Mem 12-9-06. Hawthorn Leslie & Co S.S. No 411- Engine 2643.

Rpt. 4.

REPORT ON MACHINERY.

No. 51604

TUES. SEP 18 1906

Port of Newcastle on Tyne Received at London Office 19

No. in Reg. Book. Survey held at Newcastle Date, first Survey Jan 11. Last Survey 8 Sept 1906

(Number of Visits 40)

on the Steel S.S. "PORT AUGUSTA" Tons Gross 4063 Net 2587

Master Built at Newcastle By whom built Hawthorn Leslie & Co When built 1906

Engines made at Newcastle By whom made Hawthorn Leslie & Co Ltd when made 1906

Boilers made at D° By whom made D° when made 1906

Registered Horse Power 481 Owners Aug-Australasian S.S. Co Ltd (W Milburn & Co Mgrs) Port belonging to London

Nom. Horse Power as per Section 28 442 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Ye

DRSL 25/6/07

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

Dia. of Cylinders 27 - 45 - 74 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 14-9 as fitted 15 Material of screw shaft Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Ye Is the after end of the liner made water tight in the propeller boss Ye 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 Ye If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 60

Dia. of Tunnel shaft as per rule 13-4 as fitted 13¾ Dia. of Crank shaft journals as per rule 14-07 as fitted 14¼ Dia. of Crank pin 14½ Size of Crank webs 7½ Dia. of thrust shaft under collars 14¼ Dia. of screw 18-0 Pitch of Screw 18-0 No. of Blades 4 State whether moveable Ye Total surface 96 ☐ft

No. of Feed pumps Duplex Diameter of ditto 7 Stroke 21 Can one be overhauled while the other is at work Ye

No. of Bilge pumps 2 Diameter of ditto 4½ Stroke 26 Can one be overhauled while the other is at work Ye

No. of Donkey Engines Two Sizes of Pumps 9×8 BD - 7×21 FD No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 3½ In Holds, &c. Two 3½ in each hold. Tunnel well One 3"

No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump CP Is a separate Donkey Suction fitted in Engine room & size Ye 3½

Are all the bilge suction pipes fitted with roses Ye Are the roses in Engine room always accessible Ye Are the sluices on Engine room bulkheads always accessible ✓

Are all connections with the sea direct on the skin of the ship Ye Are they Valves or Cocks bolt

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Ye Are the Discharge Pipes above or below the deep water line at Line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Ye Are the Blow Off Cocks fitted with a spigot and brass covering plate Ye

What pipes are carried through the bunkers Ford bilge Pipes How are they protected Strong wood Casing

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Ye

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Ye

Dates of examination of completion of fitting of Sea Connections July & Aug 1906 of Stern Tube July - Aug: 1906 Screw shaft and Propeller Aug: 1906

Is the Screw Shaft Tunnel watertight Ye Is it fitted with a watertight door Ye worked from Up platform.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Son

Total Heating Surface of Boilers 5782 ☐ft Is Forced Draft fitted Ye No. and Description of Boilers 2 Cyl° Multi:

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 13-6-06 No. of Certificate 7243

Can each boiler be worked separately Ye Area of fire grate in each boiler 75 ☐ft No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 11-04 Pressure to which they are adjusted 185 Are they fitted with easing gear Ye

Smallest distance between boilers or uptakes and bunkers or woodwork 2-0 Mean dia. of boilers 16-0⅛ Length 11-8 Material of shell plates S

Thickness 1 15/32 Range of tensile strength 29/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d Lap long. seams d strap Diameter of rivet holes in long. seams 1½ Pitch of rivets 10 Lap of plates or width of butt straps 21¾

Per centages of strength of longitudinal joint rivets 90 plate 85 Working pressure of shell by rules 214 Size of manhole in shell 16×12

Size of compensating ring Flanged plate No. and Description of Furnaces in each boiler 4 Deighton Material S Outside diameter 43

Length of plain part top ✓ bottom Thickness of plates crown 17/32 bottom Description of longitudinal joint Welt No. of strengthening rings ✓

Working pressure of furnace by the rules 190 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16

Pitch of stays to ditto: Sides 8×8 Back 8×7½ Top 8×8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 211

