

REPORT ON MACHINERY.

Port of Belfast

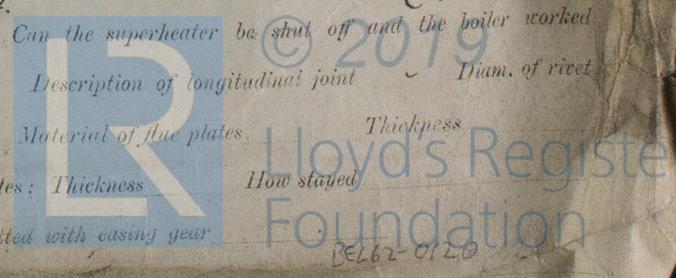
2 NOV 93

Received at London Office

No. in Survey held at Belfast Date, first Survey Feb. 25th Last Survey 28th Oct. 1893
 Reg. Book. Belfast (Number of Visits 35)
 *2 Sup. on the Steel screw Steamer "Sachem" Tons { Gross 5203.6
 Net 3336.8
 Master Sam^l Walters Built at Belfast By whom built Harland & Wolff Lim When built 1893
 Engines made at Belfast By whom made Harland & Wolff Lim when made 1893
 Boilers made at Belfast By whom made Harland & Wolff Lim when made 1893
 Registered Horse Power 593 Owners Constitution S. S. Co Lim Port belonging to Liverpool
 Nom. Horse Power as per Section 28 592

ENGINES, &c.— Description of Engines Triple Expansion No. of Cylinders Three
 Diameter of Cylinders 31; 49; 49 Length of Stroke 60 Revolutions per minute 68 Diameter of Screw shaft as per rule 15.62
 Diameter of Tunnel shaft as fitted 15 1/2 Diameter of Crank shaft journals 16 1/2 Diameter of Crank pin 16 1/2 Size of Crank webs 11 x 2 1/2 Shaped
 Diameter of screw 19 ft Pitch of screw 21" 6" No. of blades 4 State whether moveable Yes Total surface 95 sq
 No. of Feed pumps one Diameter of ditto 6" Stroke 30" Can one be overhauled while the other is at work ✓
 No. of Bilge pumps two Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Five Sizes of Pumps See other side No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Four 3" suction In Holds, &c. No 1 hold, forward, two 3" suction.
 No 2 hold, one 3". No 3 hold, two 6" suction & two 3". No 4 hold, three 3". No 5 hold (aft) two 6" & two 3". No 6, one 3". No 7, one 3"
 No. of bilge injections 1 sizes 12" Connected to condenser, or to circulating pump circ. p. Is a separate donkey suction fitted in Engine room of size Yes 2 1/2"
 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 valves & cocks
 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 Ballast & bilge pipes How are they protected Strong wood casings
 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 examined before launching Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from level of deck

OILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 10477 sq
 No. and Description of Boilers Two double ended & one single ended Working Pressure 160 Tested by hydraulic pressure to 320 lb
 Date of test 17.8.93 & 19.9.93 each boiler be worked separately yes Area of fire grate in each boiler 112 doub. ended & 50 Sing. ended No. and Description of safety valves to
 each boiler Two, Cockburn's Area of each valve 15.03 sq d. & 6.49 sq d. Pressure to which they are adjusted 165 lbs Are they fitted
 with casing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" baffle plates Mean diameter of boilers 15.6" O. & 14.0" S. & 2.
 Length 17' 0" O. & 10' 0" S. & 2. Material of shell plates steel Thickness 1 3/8" O. & 1 1/4" S. & 2. Description of riveting: circum. seams ends out. others, long. seams double straps.
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9" outside rows Lap of plates or width of butt straps 20 1/2" x 1 1/16" O. & 11" S. & 2.
 Per centages of strength of longitudinal joint 89.0 Working pressure of shell by rules 182 d. & 181 S. & 2. Size of manhole in shell 16" x 12"
 Size of compensating ring 31 x 27 x 1 1/8" O. & 1 1/4" S. & 2. No. and Description of Furnaces in each boiler Three, Morrison Patent Material Steel Outside diameter 49 O. & 44 S. & 2.
 Length of plain part top 9 1/16" O. & 9 1/16" S. & 2. Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 180 O. & 171 S. & 2. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 3/8" O. & 9/16" S. & 2. Bottom 3/4"
 Pitch of stays to ditto: Sides 8 1/4" Back 8 1/4" Top 8 1/2" x 8 1/4" O. & 8 1/4" S. & 2. stays are fitted with nuts or riveted heads yes Working pressure by rules 161
 Material of stays steel Diameter at smallest part 1 3/8" Area supported by each stay 70" Working pressure by rules 171 End plates in steam space:
 Material steel Thickness 1 1/16" O. & 1 1/8" S. & 2. Pitch of stays 18" O. & 18 3/8" S. & 2. How are stays secured Double nuts & largest washers Working pressure by rules 196 O. & 166 S. & 2. Material of stays steel
 Diameter at smallest part 2 7/8" Area supported by each stay 297" O. & 324 S. & 2. Working pressure by rules 193 O. & 177 S. & 2. Material of Front plates at bottom steel
 Thickness 7/8" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays as approx Working pressure of plate by rules 160
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 3/4" Mean pitch of stays 9"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 160 + Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 6 x 7/8 (2 plates) suspended & 40 1/2" O. & 6 1/2" O. & 8 1/4" S. & 2. Distance apart 8 1/2" O. & 8 1/4" S. & 2. Number and pitch of Stays in each 4 at 8 1/2" O. & 2 at 8 1/4" S. & 2.
 Working pressure by rules 160 O. & 181 S. & 2. 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 casing gear ✓



DONKEY BOILER— Description *Single ended auxiliary main boiler used.*

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

Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____

Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____

Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Lap of plating _____ Per centage 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:— *Propeller blade & set studs & nuts for same. Piece crank shaft. Coupling clamp for shaft. Set piston rings. 2 H.P. piston valve rings. Pair crank pin brasses. 2 cr. pin bolts. 2 crosshead bolts. 2 main bearing bolts. Set coupling bolts. H.P. ecc. strap & bolts. 1 Intermed. ditto. 2 valve spindles. Quadrant block. Air pump rod. Centrif. spindle & fan. 24 fuel ring bolts & nuts. Set escape valve springs. Set feed valves. 2 main & 1 donkey check V. Set tiller pump valves. 30 boiler tubes. 3 main boiler safety-valve springs & one auxiliary boiler ditto. Half set fire bars. Assorted iron, bolts, nuts etc.*

The foregoing is a correct description,
Horland & Co. Ltd Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The following pumps are fitted*

No 8 D Pulsometer Ballast pump. Cameron's pump 12" x 6" x 9" (from bilges, tanks, & sea) Weirs duplex feed 10" x 8" x 24". Two Deane's duplex pumps 6" x 4" x 6"

The machinery has been constructed & fitted under special survey & the workmanship is good throughout. The boilers are made in accordance with the approved plans enclosed, & have been tested to double the working pressure. Each length of main & branch main steam pipe has been tested to double the working pressure by water.

The vessel run a trial in the Belfast Lough on the 28th October, & the safety valves were found to be adjusted to blow off at 165 lbs.

Messrs W H Allen & Co have fitted the electric light installation of which a report will be forwarded.

The machinery in my opinion renders the vessel eligible for the record of + LMC 10.93 in the Register Book.

[Large blue handwritten signature]

It is submitted that this vessel is eligible for THE RECORD + LMC 10.93.—

A. L. Jones
 2/11/93 —

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to _____

The amount of Entry Fee..	£ 3-0-0	When applied for, 28 th Oct 1893
Special	£ 49-13-0	
Donkey Boiler Fee	£ : :	When received, 31 st Oct 1893
Travelling Expenses (if any) £	: :	

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

Committee's Minute _____
 Assigned _____
 27th NOV 1893
 + LMC 10.93

