

Rpt. 4.

REPORT ON MACHINERY.

Hwe. Rpt. No. 56134.

C/283

No. 23916.

MUN. 15 FEB 1909

JUL 8 DEC 1908

No. in Survey held at
Reg. Book.Port of Sunderland
Sunderland
on the Ss BrantfordDate, first Survey 17th Dec 1907 Last Survey 17th Dec 1908(Number of Visits 69)Master JamesBuilt at NewcastleBy whom built Northumberland S. B. Co.Tons { Gross 4844Net 2067When built 1908Engines made at SunderlandBy whom made John Richardson Maltgarth & Co. Ltd.when made 1908Boilers made at SunderlandBy whom made Sittowhen made 1908

Registered Horse Power

Owners Furness Withy & Co. Ltd.Port belonging to West HartlepoolCom. Horse Power as per Section 28 562Is Refrigerating Machinery fitted for cargo purposes No.Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines

Inverted triple expansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 28", 46", 77"Length of Stroke 54"Revs. per minute 70Dia. of Screw shaft 15.63"as per rule 15.63"Material of Ironthe screw shaft fitted with a continuous liner the whole length of the stern tube Yes (on working)the propeller boss Yes If the liner is in more than one length are the joints burned Yesbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive YesIf two liners are fitted, is the shaft lapped or protected between the liners no, 2 liners fitted to spareDia. of Tunnel shaft 14.21" as per rule 14.21" Dia. of Crank shaft journals 14.95" as per rule 14.95"Dia. of Crank pin 15.4" Size of Crank webs 21 1/2 x 10 1/2 Dia. of thrust shaft underlars 15 1/2 Dia. of screw 18.6" Pitch of Screw 19.6" No. of Blades 4 State whether moveable No Total surface 106 sq ftNo. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 30" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 30" Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 12x12 & 7 1/2 x 4 1/2 x 10 No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room 4 of 3 1/2 In Holds, &c. two of 3 1/2 in eachof Bilge Injections one sizes 6" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 4"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 Yesall connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks boththey 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 abovethey 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 Yesat pipes are carried through the bunkers none How are they protected Yesall Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yesthe Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yesof examination of completion of fitting of Sea Connections Dec 12 1908 of Stern Tube 18.11.08 Screw shaft and Propeller 18.11.08Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes Worked from Yes, top platformMATERIALS, &c.—(Letter for record a) Manufacturers of Steel J. Spencer & Sons & Leeds Forge Co.Heating Surface of Boilers 7925 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 S.E. Cyl. MultiWorking Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 11.4.08 No. of Certificate 2697each boiler be worked separately Yes Area of fire grate in each boiler 62 sq ft No. and Description of Safety Valves toboiler 2 spring Area of each valve 9.6 sq ft Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yesleast distance between boilers or uptakes and bunkers or woodwork 1.9" Mean dia. of boilers 16.3" Length 11.6" Material of shell plates Steelthickness 1 1/4" Range of tensile strength 28 1/2/32 Are the shell plates welded or flanged on Descrip. of riveting: cir. seams Lap, D & T.R.seams L & D.R.S. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 17"entanglements of strength of longitudinal joint 90.6 Working pressure of shell by rules 185.6 lbs Size of manhole in shell 16 x 12"of compensating ring flanged No. and Description of Furnaces in each boiler 3 suspension Material steel Outside diameter 48 1/4"h of plain part top Thickness of plates bottom 19 1/2" Description of longitudinal joint weld No. of strengthening rings Yesing pressure of furnace by the rules 193 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 7/8" Top 5/8" Bottom 7/8"of stays to ditto: Sides 7/8 x 8" Back 8 x 8" Top 8 1/2 x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 210 lbsMaterial of stays steel Diameter at smallest part 1.5" Area supported by each stay 64 sq ft Working pressure by rules 187 lbs End plates in steam space:Material S Thickness 1 1/2" Pitch of stays 15 x 18" How are stays secured drawn Working pressure by rules 206 lbs Material of stays steelArea at smallest part 6.1 Area supported by each stay 270 sq ft Working pressure by rules 225 lbs Material of Front plates at bottom steelMaterial of Lower back plate steel Thickness 3/4" Greatest pitch of stays 14 x 8" Working pressure of plate by rules 300 lbser of tubes 2 1/2" Pitch of tubes 3 1/2 x 3 1/2" Material of tube plates steel Thickness: Front 25/32" Back 7/8" Mean pitch of stays 9"across wide water spaces 14" Working pressures by rules 187 lbs Girders to Chamber tops: Material steel Depth andss of girder at centre 9 1/2 x 1 1/2" Length as per rule 31 1/2" Distance apart 8 1/2" Number and pitch of stays in each 3 - 7 1/2"ing pressure by rules 209 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler workedby Yes Diameter 14" Length 14" Thickness of shell plates 1/2" Material steel Description of longitudinal joint Yes Diam. of rivetPitch of rivets 1/2" Working pressure of shell by rules 187 lbs Diameter of flue 14" Material of flue plates steel Thickness 1/2"ned with rings Yes Distance between rings 14" Working pressure by rules 187 lbs End plates: Thickness 1/2" How stayed drawning pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear YesLloyd's Register
Foundation

