

REPORT ON MACHINERY.

No. 12708

Port of West Hartlepool

Received at London Office

10

No. in Survey held at West HartlepoolDate, first Survey 1st MarchLast Survey 5th Sept

1905

Reg. Book.

(Number of Visits 99)Gross 3112.95Net 2000.71When built 1905on the Steel Steamer "Domira"Master P. L. ReddieBuilt at West Hartlepool By whom built W. Gray & Co. LtdEngines made at West Hartlepool By whom made Central Marine & Works when made 1905Boilers made at West Hartlepool By whom made Central Marine & Works when made 1905

Registered Horse Power

Owners MacLay & MacIntyrePort belonging to GlasgowNom. Horse Power as per Section 28 283Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted NoENGINES, &c.—Description of Engines Triple CompoundNo. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 24" 35" 64" Length of Stroke 42 Revs. per minute 65 Dia. of Screw shaft 1 1/2" Material of IronIs the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tightin the propeller boss No If the liner is in more than one length are the joints burned No If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive No If twoliners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 57"Dia. of Tunnel shaft 11 1/2" as per rule 11 1/2" Dia. of Crank shaft journals 12 1/2" as per rule 12 1/2" Dia. of Crank pin 12 1/2" Size of Crank webs 7 1/2" Dia. of thrust shaft undercollars 12 1/2" Dia. of screw 16 1/2" Pitch of screw 15 1/2" No. of blades 14 State whether moveable No Total surface 82 sq ftNo. of Feed pumps Two Diameter of ditto 3 1/2" Stroke 26" Can one be overhauled while the other is at work NoNo. of Bilge pumps Two Diameter of ditto 4" Stroke 26" Can one be overhauled while the other is at work NoNo. of Donkey Engines Two Sizes of Pumps 6 1/2" x 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Three 3 1/2" In Holds, &c. One 3" & One 3"No. of bilge injections One sizes 5" Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size 3 1/2"Are all the bilge suction pipes fitted with roses No Are the roses in Engine room always accessible No Are the sluices on Engine room bulkheads always accessible NoAre all connections with the sea direct on the skin of the ship No Are they Valves or Cocks bothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates No Are the discharge pipes above or below the deep water line aboveAre they each fitted with a discharge valve always accessible on the plating of the vessel No Are the blow off cocks fitted with a spigot and brass covering plate NoWhat pipes are carried through the bunkers No How are they protected NoAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times NoAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges NoWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock Jan 1905 Is the screw shaft tunnel watertight NoIs it fitted with a watertight door No worked from Top Station

BOILERS, &c.—

(Letter for record S) Total Heating Surface of Boilers 43014 sq ft Is forced draft fitted NoNo. and Description of Boilers Two Cylindrical Working Pressure 180 lb Tested by hydraulic pressure to 260 lbDate of test 2/6/05 Can each boiler be worked separately Yes Area of fire grate in each boiler 54.5 sq ft No. and Description of safety valves toeach boiler Two Spring Area of each valve 8.29 sq in Pressure to which they are adjusted 180 lb Are they fitted with easing gear NoSmallest distance between boilers or uptakes and bunkers or woodwork 17" Mean dia. of boilers 15 1/2" Length 10 1/2" Material of shell plates SteelThickness 1 1/2" Range of tensile strength 27/30 Are they welded or flanged both Descrip. of riveting: cir. seams No long. seams all shopDiameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 19 1/4"Per centages of strength of longitudinal joint 86.3 Working pressure of shell by rules 180 lb Size of manhole in shell 16" x 12"Size of compensating ring Hanged No. and Description of Furnaces in each boiler Three Material Steel Outside diameter 47 1/16"Length of plain part top Thickness of plates bottom 9 1/16" Description of longitudinal joint welded No. of strengthening rings CompoundWorking pressure of furnace by the rules 185 lb Combustion chamber plates: Material Steel Thickness: Sides 10 1/16" Back 10 1/16" Top 10 1/16" Bottom 14 1/16"Pitch of stays to ditto: Sides 8 3/4" Back 9 1/2" Top 9" If stays are fitted with nuts or riveted heads No Working pressure by rules 180 lbMaterial of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 9 1/2" x 8" Working pressure by rules 190 lb End plates in steam space:Material Steel Thickness 1 5/16" Pitch of stays 22 1/2" x 19 1/2" How are stays secured all shop Working pressure by rules 180 lb Material of stays SteelDiameter at smallest part 3 5/8" Area supported by each stay 22 1/2" x 19 1/2" Working pressure by rules 180 lb Material of Front plates at bottom SteelThickness 1 5/16" Material of Lower back plate Steel Thickness 10 1/16" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 180 lbDiameter of tubes 3 1/2" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 2 1/2" Mean pitch of stays 9"Pitch across wide water spaces 14 1/4" Working pressures by rules 189 lb Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 28 1/4" Distance apart 8" Number and pitch of Stays in each two 9"Working pressure by rules 185 lb Superheater or Steam chest; how connected to boiler No Can the superheater be shut off and the boiler workedseparately No Diameter No Length No Thickness of shell plates No Material No Description of longitudinal joint No Diam. of rivetholes No Pitch of rivets No Working pressure of shell by rules No Diameter of flue No Material of flue plates No Thickness NoIf stiffened with rings No Distance between rings No Working pressure by rules No End plates: Thickness No How stayed NoWorking pressure of end plates No Area of safety valves to superheater No Are they fitted with easing gear No

