 Diameter of ditto 2 3/8 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 2 3/8 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Sizes of Pumps duplex 5 1/4 x 3 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 of 2" dia + ejector to all parts

In Holds, &c. 1 of 2" to hold. 2 of 2" to wash well

No. of Bilge Injections 1 sizes 3 1/2 Connected to condenser, or to circulating pump cp Is a separate Donkey Suction fitted in Engine room & size Yes. 2"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Hold Suctions & Winch Steam & Exhaust How are they protected Hold Suctions wood casing

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Dates of examination of completion of fitting of Sea Connections Yes of Stern Tube Yes Screw shaft and Propeller Yes

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J Spence & Son

Total Heating Surface of Boilers 1500 Is Forced Draft fitted No No. and Description of Boilers 2 No. Cyl. Incl. S Ind.

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 15-3-07 No. of Certificate 7442

Can each boiler be worked separately Yes Area of fire grate in each boiler 50 No. and Description of Safety Valves to each boiler two direct spring Area of each valve 4.9 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 12-7 1/16 Length 10.6 Material of shell plates S

Thickness 1 1/16 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d lap

long. seams d ship Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7/8 Lap plates or width of butt straps 16

Per centages of strength of longitudinal joint rivets 87 Working pressure of shell by rules 185 Size of manhole in shell 16 x 12

Size of compensating ring 7 x 1 1/16 No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 38 1/2

Length of plain part 75 Thickness of plates 3/4 Description of longitudinal joint Weld No. of strengthening rings lay

Working pressure of furnace by the rules 195 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 1/2 Top 5/8 Bottom 7/8

Pitch of stays to ditto: Sides 8 1/2 x 8 1/2 Back 9 1/4 x 9 Top 8 1/2 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 195

Material of stays S Diameter at smallest part 1.73 Area supported by each stay 69 Working pressure by rules 200 End plates in steam space: Material S Thickness 1 1/16 Pitch of stays 16 x 17 How are stays secured d & w Working pressure by rules 196 Material of stays S

Diameter at smallest part 5.05 Area supported by each stay 272 Working pressure by rules 185 Material of Front plates at bottom S

Thickness 1 Material of Lower back plate S Thickness 1 1/16 Greatest pitch of stays as per plan Working pressure of plate by rules 180

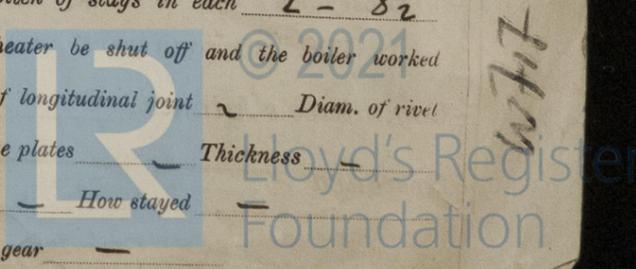
Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 3/4 Material of tube plates S Thickness: Front 1 Back 13/16 Mean pitch of stays 9 1/2

Pitch across wide water spaces 14 Working pressures by rules 182 Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 1/2 x 13 1/4 Length as per rule 30 1/2 Distance apart 8 Number and pitch of stays in each 2 - 8 1/2

Working pressure by rules 230 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes



717-2019

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description None fitted

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with casing 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 _____ Rivets _____ Plates _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius 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 _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, Spare coupling bolts & nuts, Spare feed & Belge pump Valves and seats, Assorted iron bolts & nuts, Spare propeller,

The foregoing is a correct description,

FOR THE SHIELDS ENGINEERING & DOCK CO. LIMITED.

ROBERT STEPHENSON & CO., LIMITED.

J. H. Skentelberry Manufacturer.

J. H. Thompson Secretary.

Dates of Survey while building: During progress of work in shops - - - - -
During erection on board vessel - - - - -
Total No. of visits 17

1906. Dec 27. 1907 Jan 9. 1909 Feb 5. 1906 Mar 11. 1909 Apr 24. 09 May 1. 07

Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 24.4.07 Slides 24.4.07 Covers 22.3.07 Pistons 29.4.07 Rods 29.4.07
Connecting rods 24.4.07 Crank shaft 24.4.07 Thrust shaft 22.3.07 Tunnel shafts ✓ Screw shaft 22.3.07 Propeller 24.4.07
Stern tube 29.4.07 Steam pipes tested 3.5.07 Engine and boiler seatings 29.4.07 Engines holding down bolts 25.07
Completion of pumping arrangements 7.5.07 Boilers fixed 4.5.07 Engines tried under steam 4.5.07
Main boiler safety valves adjusted 7.6.07 Thickness of adjusting washers 13" SVR 3/8" (1818 ATG)

Material of Crank shaft Steel Identification Mark on Do. 1818 ATG Material of Thrust shaft Steel Identification Mark on Do. 1818 ATG
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. 1818 ATG
Material of Steam Pipes Copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. The Mach^y has been built under special survey, the material & workmanship is good.)

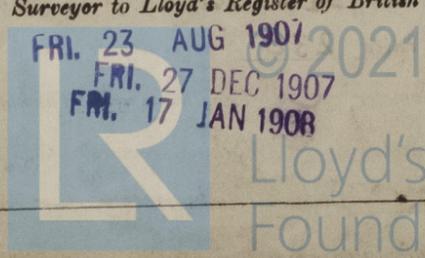
The sea cocks & valves & stern tube were fitted in dry dock, as the vessel went in one day & came out in the early hours of the next morning & no notice was given, we did not see this work done, the Shields Eng^y Co. N^o Shields, were therefore informed by Mr Shallcross, both personally & by letter, that the Mach^y could only be reported as eligible for classification when the sea cocks & valves & the stern tube had been examined in dry dock by a Surveyor to this Society & reported as having been fitted in a satisfactory manner, Mr Skentelberry, the manager stated he had seen the prospective owner & it had been arranged this would be done at Fleetwood at the first convenient opportunity, the correspondence in regard to this is attached herewith.

The Mach^y is eligible in our opinion for classification & the record I.M.C.S.O. when the fitting of the sea cocks & valves & the stern tube have been examined in dry dock & reported as satisfactory.

The amount of Entry Fee..	£ 1 : . :	When applied for,	
Special	£ 10 : 3 :		<u>9 MAY 1907</u>
Donkey Boiler Fee	£ . : . :	When received,	
Travelling Expenses (if any) £	. : . :		<u>19/11/07</u>

Leonard Shallcross
John H Heck
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 20 APR 1907
Assigned Deferred



Certificate (if required) to be sent to the Registrar of Shipping.