

Received from
Surveyor.

REPORT ON MACHINERY.

JUL 15 1901

14 OCT. 1901

Port of Glasgow

Received at London Office

No. in Survey held at Glasgow

Date, first Survey 11 Decr 1900 Last Survey 8 Octr 1901

Reg. Book.

(Number of Visits 17)

on the

S. S. "INDRASAMHA"

Gross 5196.64
Net 3366.61

Master Horfal

Built at Glasgow

By whom built C. Connell & Co.

When built 1901

Engines made at Glasgow

By whom made D. Rowan & Co.

when made 1901

Boilers made at Glasgow

By whom made D. Rowan & Co.

when made 1901

Registered Horse Power

Owners T. B. Royden.

Port belonging to Liverpool

Nom. Horse Power as per Section 28 500.

Is Refrigerating Machinery fitted No

Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple expansion, screw No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26" 44" 73" Length of Stroke 48 Revs. per minute 68 Dia. of Screw shaft as per rule 14.85 as fitted 15 3/4" Lgth. of stern bush 5' 0"
 Dia. of Tunnel shaft as per rule 13.57 as fitted 13 3/4" Dia. of Crank shaft journals as per rule 14.74 as fitted 14 1/2" Dia. of Crank pin 14 1/2" Size of Crank webs 10" thick Dia. of thrust shaft under collars 14 1/2" Dia. of screw 17" 6" Pitch of screw 18" 6" No. of blades 4 State whether moveable yes Total surface 84 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 7" Stroke 21" Can one be overhauled while the other is at work yes. Weir's automatic.
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes.
 No. of Donkey Engines three Sizes of Pumps { 9" x 12" x 10" + 6 1/4" x 5" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room + Stokehold 4 - 3 1/2" dia. In Holds, &c. Two in each No. 1, 2 & 3.
 holds 3" dia. + one in Tunnel well
 No. of bilge injections 1 sizes 6" Connected to condenser, or to circulating pump pumps 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 none
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both 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 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 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 before launch Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from top platform.

BOILERS, &c.— (Letter for record (5) Total Heating Surface of Boilers 6954 sq. ft. Is forced draft fitted yes.
 No. and Description of Boilers Three single ended Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs
 Date of test 18/8/01 Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq. ft. No. and Description of safety valves to each boiler 2 Patent Spring Area of each valve 8.29" Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 13" 9" Length 11" 9" Material of shell plates steel
 Thickness 1 1/4" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams { Ends double Centre treble long. seams treble
 Diameter of rivet holes in long. seams 15/16" Pitch of rivets 9/8" Lap of plates or width of butt straps 19 1/2"
 Per centages of strength of longitudinal joint rivets 89.3 plate 85.6 Working pressure of shell by rules 201 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 32 1/2" x 28 1/2" x 1 1/4" No. and Description of Furnaces in each boiler 3 Morison Material steel Outside diameter 3' 9"
 Length of plain part top } Thickness of plates crown } 19 1/2" Description of longitudinal joint welded No. of strengthening rings ✓
 bottom } bottom }
 Working pressure of furnace by the rules 210 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 7/32" Top 7/32" Bottom 7/8"
 Pitch of stays to ditto: Sides 7 1/8" x 9" Back 8 3/4" x 8" Top 9 x 8 1/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 213 lbs
 Material of stays steel Diameter at smallest part 1.76" Area supported by each stay 70" Working pressure by rules 205 lbs End plates in steam space:
 Material steel Thickness 13/16" Pitch of stays 17 1/2" x 20" How are stays secured nuts Working pressure by rules 208 lbs Material of stays steel
 Diameter at smallest part 7.59" Area supported by each stay 350 lbs Working pressure by rules 216 lbs Material of Front plates at bottom steel
 Thickness Material of Lower back plate steel Thickness { 3/4" + Greatest pitch of stays 14" x 8" Working pressure of plate by rules 337 lbs
 { 3/4" doubling
 Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 5/8" Material of tube plates steel Thickness: Front { 3/4" + Back 7/8" Mean pitch of stays 7 1/4"
 { 3/4" doubling
 Pitch across wide water spaces 13 1/2" Working pressures by rules 284 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 2-8 1/4" x 1 1/32" Length as per rule 2' 9 1/2" Distance apart 8 1/8" Number and pitch of Stays in each 3-9"
 Working pressure by rules 209 lbs 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 ✓

Lloyd's Register
David Rowan & Co.

