

REPORT ON MACHINERY.

8585

No. 8585

Received at London Office 31 DEC 1893

No. in Survey held at Greenock & Glasgow Date, first Survey 16th Feb 1883 Last Survey 28th Dec 1883

Reg. Book. on the S.S. "Cassia" (Number of Visits 57) Tons 1163.41
748.83

Master Ryan Built at Port Glasgow By whom built Murdoch & Murray When built 1883

Engines made at Greenock By whom made Kincaid & Co when made 1883

Boilers made at Glasgow By whom made H. Wallace & Coy when made 1883

Registered Horse Power 99 Owners Stephen, Mawson & Goss Port belonging to Newport, Mon.

ENGINES, &c.—

Description of Engines Compound Inverted Direct Acting

Diameter of Cylinders 29 & 57 Length of Stroke 39 No. of Rev. per minute 75 Point of Cut off, High Pressure 22 Low Pressure 22

Diameter of Screw shaft 9 3/4 Diam. of Tunnel shaft 9 1/2 Diam. of Crank shaft journals 10 Diam. of Crank pin 10 size of Crank webs 11 3/4 x 6 1/2

Diameter of screw 13.6 Pitch of screw 1 7/8 No. of blades Four state whether moveable no total surface 57 sq feet

No. of Feed pumps Two diameter of ditto 3 Stroke 21 Can one be overhauled while the other is at work yes

No. of Bilge pumps Two diameter of ditto 3 Stroke 21 Can one be overhauled while the other is at work yes

Where do they pump from Engine Room, Cargo Hold & Tanks

No. of Donkey Engines Two Size of Pumps 4 7/8 x 10 & 6 x 8 Where do they pump from 6 pumps from sea, tanks, & bilges. 4 7/8 pump from sea, tanks, bilges, hot well & main boiler

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections two and sizes 1 Are they connected to condenser, or to circulating pump Circulating pump

How are the pumps worked By Levers

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 Pinch & Steering Engine pipes How are they protected Scrubbed Wood

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 27th December 1883

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Engine Room top platform

BOILERS, &c.—

Number of Boilers One Description Cylindrical Multitubular Whether Steel or Iron (Steel)

Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test December 1st 1883

Description of superheating apparatus or steam chest Vertical Steam Chest with neck

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately No Superheater

No. of square feet of fire grate surface in each boiler 78 sq feet Description of safety valves Direct spring No. to each boiler Two

Area of each valve 19.6 sq Are they fitted with easing gear yes No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork 8 Diameter of boilers 16" 6"

Length of boilers 10' 4" description of riveting of shell long. seams Quad. Riv. Lap. circum. seams trunk Riv Lap. Thickness of shell plates 27/32

Diameter of rivet holes 1 3/16 whether punched or drilled punched pitch of rivets 5 1/2 Lap of plating 10 1/2

Per centage of strength of longitudinal joint 48% working pressure of shell by rules 80 lbs size of manholes in shell 15" x 12"

Size of compensating rings Slot ring 4" x 3/4" No. of Furnaces in each boiler 4

Outside diameter 3' 4" length, top 6' 6" bottom 9' 6" thickness of plates 1/2 description of joint trunk butt shop if rings are fitted bottom

Greatest length between rings — working pressure of furnace by the rules 86 lbs combustion chamber plating, thickness, sides 1/2 back 1/2 top 1/2

Pitch of stays to ditto, sides 8 1/2 + 8 1/2 back 8 1/2 + 8 1/2 top Circle stays are fitted with nuts or riveted heads Riveted working pressure of plating by rules 89 lbs

Diameter of stays at smallest part 1 1/8 working pressure of ditto by rules 83 lbs end plates in steam space, thickness 23/32

Pitch of stays to ditto 15" x 14 1/2" how stays are secured Nuts & Washers working pressure by rules 82 lbs diameter of stays at smallest part 3 working pressure by rules 83 lbs Front plates at bottom, thickness 11/16 Back plates, thickness 11/16

Greatest pitch of stays 12" x 8 1/2" working pressure by rules 80 lbs Diameter of tubes 3 1/2 x 4 pitch of tubes 4 1/4 x 4 1/4 thickness of tube plates, front 11/16 back 11/16 how stayed Clubs pitch of stays 14 1/4 x 14 1/4 width of water spaces 8