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description When made Where fixed
Made at By whom made No. of Certificate Fire grate area Description of
Working pressure tested by hydraulic pressure to Date of test Pressure to which they are adjusted Date of adjustment
Valves No. of Safety Valves Area of each Pitch of rivets Dia. of donkey boiler Length
If fitted with easing gear If steam from main boilers can enter the donkey boiler Descrip. of riveting long. seams
Material of shell plates Thickness Range of tensile strength Lap of plating Per centage of strength of joint Rivets
Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Plates
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 Stayed by
Working pressure of furnace by rules Thickness of furnace crown plates Dates of survey
Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— Propeller, 2 top end, 2 bottom end, 2 main bearing & 1 set of coupling bolts, 6 junk ring bolts, 1 set feed & bilge pump valves, 1 set each air & circulating valves, 3 main & 3 donkey feed check valves, 1 piston spring (Lockwood & Carlisle) for HP & M.P. pump, 1 slide valve spindle, 1 spare bottom end bracket complete, Bolts & nuts assorted & iron of sizes, Propeller
The foregoing is a correct description, RICHARDSONS, WESTGARTH & CO., LTD
Manufacturer. Frederic St. Russell

1904:- 1905:-
Dates During progress of work in shops - Dec 12, 18, Jan 6, 10, 14, 22, 28, 29, Feb 1, 3, 8, 11, 13, 14, 28, 29, 29, Feb 2, 5, 11, 18, 20, 23, 24, 30, Apr 5, 6, 11, 13, 23, 24, 28, 30, May 4, 8, 13, 1905:-
Of Survey During erection on board vessel - June 1, 12, 14, 19, Aug 11, 13, 19, 24, Sept 23, 28, Oct 1, 6, 9, 14, 23, 30, Nov 4, 11, 13, 16, 18, 23, 26, 29, 28, Dec 1, 3, 4, (New) Oct 28
building Total No. of visits 69
Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 3.4.08 Slides 25.3.08 Covers 8.6.08 Pistons 8.5.08 Rods 30.3.08
Connecting rods 30.3.08 Crank shaft 25.3.08 Thrust shaft 30.3.08 Tunnel shafts 6.4.08 Screw shaft 9.10.08 Propeller 16.11.08
Stern tube 6.10.08 Steam pipes tested 28.11.08 Engine and boiler seatings 28.10.08 Engines holding down bolts 27.11.08
Completion of pumping arrangements 3.12.08 Boilers fixed 26.11.08 Engines tried under steam 3.12.08
Main boiler safety valves adjusted 3.12.08 Thickness of adjusting washers P.P. Valve 7/16 P.S. 25/64 C.P. 25/64 C.S. 7/16 S.S. 1/4
Material of Crank shaft Steel Identification Mark on Do. 4611 C.J.H. Material of Thrust shaft Steel Identification Mark on Do. 24
Material of Tunnel shafts Steel Identification Marks on Do. 3741 K.H. 3716 3732 3734 K.H. Material of Screw shafts Iron Identification Marks on Do. 46
Material of Steam Pipes Copper Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this vessel has been constructed under special survey, the workmanship materials used are both of good quality, The engines have been tried under steam ahead & astern & worked satisfactorily.

We beg to recommend that this vessel is eligible in our opinion to have the record **L.M.C. 2** in the Register Book

It is submitted that this vessel is eligible for THE RECORD. + LMC 2.09

The amount of Entry Fee. £ 3 : 0 : 0 When applied for, 7.12.08
Special £ 48 : 2 : 0 When received, 2nd Feb 1909
Donkey Boiler Fee £ : : :
Travelling Expenses (if any) £ : : :
Committee's Minute FRI, 19 FEB 1909
Assigned + LMC 2.09

6lec. Light F.D. ARK #6D 18/2
18.2.09
K.W. Coombes & Co. Ltd
Engineer Surveyors to Lloyd's Register of British & Foreign