

REPORT ON MACHINERY.

No. 20925

Port of Glasgow (Yak No. 13661)

No. in Survey held at Glasgow Date, first Survey 3rd Sept 02 Last Survey 8th Dec 1902

Reg. Book. 8014 on the Donkey Boiler for the steamer Mercury (Number of Visits 12)

Master Port Glasgow By whom built Russell & Co Tons 1903

Engines made at Glasgow By whom made Rankin & Blackmore when made 1903

Boilers made at Glasgow By whom made Rankin & Blackmore when made 1903

Registered Horse Power Owners Port belonging to Newcastle

Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted Is Electric Light fitted

ENGINES, &c.—Description of Engines

Dia. of Cylinders	Length of Stroke	Revs. per minute	Dia. of Screw shaft	No. of Cylinders	No. of Cranks
Is the screw shaft fitted with a continuous liner the whole length of the stern tube			Is the after end of the liner made water tight		
If the liner is in more than one length are the joints burned			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			If two		
liners are fitted, is the shaft lapped or protected between the liners			Length of stern bush		
Dia. of Tunnel shaft	Dia. of Crank shaft journals	Dia. of Crank pin	Size of Crank webs	Dia. of thrust shaft under collars	
Dia. of screw	Pitch of screw	No. of blades	State whether moveable	Total surface	
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps			
In Engine Room			In Holds, &c.		
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size		
Are all the bilge suction pipes fitted with roses		Are the roses in Engine room always accessible	Are the sluices on Engine room bulkheads always accessible		
Are all connections with the sea direct on the skin of the ship		Are they Valves or Cocks			
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates		Are the discharge pipes above or below the deep water line			
Are they each fitted with a discharge valve always accessible on the plating of the vessel		Are the blow off cocks fitted with a spigot and brass covering plate			
What pipes are carried through the bunkers		How are they protected			
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times					
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges					
When were stern tube, propeller, screw shaft, and (all) connections examined in dry dock			Is the screw shaft tunnel watertight		
Is it fitted with a watertight door			<u>Donkey Boiler</u>		

BOILERS, &c.—

(Letter for record (S)) Total Heating Surface of Boilers Is forced draft fitted

No. and Description of Boilers One Single Ended Built Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs

Date of test 23.2.03 Can each boiler be worked separately Area of fire grate in each boiler No. and Description of safety valves to each boiler

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 10'6" Length 10'0" Material of shell plates slit

Thickness 19/32 Range of tensile strength 29 tons Are they welded or flanged no Descrip. of riveting: cir. seams 2 or 3 Lap long. seams T. R. Lap

Diameter of rivet holes in long. seams 7/8" Pitch of rivets 3 7/16" Lap of plates or width of butt straps Lap. 6 3/4"

Per centages of strength of longitudinal joint Working pressure of shell by rules 90 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 6 1/2" x 19/32 No. and Description of Furnaces in each boiler 2 plain Material slit Outside diameter 38"

Length of plain part 7'6" Thickness of plates Description of longitudinal joint Butt straps No. of strengthening rings none

Working pressure of furnace by the rules 93 lbs Combustion chamber plates: Material slit Thickness: Sides 19/32 Back 19/32 Top 7/32 Bottom 19/32

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8 1/2" x 8" Top 9" x 10 1/2" If stays are fitted with nuts or riveted heads Working pressure by rules 93 lbs

Material of stays slit Diameter at smallest part 9 5/8" Area supported by each stay 72.25" Working pressure by rules 109 End plates in steam space:

Material slit Thickness 1/16" Pitch of stays 15" x 15" How are stays secured Working pressure by rules 94 lbs Material of stays slit

Diameter at smallest part 2.34 Area supported by each stay 225" Working pressure by rules 104 Material of Front plates at bottom slit

Thickness 1/16" Material of Lower back plate slit Thickness 9/16" Greatest pitch of stays 8 1/2" Working pressure of plate by rules 157 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" Material of tube plates slit Thickness: Front 1/16" Back 1/16" Mean pitch of stays 11"

Pitch across wide water spaces 13 1/2" Working pressures by rules 93 lbs Girders to Chamber tops: Material slit Depth and thickness of girder at centre (7 1/2" x 1/2") 2 Length as per rule 27.875" Distance apart 10.5" Number and pitch of Stays in each 2 - 9"

Working pressure by rules 90 lbs Superheater or Steam chest; how connected to boiler 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

If 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

W608-0186



DONKEY BOILER— No. _____ Description _____

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 _____ 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 _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— _____

The foregoing is a correct description,

LINDSAY BURNET & CO. Manufacturers

Dates of Survey while building { During progress of work in shops - - } 1902: Sep 3. 12. 14. 25. Oct. 9. 21. 29. Nov. 7. 18. 24. Dec 8.

{ During erection on board vessel - - } _____

Total No. of _____ s. 11

Is the approved plan of main boiler forwarded herewith *H. G.*

" " " donkey " " " _____

General Remarks (State quality of workmanship, opinions as to class, &c.)

This boiler has been constructed under Special Survey & is of good materials & workmanship. It has been sent to Greenock to be fitted on board the vessel.

Certificate (if required) to be sent to _____
(The Surveyors are requested not to write on or beyond the space for Committee's Minute.)

The amount of Entry Fee. . . £ : : _____

Special £ 2 : 2 : _____

Donkey Boiler Fee £ : : _____

Travelling Expenses (if any) £ : : _____

When applied for, JUN 22 1903

When received, 29/6/03

H. Gardner-Smith.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow* 22 JUN 1903

Assigned *Transmit to Greenock.*

