

REPORT ON MACHINERY.

Port of Newcastle on Tyne

Received at London Office **TUES. 15 MAY 1906**

No. in Survey held at Newcastle

Date, first Survey Jan 5th 06 Last Survey 16th May 1906

Reg. Book. 57 on the Steel Twin S.S. EMPRESS

(Number of Visits 26)

Master Built at Newcastle By whom built Swan Hunter & W Richardson When built 1906

Tons } Gross 1342
Net 645

Engines made at Newcastle By whom made Swan Hunter & W Richardson Ltd when made 1906

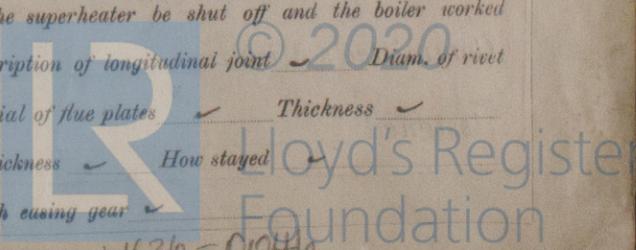
Boilers made at D- By whom made D- when made 1906

Registered Horse Power Owners Charlottetown S. Nav Co Ltd Port belonging to Charlottetown PEI

Nom. Horse Power as per Section 28 366 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 18 1/2 - 28 1/2 - 46 Length of Stroke 33 Revs. per minute 145 Dia. of Screw shaft as per rule 9-7 1/2 Material of screw shaft Ingot Steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners Painted Length of stern bush 39
 Dia. of Tunnel shaft as per rule 8-6 1/2 Dia. of Crank shaft journals as per rule 9-1 Dia. of Crank pin 9 1/4 Size of Crank webs 14 x 5 15/16 Dia. of thrust shaft under collars 9 1/2 Dia. of screw 9-9 Pitch of screw 13-9 No. of blades 4 State whether moveable No Total surface 27 1/2 sq ft
 No. of Feed pumps 2 Diameter of ditto 7 1/2 Stroke 21 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps One each Diameter of ditto 3 1/2 Stroke 19 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines One Sizes of Pumps 4 1/2 x 8 5/8 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 3" In Holds, &c. M Hold two 2 1/2" A.H. two 2 1/2"
 No. of bilge injections 1 sizes 7 Connected to condenser, or to circulating pump CP Is a separate donkey suction fitted in Engine room & size Yes 3"
 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 ✓
 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 ✓
 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock while building Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Main Deck.

BOILERS, &c.— (Letter for record (R)) Total Heating Surface of Boilers 5862 sq ft Is forced draft fitted Yes
 No. and Description of Boilers 2 Cylindrical Working Pressure 160 Tested by hydraulic pressure to 320
 Date of test 20-3-06 Can each boiler be worked separately Yes Area of fire grate in each boiler 774 No. and Description of safety valves to each boiler Two Spring Area of each valve 12-6 Pressure to which they are adjusted 165 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 24 Mean dia. of boilers 16-4 7/8 Length 11-7 1/2 Material of shell plates S
 Thickness 1 1/16 Range of tensile strength 28 3/4 to 32 Are they welded or flanged No Descrip. of riveting: cir. seams d lap long. seams d strap
 Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 9 1/16 Lap of plates or width of butt straps 2 1/8
 Per centages of strength of longitudinal joint 97 Working pressure of shell by rules 182 Size of manhole in shell 16 x 12
 Size of compensating ring 9 x 1 5/16 No. and Description of Furnaces in each boiler 4 Deighton Material S Outside diameter 45 1/4
 Length of plain part top Thickness of plates crown 1/2 Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 167 Combustion chamber plates: Material S Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 2 9/32
 Pitch of stays to ditto: Sides 10 7/8 x 2 1/8 Back 10 3/4 x 8 Top 10 5/8 x 7 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 166
 Material of stays Iron Diameter at smallest part 2-03 Area supported by each stay 88 Working pressure by rules 173 End plates in steam space: Material S Thickness 3 1/32 Pitch of stays 20 x 17 How are stays secured dr & Riv'd Plate Working pressure by rules 182 Material of stays S
 Diameter at smallest part 6-1 Area supported by each stay 340 Working pressure by rules 179 Material of Front plates at bottom S
 Thickness 1 3/16 Material of Lower back plate S Thickness 2 7/32 Greatest pitch of stays as per plan Working pressure of plate by rules 160
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates S Thickness: Front 1 3/8 Back 3/4 Mean pitch of stays 9 3/8
 Pitch across wide water spaces 13 1/2 Working pressures by rules 184 Girders to Chamber tops: Material S Depth and thickness of girder at centre 10 x 1 1/4 Length as per rule 35 1/8 Distance apart 7 3/4 Number and pitch of Stays in each 2-10 5/8
 Working pressure by rules 185 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 ✓



DONKEY BOILER— No. 1 Description Cochran. Vertical (See attached Sheet)
 Made at Aman By whom made Cochran & Co. When made 1906 Where fixed Shkeshold
 Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 7978 Fire grate area 8-5 Description of safety valves Spring
 No. of safety valves 2 Area of each 3-14 Pressure to which they are adjusted 85 If fitted with easing gear Yes If steam from main boilers enter the donkey boiler No 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 _____ Percentage of strength of joint _____ Rivets _____ 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 _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— Crank shaft. Propeller. 2 top end, 2 bottom end. Two main bearings & one set coupling bolts, feed & bilge valve assorted bolts & nuts, a few bars of iron & other small gear.

FOR The foregoing is a correct description,
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.
J. A. Christie Manufacturer.

Dates of Survey while building
 During progress of work in shops— } 1906. ^{DIRECTOR} Jan 5, 9, 15, 21, 25, Feb. 12, 14, 19, 27, Mar. 28, 14, 19, 20, 23, 26, 29, 30, Apr. 6, 7, 21, 28, May 3, 7, 10, 16.
 During erection on board vessel — }
 Total No. of visits 26

Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " No

General Remarks (State quality of workmanship, opinions as to class, &c.)
The material & workmanship is good.
The machinery has been built under special survey & is eligible in our opinion for classification & the record I.M.C. 5-06

It is submitted that this vessel is eligible for **THE RECORD** I.M.C. 5.06. F.D. ELEC: LIGHT.

J.H.
15.5.06
15.5.06

The amount of Entry Fee... £ 3 : : :
 Special... £ 38 : 6 : : :
 Donkey Boiler Fee... £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, 14 MAY 1906
 When received, 17 15 06

John H Heck & Co.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute UES. 15 MAY 1906

Assigned + I.M.C. 5-06

MACHINERY CERTIFICATE WRITTEN.



FLAT (If Bo GARB... State thick way of Bot... Ma... DOUBL Length and thicknes POOP & RAISE BRIDGE FORECA LENGTH M manufa Plates Has the FRAM REVE LOWER Bows Topn Rigg Sails Equ Num Cert 43 72 73 19 19 Ni Ce 10 10 Bo Pu WI En WI Co Nu Cel Car Sta Nu Br T B

Hewlett-on-Tyne

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