

REPORT ON MACHINERY.

No. 25689

Received at London Office

Date of writing Report 19 When handed in at Local Office 19. 5. 1913 Port of SUNDERLAND TUE. MAY. 20. 1913

No. in Survey held at SUNDERLAND. Date, First Survey 7 Feb'y Last Survey 13th May 1913

Reg. Book. on the *SS North Pacific* (Number of Visits 20) Gross 3931

Master *H.P. Godwin* Built at *Sunderland* By whom built *J.L. Thompson & Sons L^d* Tons Net 2492

Engines made at *Silana* By whom made *J. Dickinson & Sons L^d* when made 1913

Boilers made at " By whom made " when made 1913

Registered Horse Power Owners *Pacific Shipping L^d* Port belonging to *Sunderland*

Nom. Horse Power as per Section 28 399 Is Refrigerating Machinery fitted for cargo purposes *no.* Is Electric Light fitted *no.*

ENGINES, &c.—Description of Engines *Tri C.p.d.* No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26. 42. 71 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 14.5" Material of screw shaft 16 S. as fitted 14.5" screw shaft

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 *no* Length of stern bush 5 ft.

Dia. of Tunnel shaft as per rule 12.98" Dia. of Crank shaft journals as per rule 13.63" Dia. of Crank pin 13.75" Size of Crank webs *patent* Dia. of thrust shaft under collars 13 3/4" Dia. of screw 17.6" Pitch of Screw 17 ft. No. of Blades 4 State whether moveable *no* Total surface 862 sq. ft.

No. of Feed pumps 2 Diameter of ditto 4" Stroke 25 1/2" Can one be overhauled while the other is at work *yes*

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 25 1/2" Can one be overhauled while the other is at work *yes*

No. of Donkey Engines 2 Sizes of Pumps 5.6 hp, 7.10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 of 3 1/2" In Holds, &c. 2 of 3 1/2" in each

tunnel 2 1/2"

No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump *CP* 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 *yes*

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 *yes*

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 1.4.13 of Stern Tube 8.4.13 Screw shaft and Propeller 8.4.13

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

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *J. Spence & Sons L^d*

Total Heating Surface of Boilers 6449 sq. ft. Is Forced Draft fitted *no.* No. and Description of Boilers 3 ordinary type

Working Pressure 180 lb. Tested by hydraulic pressure to 300 lb. Date of test 17.4.13 No. of Certificate 3105

Can each boiler be worked separately *yes* Area of fire grate in each boiler 56 sq. ft. No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 7.06" 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 15 ft. Length 11 ft. Material of shell plates 5

Thickness 1 1/8" Range of tensile strength 282. 32 Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *a.r. lap*

long. seams *a. butt* Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 1.74"

Per centages of strength of longitudinal joint rivets 85.57 Working pressure of shell by rules 182. Size of manhole in shell 16" x 12" plate 85.57 3. centres *corrugated*

Size of compensating ring 8 7/8 x 1 3/8 No. and Description of Furnaces in each boiler 3 plain Material *S* Outside diameter 3'6"

Length of plain part top 6.72" bottom 7.3" Thickness of plates crown 5 1/2" bottom 6 1/2" Description of longitudinal joint *weld.* No. of strengthening rings

Working pressure of furnace by the rules 181. Combustion chamber plates: Material *S* Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 1/8"

Pitch of stays to ditto: Sides 9 x 10 Back 9 1/2 x 9 1/2 Top 9 x 10 If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules 181

Material of stays *S* Diameter at smallest part 1.6" Area supported by each stay 90 Working pressure by rules 203 End plates in steam space:

Material *S* Thickness 1 1/4" Pitch of stays 19 x 21 3/8 How are stays secured *a. nuts* Working pressure by rules 181. Material of stays *S*

Diameter at smallest part 3.03 Area supported by each stay 406 Working pressure by rules 190 Material of Front plates at bottom *S*

Thickness 7/8 Material of Lower back plate *S* Thickness 29/32 Greatest pitch of stays 14 3/4 x 9 7/8 Working pressure of plate by rules 183

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates *S* Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9"

Pitch across wide water spaces 14 3/4" Working pressures by rules 232. Girders to Chamber tops: Material *S* Depth and thickness of girder at centre 7 1/2 x 1 1/2 Length as per rule 2' 6 1/2" Distance apart 10" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 184 Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately

holes Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet 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



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fired _____

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 _____ 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: — *propeller & shaft. Set top & bottom end bolts & nuts. Set main bearing bolts & nuts. Coupling bolts & nuts. Set of valves for bidge feed pumps. Set of air & Coi. pump valves. 2 ballast feed pump valves. 2 main & donkey check valves. 2 safety & escape valve springs. Nuts bolts and assorted iron.*

The foregoing is a correct description,

Manufacturer *J. C. Dickinson*

Dates of Survey while building

During progress of work in shops --	1913 Feb. 7-27 Mar. 5, 6, 12, 20, 24, 28, 31 Apr. 1, 8, 17, 18, 28, 29
During erection on board vessel ---	May 1, 2, 5, 8, 13
Total No. of visits	(20)

Is the approved plan of main boiler forwarded herewith *yes*

Is the approved plan of donkey boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *12.3.13* Slides *6.3.13* Covers *6.3.13* Pistons *6.3.13* Rods *6.3.13*

Connecting rods *6.3.13* Crank shaft *28.3.13* Thrust shaft *28.3.13* Tunnel shafts *28.3.13* Screw shaft *28.3.13* Propeller *1.4.13*

Stern tube *1.4.13* Steam pipes tested *29.4.13* Engine and boiler seatings *28.4.13* Engines holding down bolts *28.4.13*

Completion of pumping arrangements *2.5.13* Boilers fixed *29.4.13* Engines tried under steam *2.5.13*

Main boiler safety valves adjusted *2.5.13* Thickness of adjusting washers *PF 3/32 PA 4 CB p 3/32 CB 5/4 SB 5/4 A 4*

Material of Crank shaft *S* Identification Mark on Do. *R.I.F.* Material of Thrust shaft *S* Identification Mark on Do. *R.I.F.*

Material of Tunnel shafts *S* Identification Marks on Do. *R.I.F.* Material of Screw shafts *W. J.* Identification Marks on Do. *R.I.F.*

Material of Steam Pipes *C.V.* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *Engines & boilers built under special survey. materials & workmanship good. Examined under full steam & working conditions & found satisfactory. It is submitted that this vessel is eligible for the record of F.L.M.C. 5/13 in the Register Book.*)

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

J.W.D. G.R.R. 20/5/13

The amount of Entry Fee	£ 3	When applied for	17.5.13
Special	£ 39.19	When received	20/5/13
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

J. Y. Hindlay
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. MAY 23. 1913*
Assigned *LMC 5.13*

MACHINERY CERTIFICATE WRITTEN.



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