Diameter of Superheater or Steam chest 3' 0" length 5' 6" thickness of plates 7/16 description of longitudinal joint trunk lap diam. of rivet holes 13/16

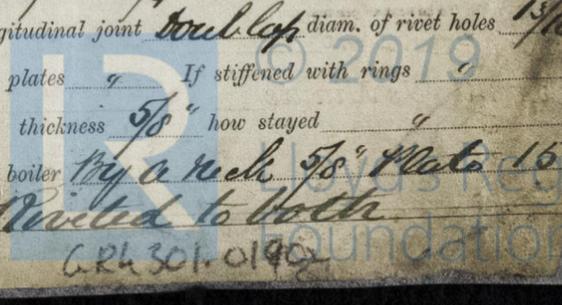
Pitch of rivets 3 1/4 working pressure of shell by rules 160 lbs diameter of flue 4 thickness of plates — If stiffened with rings —

Distance between end plates of superheater, or steam chest; thickness 5/8 how stayed —

Superheater or steam chest; how connected to boiler By a neck 5 1/2" Plate 15"

dia Flanged & Riveted to both

Form No. 8-2100-27788
State of Report is also sent on the 1 of 6 Ship



DONKEY BOILER— Description *Vertical with Cross Tubes (Steel.)*
 Made at *Glasgow* by whom made *J. Wilson & Son* when made *1883* where fixed *in Mather's hole*
 Working pressure *180 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *12.10.* fire grate area *19 sq. ft.* description of safety
 valves *Direct spring* No. of safety valves *2* area of each *9.64* if fitted with easing gear *100* if steam from main boilers can
 enter the donkey boiler *yes* diameter of donkey boiler *6'-0"* length *11'-0"* description of riveting *Single & double*
 Thickness of shell plates *13/32* diameter of rivet holes *13/16* whether punched or drilled *punched* pitch of rivets *2 1/8* lap of plating *2 1/2*
 per centage of strength of joint *72* thickness of crown plates *1/2* stayed by *6 rod stays 1 1/2" dia*
 Diameter of furnace, top *4'-4 1/2"* bottom *5'-2 1/2"* length of furnace *5'-0"* thickness of plates *13/32* description of joint *Lap.*
 Thickness of furnace crown plates *1/2* stayed by *Uptake & 6 rod stays 1 1/2" dia* working pressure of shell by rules *86 lbs*
 Working pressure of furnace by rules *Shell & furnace* diameter of uptake *17"* thickness of plates *3/8* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *1 propeller a half length of crank shaft 1 set of coupling
 bolts 2 Main bearing bolts 2 top & bottom end bolts & nuts 1 set of feed & bilge pump
 valves 1 side valve spindle 7 rubber valves for air & circulating pumps 6 boiler tubes
 6 Condenser tubes 12 junk ring pins 250 wood screws for Condenser tubes A quantity of bolts nuts & rivets*
 The foregoing is a correct description,
Amcaid & Co. Manufacturers of Engines.

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers have been
 specially surveyed during construction. Quality of workmanship good. And the
 Engines & Boilers are now in good order to safe working condition. And are in
 my opinion eligible to be noted in the Register Book L.M.C. 12.83.*

*Condenser screw. Tunnel & Thrust Shafts when being rough turned and found
 them apparently free from flaws & defects.*

*It is submitted that this vessel
 is eligible to have the
 L.M.C. recorded AM 7/1/84*

[Large blue scribble]

*Credit Glasgow Office
 with £3.11.0 of Special Fee*

The amount of Entry Fee £ 1 : 0 : 0 received by me,
 Special £ 14 : 17 : 03 at Glasgow 29/12/83
 Donkey Boiler Fee £ 2 : 2 : 0 Glasgow 15/10/83 (M.D.)
 Certificate (if required) £ gratis 18
 To be sent as per margin.
 Travelling Expenses, if any, £ none

Arthur J. Wilson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Glasgow District.

Committee's Minute

TUESDAY 1 JAN 1884

