

REPORT ON MACHINERY.

No. 65661

Received at London Office

SAT. 8 APR 1911

Date of writing Report 5 APR 1911 When handed in at Local Office 5 APR 1911 Port of LIVERPOOL

No. in Survey held at Birkenhead. Date, First Survey Dec 7. 1909. Last Survey Nov 27 1910.
Reg. Book. on the S. S. Highland Loch. (Number of Visits 99.)

Master Built at Birkenhead By whom built Hammell Laird & Co. Ltd. When built 1911.

Engines made at Birkenhead. By whom made Hammell Laird & Co. Ltd. when made 1911.

Boilers made at Birkenhead. By whom made Hammell Laird & Co. Ltd. when made 1911.

Registered Horse Power Owners Nelson Line Ltd. Port belonging to London

Nom. Horse Power as per Section 28 872 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

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

Dia. of Cylinders 31" 51" 86" Length of Stroke 54" Revs. per minute 75-82 Dia. of Screw shaft as per rule 16 7/8" Material of 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 — 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 — Length of stern bush 6' 0 5/8"

Dia. of Tunnel shaft as per rule 16 7/8" Dia. of Crank shaft journals as per rule 16 7/8" Dia. of Crank pin 17 1/2" Size of Crank webs 11 1/2" Dia. of thrust shaft under

collars 17 1/2" Dia. of screw 19' 0" Pitch of Screw 19' 6" No. of Blades 4 State whether moveable yes Total surface 115 1/4"

No. of Feed pumps 2 Diameter of ditto 9" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work yes

No. of Donkey Engines Four Sizes of Pumps 8 1/2" 5 1/2" 9" 11 1/2" 7 1/2" 5 1/2" 6" 4 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 1/2" In Holds, &c. Two 3 1/2" in each hold. + 1 - 2 1/4"

in tunnel well.

No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 1 - 3 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 none

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 yes

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

Dates of examination of completion of fitting of Sea Connections 29. 12. 10. of Stern Tube 14. 9. 10. Screw shaft and Propeller 2. 3. 11.

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 Birkenhead, Steel Co. of Scotland.

Total Heating Surface of Boilers 10300 ft² Is Forced Draft fitted yes No. and Description of Boilers 3 S.B. Mult. Cylindrical.

Working Pressure 210 lbs Tested by hydraulic pressure to 420 lbs Date of test 27. 10. 10. No. of Certificates No 1923.

Can each boiler be worked separately yes Area of fire grate in each boiler 74 7/8 ft² No. and Description of Safety Valves to

each boiler Two Direct Spring Area of each valve 12 1/8" Pressure to which they are adjusted 210 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 16' 6" Length 12' 0" Material of shell plates steel

Thickness 1 3/4" Range of tensile strength 30.5-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.B. Lip.

long. seams D.B. 2R Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 10" Lap of plates or width of butt straps 1' 11 1/2"

Per centages of strength of longitudinal joint rivets 95 7/8% plate 83 1/2% Working pressure of shell by rules 217 Size of manhole in shell 16" x 12"

Size of compensating ring 9 1/2" x 1 1/4" No. and Description of Furnaces in each boiler 4 Morrison Material steel Outside diameter 3' 9"

Length of plain part top / bottom / Thickness of plates crown 2 1/2" bottom 3 1/2" Description of longitudinal joint weld No. of strengthening rings 1

Working pressure of furnace by the rules 237 Combustion chamber plates: Material steel Thickness: Sides 5" Back 5" Top 5" Bottom 1"

Pitch of stays to ditto: Sides 8 1/2" x 7 1/2" Back 8 1/2" x 7 1/2" Top 8 x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 212

Material of stays steel Diameter at smallest part 1 1/4" Area supported by each stay 63" Working pressure by rules 212 End plates in steam space:

Material steel Thickness 1 5/8" Pitch of stays 17 x 17 1/2" How are stays secured Nut and wash Working pressure by rules 213 Material of stays steel

Diameter at smallest part 2 1/4" Area supported by each stay 298 + 252 Working pressure by rules 237 Material of Front plates at bottom steel

Thickness 1" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 213

Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" Material of tube plates steel Thickness: Front 1" Back 1 1/8" Mean pitch of stays 7 1/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 210 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 7 1/2" 2 1/4" Length as per rule 2' 7 1/2" Distance apart 8" Number and pitch of stays in each 3 - 7 1/2"

Working pressure by rules 212 Superheater or Steam chest; how connected to boiler none 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

W658-0004

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