5700-202-0075

Lloyd's Register Foundation

DONKEY BOILER— No. *one* Description *Cylindrical in form*
 Made at *Stockton* By whom made *Riley Bros* When made *1905* Where fixed *Atkinholme*
 Working pressure *85 lb* tested by hydraulic pressure to *170 lb* No. of Certificate *2498* Fire grate area *26 1/2* Description of safety valves *Spring loaded*
 No. of safety valves *two* Area of each *2 29* Pressure to which they are adjusted *85 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *9' 6"* Length *9' 0"* Material of shell plates *Steel* Thickness *1 1/2"* Range of tensile strength *27 02* Descrip. of riveting long. seams *3/4" in lap* Dia. of rivet holes *1 1/16"* Whether punched or drilled *drilled* Pitch of rivets *1 1/8"*
 Lap of plating *6 1/2"* Per centage of strength of joint *77 2 1/2%* Thickness of shell *1 1/2"* Radius of do. *—* No. of Stays to do. *14*
 Dia. of stays. *1 1/4"* Diameter of furnace *Top 2' 10" Bottom 7' 9"* Length of furnace *5' 10"* Thickness of furnace plates *1/2"* Description of joint *welded* Thickness of furnace crown plates *3 1/2" 5 1/2"* Stayed by *cross stays* Working pressure of shell by rules *86 lb*
 Working pressure of furnace by rules *86 lb* Diameter of uptake *3 1/2"* Thickness of uptake plates *1 1/4" 9/16"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *Two top end bolts. Two bottom end bolts. Two main bearing bolts. One set coupling bolts. One set feed pump valves. One set Relief pump valves. One High Pressure piston springs. One Pressure shaft & Propeller.*

The foregoing is a correct description,

Wm. F. Borrowdale Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1905 Mar. 1, 3, 6, 7, 8, 9, 10, 13, 20, 21, 22, 23, 24, 27, 28, 29, 30, 31 Apr. 3, 4, 5, 6, 7, 10, 11, 13, 14, 17, 18, 19, 20, 26, 27, 28 May 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12*
 During erection on board vessel— *15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 29, 30, 31 June 1, 2, 5, 6, 7, 8, 9, 10, 15, 16, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30 July 3, 4, 6, 7, 10, 12, 15, 17, 18, 19, 20, 21 Aug 3, 4*
 Total No. of visits *99*

Is the approved plan of main boiler forwarded herewith *Yes* To be referred for duplicate
 " " " donkey " " " *No*

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

The main steam pipe (copper) have been tested to 450 lb and with head test found good.

This case is similar in all respects to the "Castland" West Hartlepool Report No. 12630 dated 28 May 1905.

The Machinery and Boilers of this Steamer have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification + L.R.C. 9. 05. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.R.C. 9. 05.

Sam. Jones
14. 9. 05

The amount of Entry Fee. £ 2 : :
 Special £ 34 : :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *13-9-1905*
 When received, *13-9-1905*

Sam. Jones
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 15 SEP 1905

Assigned

+ L.R. 6 9 05



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MACHINERY CERTIFICATE
 ISSUED

Certificate (if required) to be sent to West Hartlepool.

(The Surveyor is requested not to write on or below the space for Committee's Minute.)