

REPORT ON MACHINERY.

Received at London Office

FRI. NOV. 28. 1913

Date of writing Report 24.11.1913 When handed in at Local Office 24.11.1913 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey 8th April Last Survey 11th November 1913

Reg. Book. on the Steel Screw Steamer "Penistone" (S.S. No. 159) (Number of Visits 62)

Master Built at Stockton By whom built Craig Taylor & Co Ltd Tons Gross Net

Engines made at Stockton By whom made Messrs Blair & Co Lim. (N° 1766) when made 1913

Boilers made at Stockton By whom made Messrs Blair & Co Lim. when made 1913

Registered Horse Power Owners Charles Radcliffe & Co Port belonging to London

Nom. Horse Power as per Section 28 371 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26-42½-69½ Length of Stroke 45 Revs. per minute 58 Dia. of Screw shaft 14.13 Material of screw shaft iron

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 in one 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 tight fit If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5-4

Dia. of Tunnel shaft 12.72 Dia. of Crank shaft journals 13.35 Dia. of Crank pin 14½ Size of Crank webs 27½-9½ Dia. of thrust shaft under collars 14½ Dia. of screw 17-0 Pitch of Screw 17-0 No. of Blades 4 State whether moveable no Total surface 90 sq

No. of Feed pumps 2 Diameter of ditto 3½ Stroke 33 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4¾ Stroke 33 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps Ballant 9x10, Bud 4x8 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 3½ In Holds, &c. 2 @ 3½ in each hold

Funnel with one @ 2½

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 4

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 no

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 suctions to forward holds How are they protected wood ceiling

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 22.9.13 of Stern Tube 22.9.13 Screw shaft and Propeller 15.10.13

Is the Screw Shaft Tunnel watertight on hull repair Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs John Hender & Sons Ltd

Total Heating Surface of Boilers 5983 Is Forced Draft fitted no No. and Description of Boilers 2 single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 28.7.13 No. of Certificate 5129

Can each boiler be worked separately yes Area of fire grate in each boiler 61½ No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 8.29 Pressure to which they are adjusted 180 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2-2 Mean dia. of boilers 16-9 Length 11-6 Material of shell plates steel

Thickness 1½ Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2.R. lap long. seams 2.B-3 Riv Diameter of rivet holes in long. seams 1¾ Pitch of rivets 9¼ Lap of plates or width of butt straps 20½ x 1½

Per centages of strength of longitudinal joint 89.0 Working pressure of shell by rules 183 Size of manhole in shell 16 x 12

Size of compensating ring 7¾ x 1½ No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 48.4

Length of plain part 37 Thickness of plates 64 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 189 Combustion chamber plates: Material steel Thickness: Sides 1½ Back 1½ Top 1½ Bottom 32

Pitch of stays to ditto: Sides 9½ x 8¼ Back 9½ x 9½ Top 10½ x 8¼ If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Diameter at smallest part 1.99 Area supported by each stay 90.23 Working pressure by rules 198 End plates in steam space: Material steel Thickness 1½ Pitch of stays 22½ How are stays secured nuts & washers Working pressure by rules 185 Material of stays steel

Diameter at smallest part 8.48 Area supported by each stay 473 Working pressure by rules 186 Material of Front plates at bottom steel

Thickness 1 Material of Lower back plate steel Thickness 1½ Greatest pitch of stays 14½ x 9½ Working pressure of plate by rules 200

Diameter of tubes 3½ Pitch of tubes 4½ x 4½ Material of tube plates steel Thickness: Front 1½ Back 1½ Mean pitch of stays 9½

Pitch across wide water spaces 14½ Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8½ x 2 Length as per rule 33 Distance apart 10½ Number and pitch of stays in each 3 @ 8½

Working pressure by rules 185 Superheater or Steam chest; how connected to boiler none 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

Water Capacity: 98 Tons, 207

Visits 57

VERTICAL DONKEY BOILER - Manufacturers of Steel *See Middleborough Report No. 8102*

No. _____ Description _____ Port of _____
 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 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 _____ 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 each of con. rod top end and bottom end bolts and nuts; two main bearing bolts & nuts; one set of coupling bolts & nuts; one set of feed and delivery pump valves; one set each of H.P. & M.P. piston rings; assorted bolts & nuts; iron of various sizes and one tail end shaft.*

The foregoing is a correct description,
FOR BLAIR & Co., LIMITED.
Geo. Nettleship Manufacturer.

Dates of Survey while building	During progress of work in shops -	SECRETARY	Apr. 9, 11, 16, 18, 21, 22, 23, 25, 29, May 1, 5, 7, 10, 15, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Jun. 2, 4, 6, 9, 10, 12, 13, 16, 18, 19.
	During erection on board vessel -		20, 22, 25, 27, 28, July 2, 3, 7, 9, 10, 11, 17, 23, 25, Aug. 12, Sep. 11, 22, 24, Oct. 1, 15, 16, 17, 20, 24, 28, Nov. 4, 6, 11.
	Total No. of visits	62.	

Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " "
Dates of Examination of principal parts - Cylinders *2.6.13* Slides *2.6.13* Covers *2.6.13* Pistons *10.6.13* Rods *10.6.13*
 Connecting rods *10.6.13* Crank shaft *18.6.13* Thrust shaft *9.6.13* Tunnel shafts *3.7.13* Screw shaft *24.9.13* Propeller *22.9.13*
 Stern tube *11.9.13* Steam pipes tested *17.10.13* Engine and boiler seatings *1.10.13* Engines holding down bolts *20.10.13*
 Completion of pumping arrangements *6.11.13* Boilers fixed *6.11.13* Engines tried under steam *6.11.13*
 Main boiler safety valves adjusted *6.11.13* Thickness of adjusting washers *P.B.s 3/16" : S.B.s 1/2"*
 Material of Crank shaft *By steel* Identification Mark on Do. *6834* Material of Thrust shaft *By steel* Identification Mark on Do. *9337-N*
 Material of Tunnel shafts *By steel* Identification Marks on Do. *9337-N* Material of Screw shafts *iron* Identification Marks on Do. *6834*
 Material of Steam Pipes *Solid drawn copper (7x5/16 & 5x1/4)* Test pressure *400 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory.
The machinery of this vessel is now in a good and safe working condition and eligible in my opinion to have the notation of LMC-11-1 in the Register Book.

It is submitted that
 this vessel is eligible for
THE RECORD. + LMC 11-13.

Wm Morrison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 38/11/13

The amount of Entry Fee..	£ 2-0-0	When applied for.	
Special	£ 38-11-0	When received.	
Donkey Boiler Fee	£		
Travelling Expenses (if any) £			

Committee's Minute
 Assigned
 TUE. DEC. 2-1913
Home 11.13