Material of stays S ~~Diameter~~ area at smallest part 1-5 Area supported by each stay 64 Working pressure by rules 187 End plates in steam space:

Material S Thickness 1⅛ Pitch of stays 15¾×16 How are stays secured d h & W Working pressure by rules 238 Material of stays S

~~Diameter~~ area at smallest part 6-1 Area supported by each stay 252 Working pressure by rules 242 Material of Front plates at bottom S

Thickness 1 Material of Lower back plate S Thickness 15/16 Greatest pitch of stays as per plan Working pressure of plate by rules 180

Diameter of tubes 2½ Pitch of tubes 3¾×3¾ Material of tube plates S Thickness: Front 1 Back ¾ Mean pitch of stays 7½

Pitch across wide water spaces 14½ Working pressures by rules 226 BP Girders to Chamber tops: Material S Depth and thickness of girder at centre 9½×1½ Length as per rule 32½ Distance apart 8 Number and pitch of stays in each 3 - 8

Working pressure by rules 209 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 ✓

W646-0061

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. Description: Plans Lee attached Sheet.

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

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 — Stayed by

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

SPARE GEAR. State the articles supplied :— Propeller blade. Tail shaft - two top end, two bottom end, two main bearing & one set coupling bolts, feed & bilge pump valves, air pump rod, piston springs, assorted bolts & nuts, a few tons of iron & other small gear -

The foregoing is a correct description,

For R. & W. HAWTHORN, LESLIE & Co. Ld.

General Manager

Manufacturer.

Dates of Survey while building

During progress of work in shops - { 1906. Jan 11. 16. 18. 25. Feb. 9. 16. Mch. 6. 15. 19. 21. Apl. 2. 9. 26. 27. May 1. 11. 17. 23. 24. June 8. 12. 14. July 5. 6. 10. 19.

During erection on board vessel - - { 23. Aug. 2. 8. 13. 17. 18. 21. 24. 28. 30. 31. Sep. 5. 6. 8.

Total No. of visits 40

Is the approved plan of main boiler forwarded herewith No

" " " donkey " " " No

Dates of Examination of principal parts—Cylinders July 1906 Slides July 1906 Covers July 1906 Pistons July 1906 Rods July 1906

Connecting rods July 1906 Crank shaft July 1906 Thrust shaft July 1906 Tunnel shafts July 1906 Screw shaft July 1906 Propeller July 1906

Stern tube July Aug 3 1906 Steam pipes tested 8 Aug 18 1906 Engine and boiler seatings Aug 1906 Engines holding down bolts Aug 1906

Completion of pumping arrangements Aug & Sept 1906 Boilers fixed Aug 1906 Engines tried under steam 30 Aug 1906

Main boiler safety valves adjusted 30 Aug 1906 Thickness of adjusting washers P.B. 0 15/32 0 17/32 1854. 0 15/32 S.B. 0 13/32 St.

Material of Crank shaft I Steel Identification Mark on Do Lloyd. I.H.M. 06 Material of Thrust shaft I Steel Identification Mark on Do. Lloyd. I.H.M. 1906.

Material of Tunnel shafts I Steel Identification Marks on Do. Lloyd. I.H.M. 1906 Material of Screw shafts I Steel Identification Marks on Do. Lloyd. I.H.M. 1906

Material of Steam Pipes Wrot Iron & Copper Test pressure W Iron 540. Copper 380.

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

The material & workmanship is good.

The Machinery is an exact duplicate of that fitted in the S.S. "Port Hunter", Inve Ref: 51.450-

The Machinery has been built under Special Survey & is eligible in my Opinion for classification & the record +LMC. 9.06-

It is submitted that this vessel is eligible for THE RECORD ✠LMC.9.06. F.D. ELEC. LIGHT.

18.9.06

18.9.06

The amount of Entry Fee.. £ 3 : : When applied for, 17 SEP 1906

Special .. .. .. £ 40 : : When received, 20/9/06

Donkey Boiler Fee .. .. £ : :

Travelling Expenses (if any) £ : :

21.9.06

John H Hick.

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

Committee's Minute FRI. 21 SEP 1906

Assigned +LMC 9.06 F.D. Elec. light

MACHINERY CERTIFICATE WRITTEN.

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

Certificate (if required) to be sent to Newcastle-on-Tyne.