

REPORT ON MACHINERY

No. 31687
THU. JUL. 16. 1912

Received at London Office

Date of writing Report 4.7.12 When handed in at Local Office 15/7/12 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 31st May/11 Last Survey 8th July 1912
 Reg. Book. on the "Indrakuala" (Number of Visits) Tons Gross 5691
 Master Smith Built at Glasgow By whom built C. Coumell & Co When built 1912
 Engines made at Glasgow By whom made Dunoon, Jackson & Co (297) when made 1912
 Boilers made at ditto By whom made ditto when made 1912
 Registered Horse Power _____ Owners India Line Ltd Port belonging to Liverpool
 Nom. Horse Power as per Section 28 687 Is Refrigerating Machinery fitted for cargo purposes? _____ Is Electric Light fitted? _____

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26 1/2 - 45 - 70 Length of Stroke 54 Revs. per minute 75 Dia. of Screw shaft 10.66 Material of screw shaft S
 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 banded Yes 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 Yes Length of stern bush 5-9
 Dia. of Tunnel shaft 14 3/8 Dia. of Crank shaft journals 14.66 Dia. of Crank pin 15 1/2 Size of Crank webs 29 x 10 1/2 Dia. of thrust shaft under
 collars 15 3/8 Dia. of screw 19.0 Pitch of Screw 19.0 No. of Blades 4 State whether moceable Yes Total surface 120
 No. of Feed pumps 2 Diameter of ditto _____ Stroke _____ Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 30 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 7 x 9, 10 1/2 x 15, 4 x 8 + 2 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4-3 1/2 In Holds, &c. 2-3 1/2 in each hold
 No. of Bilge Injections 1 sizes 1 1/2 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 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 _____
 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 above
 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 Four Hold Suction How are they protected plated over
 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 4-6-12 of Stern Tube 4-6-12 Screw shaft and Propeller 4-6-12
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from U E R Platform
 Manufacturers of Steel Coumell & Spencers

BOILERS, &c.—(Letter for record RTR)
 Total Heating Surface of Boilers 2851 Is Forced Draft fitted No No. and Description of Boilers 2 Double Ended
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 14-6-12 No. of Certificate 11647
 Can each boiler be worked separately Yes Area of fire grate in each boiler 120 ft No. and Description of Safety Valves to
 each boiler 2 Direct Spring Area of each valve 12.56 Pressure to which they are adjusted 205 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1-6 Mean dia. of boilers 14.0 Length 18.6 Material of shell plates S
 Thickness 1 3/16 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams TR
 long. seams TR. D.B.S. Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 10 1/16 Top of plates or width of butt straps 1-10 5/8
 Per centages of strength of longitudinal joint _____ Working pressure of shell by rules 205 Size of manhole in shell 16 x 12
 Size of compensating ring McNish No. and Description of Furnaces in each boiler 6 Morrison Material S Outside diameter 4-4
 Length of plain part _____ Thickness of plates _____ Description of longitudinal joint weld No. of strengthening rings _____
 Working pressure of furnace by the rules 212 Combustion chamber plates: Material S Thickness: Sides 1 1/16 Back 1 1/16 Top 1 1/16 Bottom 1 1/16
 Pitch of stays to ditto: Sides 9 1/8 + 8 7/8 Back 8 3/4 + 9 1/2 stays are fitted with nuts or riveted heads Yes Working pressure by rules 203
 Material of stays Iron Diameter at smallest part 2.309 Area supported by each stay 81 Working pressure by rules 215 End plates in steam space: _____
 Material S Thickness 1 3/16 Pitch of stays 18 1/2 How are stays secured DN Working pressure by rules 201 Material of stays S
 Diameter at smallest part 6.33 Area supported by each stay 315 Working pressure by rules 208 Material of Front plates at bottom S
 Thickness 1 1/16 Material of Lower back plate None Thickness 1 1/16 Greatest pitch of stays _____ Working pressure of plate by rules _____
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 + 4 3/8 Material of tube plates S Thickness: Front 1 1/16 Back 1 Mean pitch of stays 11 3/4
 Pitch across wide water spaces 14 3/16 Working pressures by rules 211 Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 13 x 1 (2) Length as per rule 4-0 Distance apart 9 1/8 Number and pitch of stays in each 4 at 8 3/4
 Working pressure by rules 208 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 _____

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the ship?

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____ When made _____ Where fixed _____
 Made at _____ By whom made _____
 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 _____ Rivets _____ Plates _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____
 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 _____ Radius of do. _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 2 Connecting Rod bolts, 2 for top end ditto for bottom
 2 main bearing bolts, 1 set of coupling bolts, 1 set of Feed, Belge pump
 valves, 1 set of Piston Rings, a quantity of assorted bolts, nuts & a quantity
 of iron of various sizes

The foregoing is a correct description,
 James Fletcher, Manager, Manufacturer.

Dates of Survey while building	1911 May 31, June 19, 30, July 6, 31, Aug 7, 21, 31, Sep 7, 11, 24, 26, 30, Nov 7, 9, 13, 16, 20, 28, 29
During progress of work in shops	Dec 5, 15, 19, 30, 1912 Jan 8, 11, 17, 29, Feb 6, 12, 15, 20, 22, 27, Mar 7, 12, 18, 27, 29, April 3, 4, 12, 15, 18, 19, 24, 26
During erection on board vessel	May 2, 6, 9, 14, 30, 31, 27, 28, June 3, 4, 10, 12, 14, 19, 24, 26, 27, July 3, 8
Total No. of visits	Is the approved plan of main boiler forwarded herewith <input checked="" type="checkbox"/> Yes

Dates of Examination of principal parts	Cylinders 3, 4, 12 Slides 7, 3, 12 Covers 27, 3, 12 Pistons 24, 4, 12 Rods 27, 3, 12
Connecting rods	27, 3, 12 Crank shaft 6, 5, 12 Thrust shaft 27, 3, 12 Tunnel shafts 24, 4, 12 Screw shaft 14, 5, 12 Propeller 20, 5, 12
Stern tube	20, 5, 12 Steam pipes tested 26, 6, 12 Engine and boiler seatings 4, 6, 12 Engines holding down bolts 3, 4, 12
Completion of pumping arrangements	8, 7, 12 Boilers fixed 19, 6, 12 Engines tried under steam 10, 7, 12
Main boiler safety valves adjusted	3, 4, 12 Thickness of adjusting washers 5/16 PY 1 1/2 5/16 PY 1/16 P 3/8 full S 3/8
Material of Crank shaft	Identification Mark on Do. LLOYDS WGM 394 Material of Thrust shaft S Identification Mark on Do. ditto
Material of Tunnel shafts	Identification Marks on Do. ditto Material of Screw shafts S Identification Marks on Do. ditto
Material of Steam Pipes	Iron Test pressure 600lb

General Remarks (State quality of workmanship, opinions as to class, &c.) These Engrs. & Surveyors have seen built under special survey in accordance with the approved plan & the workmanship & material are of good quality. The Machinery is eligible in my opinion for the record of LMC 7-12. This vessel is a duplicate of the S/S "Indrauni" Glasgow Rept. No. 31310.

It is submitted that this vessel is eligible for the RECORD + LMC 7.12

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

The amount of Entry Fee	£ 3	When applied for	5/7/12
Special	£ 54	When received	10/7/12
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute
 Assigned LMC 7.12
 GLASGOW 17 JUL 1912

MACHINERY CERTIFICATE WRITTEN 247



Glasgow

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

Date of writing
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