

REPORT ON MACHINERY.

Received at London Office FRI. MAY 30 1913

Date of writing Report 26 May 1913 When handed in at Local Office 26 May 1913 Port of West Hartlepool

No. in Survey held at West Hartlepool Date, First Survey 25th Sept, 1912 Last Survey 24 May 1913
Reg. Book. on the Steel Steamer "Pensilva" (Number of Visits 106)

Master W. H. Gray Built at West Hartlepool By whom built W. H. Gray & Co. Ltd Tons { Gross 4316.33 Net 3110.00 When built 1913

Engines made at West Hartlepool By whom made Central Marine & Works when made 1913

Boilers made at West Hartlepool By whom made Central Marine & Works when made 1913

Registered Horse Power 371 Owners Pensilva & Co. Ltd Port belonging to Falmouth

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 Triple Compound No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 25.41-68 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft 14.47 Material of screw shaft 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 No 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 Yes Length of stern bush 59

Dia. of Tunnel shaft 12.69 Dia. of Crank shaft journals 13.32 Dia. of Crank pin 13.72 Size of Crank webs 18.75 Dia. of thrust shaft under collars 13.72

Dia. of screw 15.0 Pitch of Screw 16.9 No. of Blades 4 State whether moveable No Total surface 102 sq ft

No. of Feed pumps Two Diameter of ditto 3.75 Stroke 28 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 5.6, 9.9 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3/4 In Holds, &c. One 3/4, Tunnel 3/4

No. of Bilge Injections One sizes 6/2 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3/4

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 Below

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 None

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 6/3/13 of Stern Tube 25/4/13 Screw shaft and Propeller 7/5/13

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Up Stbd Room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Hancock & Sons

Total Heating Surface of Boilers 6039.2 Is Forced Draft fitted No No. and Description of Boilers Two Lingee Endless

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 29/4/13 No. of Certificate 3323

Can each boiler be worked separately Yes Area of fire grate in each boiler 73 1/2 sq ft No. and Description of Safety Valves to each boiler Two Spring

Area of each valve 9.62 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 17.0 Length 11.6 Material of shell plates Steel

Thickness 1 3/8 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 3/16 in 1/4

long. seams all lap 3/16 Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9/16 Lap of plates or width of butt straps 2 3/4

Per centages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 183 lb Size of manhole in End 16.12

plate 85.1 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 4 Single Material Steel Outside diameter 46 1/8

Length of plain part 10 Thickness of plates 9/16 Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 182 lb Combustion chamber plates: Material Steel Thickness: Sides 10/16 Back 10/16 Top 10/16 Bottom 10/16

Pitch of stays to ditto: Sides 8 5/8 Back 9 1/2 Top 9.5 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 180 lb

Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 9 1/2 Working pressure by rules 190 lb End plates in steam space:

Material Steel Thickness 1 1/8 Pitch of stays 2 1/2 How are stays secured All nuts Working pressure by rules 181 lb Material of stays Steel

Diameter at smallest part 3.286 Area supported by each stay 2 1/2 Working pressure by rules 193 lb Material of Front plates at bottom Steel

Thickness 1 1/16 Material of Lower back plate Steel Thickness 3 1/32 Greatest pitch of stays 16 Working pressure of plate by rules 180 lb

Diameter of tubes 3 1/2 Pitch of tubes 4 1/4 Material of tube plates Steel Thickness: Front 1 Back 1 1/16 Mean pitch of stays 9 1/2

Pitch across wide water spaces 1 1/2 Working pressures by rules 182 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2 Length as per rule 29 1/8 Distance apart 8 Number and pitch of stays in each Two 9

Working pressure by rules 182 lb Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately

Diameter None Length None Thickness of shell plates None Material None Description of longitudinal joint None Diam. of rivet holes None

Pitch of rivets None Working pressure of shell by rules None Diameter of flue None Material of flue plates None Thickness None

If stiffened with rings None Distance between rings None Working pressure by rules None End plates: Thickness None How stayed None

Working pressure of end plates None Area of safety valves to superheater None Are they fitted with easing gear None

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Continued to 124

If not, state whether, and when, one will be sent

In a Report also sent on the Hull of the Ship

VERTICAL DONKEY BOILER—

Manufacturers of Steel

As per Report attached.

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed *Stokehold*

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 _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ 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 _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *The top end bolts. The bottom end bolts. Six main bearing bolts. One set coupling bolts. One set feed pump valves. One set Bridge pump valves. One set 100 pound springs. Pressure Artil. nuts &c.*

FUR THE CENTRAL MARINE ENGINE WORKS,
(11, Gray & Co. St.)

The foregoing is a correct description,

Maurice S. Gibb
MANAGER.

Manufacturer.

Dates of Survey while building	During progress of work in shops	1912 Sept 25-26-27-30. Oct 2-3-4-21-22-29-31. Nov 1-26-29. Dec 2-9-10-11-20-23-24-27-31.	1913 Jan 3-5-7-8-9-10-13-14-15-17-20-22-23-24-28-29-30-31. Feb 3-4-6-7-10-11-13.
	During erection on board vessel	17-18-19-20-21-24-25-26-27. Mar 4-5-6-7-10-11-12-13-14-17-18-20-25-27-28-31. Apr 1-2-3-4-7-8-9-10-14-15-16-17-21-22-23-24-25-28-29-30. May 1-5-6-7-9-15-19-20-21-22-23.	
	Total No. of visits	106.	

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders *27/3/13* Slides *27/3/13* Covers *27/3/13* Pistons *27/3/13* Rods *18/3/13*

Connecting rods *18/3/13* Crank shaft *10/3/13* Thrust shaft *10/3/13* Tunnel shafts *30/4/13* Screw shaft *27/2/13* Propeller *5/3/13*

Stern tube *13/3/13* Steam pipes tested *7/5/13 19/5/13* Engine and boiler seatings *25/4/13* Engines holding down bolts *9/5/13*

Completion of pumping arrangements *2/5/13* Boilers fixed *20/5/13* Engines tried under steam *2/5/13*

Main boiler safety valves adjusted *2/5/13* Thickness of adjusting washers *Port P 1 5/16 S 2 3/32 Ural P 2 5/32 S 1 1/16*

Material of Crank shaft *Steel* Identification Mark on Do. *5389* Material of Thrust shaft *Steel* Identification Mark on Do. *5389*

Material of Tunnel shafts *Steel* Identification Marks on Do. *5389* Material of Screw shafts *Steel* Identification Marks on Do. *5389*

Material of Steam Pipes *Lap headed Steel* Test pressure *600 lb*

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

Propeller only tested to 400 lb and only to 50 lb.

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 + LMC 5-12 in the Register Book.

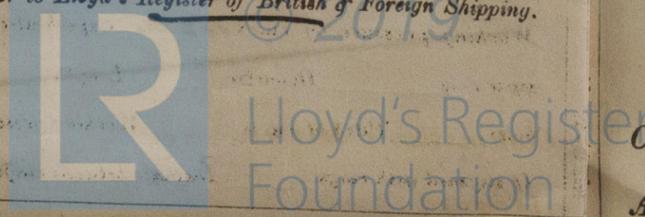
It is submitted that this vessel is eligible for THE RECORD + LMC 5.13.

The amount of Entry Fee	£ 3 : 0	When applied for	29.5.13
Special	£ 38 : 11	When received	30/5/13
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

JUR
30/5/13 *James Jones*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. JUN. -3 1913

Assigned *Thurs 5.13*



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

The Surveyors are requested not to write on or below the space for Committee's Minute.