1710-855M

DONKEY BOILER— No. *One* Description *Horizontal single ended.*
 Made at *Glasgow* By whom made *D. Rowan & Co.* When made *1901* Where fixed *in Stockholm*
 Working pressure *100 lb* tested by hydraulic pressure to *120 lb* No. of Certificate *6001* Fire grate area *29.68* Description of safety valves *patent*
 No. of safety valves *2* Area of each *105 lb* Pressure to which they are adjusted *105 lb* If fitted with easing gear *yes* If steam from main boiler
 enter the donkey boiler *no* Dia. of donkey boiler *10" 9"* Length *9' 6"* Material of shell plates *steel* Thickness *3/4"* Range of te
 strength *27-32* Descrip. of riveting long. seams *treble lap* Dia. of rivet holes *1 1/16"* Whether punched or drilled *drilled* Pitch of rivets *1"*
 Lap of plating *7/4"* Per centage of strength of joint *73.5* Thickness of shell *end* plates *3/4"* Radius of do. *1/4"* No. of Stays to do. *16*
 joint *welded* Thickness of furnace *Top 37" Bottom 37"* Length of furnace *9' 6"* Thickness of furnace plates *9/16"* Descripti
 area *2.66* Diameter of furnace *Top 37" Bottom 37"* Length of furnace *9' 6"* Thickness of furnace plates *9/16"* Descripti
 joint *welded* Thickness of furnace *Top 37" Bottom 37"* Length of furnace *9' 6"* Thickness of furnace plates *9/16"* Descripti
 Working pressure of furnace by rules *122 lb* Diameter of *tubes 3"* Thickness of *uptake plates 1/16"* Thickness of *scater tubes 1/4"*

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end connecting rods, two main bearing bolts, one set coupling bolts, one set of feed & bilge pump valves.*

The foregoing is a correct description,

David Rowan & Co. Manufacturer.

Dates { During progress of work in shops - 1900: - Dec 11. 1901: - Jan 9. 16. Feb. 1. 19. 15. May 3. 8. 19. 21. 15. 20. 24. 31.
 of Survey { During erection on board vessel - Aug 9. 12. 13. 18. Sep 2. 4. 6. 9. 12. 17. 18. 27. Oct 8.
 while building { Total No. of visits *27*. Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

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

Material of screw shaft *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
 non-corrosive *yes*. If two liners are fitted, is the shaft lapped or protected between the liners *yes*

The machinery of this vessel has been constructed under Special Survey, the material & workmanship are of good quality, it has been securely fitted on board & tried under steam.

In my opinion it is eligible to be classed in the Register book, with the record of **+ L.M.C. 10.01.**

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 10.01 F.D. Blue light

16.10.01

The amount of Entry Fee. *£ 3* : : When applied for, *12/10/01*
 Special *£ 45* : : *not*
 Donkey Boiler Fee *£* : : When received, *15/10/01*
 Travelling Expenses (if any) *£* : : *15/10/01*

Committee's Minute *Glasgow. 14 OCT. 1901*

Assigned

+ L.M.C. 10.01

When fee paid

MACHINERY CERTIFICATE
 WRITTEN 16.10.01

J.W. Dimmock
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships



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Lloyd's Register
 Foundation

Port of *Stockholm*

No. in Reg. Book *7*
 Owners *Yard No. 338*

DESCRIPTION

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C 17

D 39

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DESCRIPTION

Main cable carry

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Branch cables can

Leads to lamps c

Cargo light cables

DESCRIPTION

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How are the cab