

REPORT ON MACHINERY.

No. 12864

MES. 20 MAR 1906

Port of WEST HARTLEPOOL

Received at London Office

No. in Survey held at WEST HARTLEPOOL

Date, first Survey 29th June 1905

Last Survey 11th March 1906

Reg. Book.

1144 on the S.S. Clan Mathieson

(Number of Visits 4)

Gross 4774.84

Net 3052.59

Master A. H. Bowie Built at W. Hartlepool By whom built Furness, Withy & Hold

When built 1906

Engines made at Hartlepool By whom made Richardson, Westgarth & Co. Ltd. when made 1906

Boilers made at - By whom made - when made 1906

Registered Horse Power Owners Capper, Irvine & Co Port belonging to Glasgow

Nom. Horse Power as per Section 28 448 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 26.43.71 Length of Stroke 48 Revs. per minute 69 Dia. of Screw shaft as per rule 14.9 as fitted 16.14 Material of screw shafts Alloy Steel

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 - 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 - Length of stern bush 7'-5"

Dia. of Tunnel shaft as per rule 13 1/2 as fitted 14 Dia. of Crank shaft journals as per rule 4 1/8 as fitted 15 Dia. of Crank pin 15 Size of Crank webs 9 3/4 x 29 Dia. of thrust shaft under

collars 16 Dia. of screw 17.9 Pitch of screw 17.9 No. of blades 4 State whether moveable No Total surface 91 sq. ft.

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 6 x 4 x 6 7 x 2 1/2 x 11 x 10 x 11 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3" Dia. In Holds, &c. Twelve (2) 3 1/2" dia in each

hold (1) 2 1/2" in fore peak (1) 2 1/2" in sumner well

No. of bilge injections 1 sizes 6 1/2 Connected to condenser, or to circulating pump Cir Is a separate donkey suction fitted in Engine room & size 3 1/2"

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 None

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 None How are they protected -

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock - Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Engine room platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 6028 Is forced draft fitted Yes

No. and Description of Boilers 2 Single Ended. Cyl. Ind. Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs

Date of test Can each boiler be worked separately Yes Area of fire grate in each boiler 62.9 No. and Description of safety valves to

each boiler (2) 3 3/4" dia. Spring Area of each valve 22.06 Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-3" Mean dia. of boilers 16'-2" Length 11'-9" Material of shell plates Steel

Thickness 17/16 Range of tensile strength 28/32 Are they welded or flanged No Descrip. of riveting: cir. seams T.R. long. seams TR

Diameter of rivet holes in long. seams 17/16 Pitch of rivets 9 3/4 Lap of plates or width of butt straps 21"

Per centages of strength of longitudinal joint rivets 86.0 Working pressure of shell by rules 201 lbs Size of manhole in shell 13' x 16 1/2"

plate 85.25 Working pressure of shell by rules 201 lbs Size of manhole in shell 13' x 16 1/2"

Size of compensating ring 29 x 30 x 17/16 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 50 3/4"

Length of plain part top 7 1/2 Thickness of plates crown 4/32 Description of longitudinal joint 1/2 welded No. of strengthening rings -

bottom 7 1/2 Working pressure of furnace by the rules 212 lbs Combustion chamber plates: Material Steel Thickness: Sides 4/32 Back 2 1/2 Top 4/32 Bottom 1"

Pitch of stays to ditto: Sides 9 x 7 3/4 Back 8 3/4 x 8 1/2 Top 8 1/4 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 212 lbs

Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 71 sq. Working pressure by rules 202 lbs End plates in steam space:

Material Steel Thickness 1 3/32 Pitch of stays 16 1/4 x 16 1/4 How are stays secured 8 N.W. Working pressure by rule 202 lbs Material of stays Steel

Diameter at smallest part 2 3/4 Area supported by each stay 280 sq. Working pressure by rules 206 lbs Material of Front plates at bottom Steel

Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 13 1/2 Working pressure of plate by rules 211 lbs

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates Steel Thickness: Front 1 Back 3/4 Mean pitch of stays 7 1/2"

Pitch across wide water spaces 13 1/2 Working pressures by rules 211 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8' x 1 3/4 Length as per rule 20 1/2 Distance apart 8 1/2 Number and pitch of Stays in each (2) 8 1/4"

Working pressure by rules 208 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 -

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:— *Propeller Shaft. 2 Propeller blades & Spare gear as per rules*

The foregoing is a correct description,
 for **RICHARDSONS, WESTGARTH & CO., LIMITED** Manufacturer.
R. M. M. M.

Dates { During progress of work in shops— } 1905. *June 29, July 5, 6, Aug. 22, 24, 30, 31, Sept. 11, 14, 26, Oct. 2, 6, 11, 12, 17, 24, 26, 30, 31, Nov. 2, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 20, 21, 22, 25, 26, 27*
 of Survey { During erection on board vessel— } *Dec. 1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 21, 29, 1906. Jan. 5, 9, 18, 19, 22, 25, 25, 31, Feb. 1, 5, 12, 16, Mar. 5.*
 while building { Total No. of visits } *64* Is the approved plan of main boiler forwarded herewith *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engines & boilers of this vessel have been built under special survey & are in accordance with the requirements of the rules. The materials & workmanship are good. The Machinery was tried under steam & found to work well & in my opinion is eligible to have the notation of +L.M.C 306 in the Register Books.*

It is submitted that this vessel is eligible for THE RECORD *L.M.C. 306 F.D. Elec. Light.*

best for the pool

Certificate (if required) to be sent to

The amount of Entry Fee. . . £ 3 : : When applied for, 17. 5. 1906
 Special £ 42 : 8 : : When received, 20. 3. 06
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : :
Shed Shoultan
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 20 MAR 1906**
 Assigned *+L.M.C 306 F.D. Elec. Light.*

