

Messrs Hawthorn Leslie & Co S.S. No 382
Engine 2495

No. 44,089

pt. 4.

REPORT ON MACHINERY.

Port of Newcastle on Tyne

Received at London Office 6 SEP 1902

No. in Survey held at Newcastle

Date, first Survey Apr. 18. 1901 Last Survey 29 Aug. 1902

Registered on the Steel Twin S.S. TURAKINA

(Number of Visits 1)
Gross 8027.20
Net 5164.29

Master Forbes Built at Newcastle By whom built Hawthorn Leslie & Co When built 1902

Engines made at Newcastle By whom made Hawthorn Leslie & Co when made 1902

Rollers made at D By whom made D when made 1902

Registered Horse Power 846 Owners New Zealand S.S. Co. Ltd Port belonging to Plymouth

Net Horse Power as per Section 28 846 Is Refrigerating Machinery fitted Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Exp. No. of Cylinders 6 No. of Cranks 6

a. of Cylinders 25.42.71 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 14.4 as fitted 15 Lgth. of stern bush 66

a. of Tunnel shaft as per rule 13.23 Dia. of Crank shaft journals as per rule 13.9 as fitted 14.9 Dia. of Crank pin 14.5 Size of Crank webs 8 3/4 x 21 Dia. of thrust shaft under bars 14 Dia. of screw 16.6 Pitch of screw 20.0 No. of blades 4 State whether moveable Yes Total surface 78 1/2

a. of Feed pumps 4 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes

a. of Bilge pumps 4 Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work Yes

a. of Donkey Engines 2 Sizes of Pumps 9 1/2 x 12, 7 x 12, 12 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three 3 1/2 In Holds, &c. In all holds - Two 3 1/2

a. of bilge injections 2 sizes 9 Connected to condenser 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 None

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cooks 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 & 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 forward bilge pipes How are they protected string wood casing

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 the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from bridge platform

BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 10893 Is forced draft fitted Yes

a. and Description of Boilers 5 Cyl. Mult. Working Pressure 200 Tested by hydraulic pressure to 400

Date of test 24.3.02 Can each boiler be worked separately Yes Area of fire grate in each boiler 584 No. and Description of safety valves to each boiler 2 Spring Area of each valve 8.3 Pressure to which they are adjusted 200 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean dia. of boilers 14.6 Length 11.6 Material of shell plates S

Thickness 7/16 Range of tensile strength 29/30 Are they welded or flanged No Descrip. of riveting: cir. seams 7 C long. seams 2 S

Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 10 Lap of plates or width of butt straps 22 2 3/4

Percentages of strength of longitudinal joint 91 Working pressure of shell by rules 232 Size of manhole in shell 16 x 12

a. of compensating ring 24 x 20 x 17/16 No. and Description of Furnaces in each boiler Barrow Can Material S Outside diameter 40 1/2

Length of plain part top Thickness of plates bottom 5/8 Description of longitudinal joint welded No. of strengthening rings 1

Working pressure of furnace by the rules 217 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 2 1/32 Top 5/8 Bottom 1 1/16

Each of stays to ditto: Sides 8 x 8 1/4 Back 8 x 9 Top 8 x 5 1/2 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 198

Material of stays S Diameter at smallest part 1.787 Area supported by each stay 72 Working pressure by rules 224 End plates in steam space: Material S Thickness 1 9/32 Pitch of stays 18 1/2 x 15 1/2 How are stays secured draw Working pressure by rules 269 Material of stays S

Area supported by each stay 7.35 Working pressure by rules 250 Material of Front plates at bottom S

Thickness 1 Material of Lower back plate S Thickness 1 Greatest pitch of stays as per plan Working pressure of plate by rules 200

Diameter of tubes 2 1/2 Pitch of tubes 3 5/8 x 3 3/8 Material of tube plates S Thickness: Front 1 Back 13/16 Mean pitch of stays 10 7/8 x 10 1/2

Each across wide water spaces 12 5/8 Working pressures by rules 209 Girders to Chamber tops: Material S Depth and thickness of girder at centre 11 1/2 x 14 Length as per rule 3 1/2 Distance apart 9 1/2 Number and pitch of Stays in each 3-8

Working pressure by rules 270 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes

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

Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

Stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes



2902 5411

DONKEY BOILER— No. 1 Description Mine? Cyl.
 Made at Newcastle By whom made Hawthorn Leslie & Co. When made 1902 Where fixed Shorehole
 Working pressure 200 Tested by hydraulic pressure to 400 No. of Certificate 6304 Fire grate area 454 Description of safety valves spring
 No. of safety valves 2 Area of each 3.97 Pressure to which they are adjusted 200 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 13-0 Length 10-6 Material of shell plates S. Thickness 1 9/32 Range of tensile strength 29 Descrip. of riveting long. seams a shape Dia. of rivet holes 1 7/16 Whether punched or drilled d. Pitch of rivets 8 3/4
 Lap of plating 1 9/32 Percentage of strength of joint 85 Rivets 89 Thickness of shell crown plates 1 3/8 Radius of do. Pitch No. of Stays to do. 17 1/2 x 19
 Dia. of stays 8-47 Diameter of furnace Top 40 1/2 Bottom ✓ Length of furnace ✓ Thickness of furnace plates 1/2 + 1/2 Description of joint Welder Thickness of furnace crown plates 11/16 Stayed by Iron Stay 7-89 1-8 Working pressure of shell by rules 206
 Working pressure of furnace by rules 203 Diameter of uptake ✓ Thickness of uptake plates 3 3/4 F1 Thickness of water tubes ✓

SPARE GEAR. State the articles supplied:— Tail shaft, crank shaft, propeller blades two top end, two bottom end, two main bearings & one set coupling bolts, feed & helix valve, pistons, springs, smoothed bolts & nuts a few bars of iron & other gear. For **R. & W. HAWTHORN, LESLIE & Co., Ltd.**

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
 During progress of work in shops: 1901 Apr. 18, 22, 26. May 3, 4, 20, 22, 23, 25, 31. June 12, 14. July 8, 23, 25. Aug. 2, 4, 21. Sep. 11, 20, 24. Oct. 16, 24, 31.
 During erection on board vessel: 1902 Nov. 5, 12. Dec. 3, 6, 9, 14, 20. 1903 Jan. 16, 20, 24, 29. Feb. 3, 5, 14, 25, 28. Mar. 5, 4, 19, 24. Apr. 3, 5, 10, 17, 21, 24, 25, 28, 29.
 Total No. of visits 84 Is the approved plan of main boiler forwarded herewith Yes

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

The workmanship is good

Material of screw shaft Cast Iron 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 ✓

The Machinery has been built under special Survey & is eligible in my opinion for classification & the record + I.M.C. 9.02.

It is submitted that this vessel is eligible for THE RECORD. + I.M.C. 8.02. F.D. Elec. light Ref. Mchry.

C.M.
9.9.02

J.H.
9.9.02

The amount of Entry Fee... £ 3 : :
 Special... £ 62.6 : :
 Donkey Boiler Fee... £ - : :
 Travelling Expenses (if any) £ - : :
 When applied for, 9.9.02
 When received, 10/9/02

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

Committee's Minute

TUES, 9 SEP 1902

Assigned

+ I.M.C. 8.02
 F.D. Elec. light
 Ref. Mchry



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 Foundation

Newcastle of 1901

Certificate (if registered) to be sent to
 (The Surveyors are requested not to write on or obliterate space for Committee's Minutes)