

Received from
Surveyor.

REPORT ON MACHINERY.

DEC. 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. " S. S. "INDRASAMHA" (Number of Visits 7) Tons ^{Gross} 5196.64

on the S. S. "INDRASAMHA" ^{Net} 3366.61

Master Horval 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 J. 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 Lgth. of stern bush 5.0

Dia. of Tunnel shaft ^{as per rule} 13.57 Dia. of Crank shaft journals ^{as per rule} 14.74 Dia. of Crank pin 14 1/2" Size of Crank webs 10" tk 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 nos 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 28-37 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} ✓ ^{bottom} ✓ Thickness of plates ^{top} 19/32" ^{bottom} 19/32" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 210 lbs Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 2 1/32" Top 2 1/32" 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 ^{Area} 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

^{Area} 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 3/4" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 14" x 8" Working pressure of plate by rules 337 lbs

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"

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.

17110-8555M

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 *300 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 *1/16"* Whether punched or drilled *drilled* Pitch of rivets *1"*
 Lap of plating *7/4"* Per centage of strength of joint *73.6* Rivets *74* Thickness of shell ~~cover~~ plates *3/4"* Radius of do. *nick* No. of Stays to do. *16*
 area *2.66* Dia. of stays. *3"* Diameter of furnace *Top 37" Bottom 37"* Length of furnace *9' 6"* Thickness of furnace plates *9/16"* Descrip
 joint *welded* Thickness of furnace ~~cover~~ plates *15/32"* Stays by *screwed* *hikkes 8 x 8 3/8"* Working pressure of shell by rules *179*
 Working pressure of furnace by rules *122 lb* Diameter of *tubes* *3"* Thickness of *uptake* plates *1/16"* *1/16"* doubling *stay* Thickness of *scater* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end connecting rods bolts, 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, 29, Jun 2, 15, 20, July 3, 8*
 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 *✓*

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*

J.W. Dimmock
 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) *£* : : *19*

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

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

Assigned *+ L.M.C. 10.01*
When fee paid



DEC 1901
 Port of
 No. in Reg. Book
 7
 Owners
 Yard No. 338
 DESCRIPTION
 to one do
 Capacity of Dy
 Where is Dyna
 Position of Ma
 Positions of au
 Mess Room
 If cut outs are
 circuits
 If vessel is wire
 Are the cut outs
 Are all cut outs
 are perman
 Are all switches
 Total number of
 A 11
 B 24
 C 17
 D 39
 E 30
 2 Mast
 2
 5
 If are lights, wh
 Where are the
 DESCRIPTION
 Main cable carry
 Branch cables ca
 Branch cables ca
 Leads to lamps ca
 Cargo light cables
 DESCRIPTION
 braided
 Joints in cables,
 or welded
 Are all the joint
 made in bur
 Are there any jo
 How are the cab

Certificate (if registered) to be sent to Committee's Minute.

The Surveyors are requested not to write on or below the space for Committee's Minute.