

Port of Glasgow

Received at London Office JUL 28 JUL 1903

No. in Survey held at Glasgow
Reg. Book.Date, first Survey 16th March Last Survey 10th June 1903(Number of Visits 16)

on the

S.S. "HAWTHORN."

Tons

Gross

Net

When built 1903

Master

Built at GreenockBy whom built G. Brown & Co.Engines made at GlasgowBy whom made Muir & Houston Ltd.

(554)

when made 1903Boilers made at GlasgowBy whom made Muir & Houston Ltd.when made 1903Registered Horse Power ✓

Owners

Port belonging to

Nom. Horse Power as per Section 28 47Is Refrigerating Machinery fitted NoIs Electric Light fitted No

ENGINES, &c.—Description of Engines

Triple expansion—ScrewNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 11", 17", 28"Length of Stroke 25"Revs. per minute 115

Dia. of Screw shaft

as per rule 6.47"Material of ironas fitted 6.3/4"

screw shaft

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 ✓

If two

liners are fitted, is the shaft lapped or protected between the liners ✓Length of stern bush 2' 3"

Dia. of Tunnel shaft

as per rule none

as fitted

Dia. of Crank shaft journals

as per rule 5.87"as fitted 6"Dia. of Crank pin 6"Size of Crank webs 3 7/8 th

Dia. of thrust shaft under

collars 6"Dia. of screw 8" 2"Pitch of screw 7 1/4 to 9 1/4No. of blades 4State whether moveable noTotal surface 27 sq. ft.No. of Feed pumps 1Diameter of ditto 2 1/2"Stroke 10"Can one be overhauled while the other is at work ✓No. of Bilge pumps 1Diameter of ditto 2 1/2"Stroke 10"Can one be overhauled while the other is at work ✓No. of Donkey Engines oneSizes of Pumps 4" x 3 1/2" x 6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2" dia.In Holds, &c. One 2" dia.No. of bilge injections 1sizes 2 1/2"Connected to condenser, or to circulating pump pumpIs a separate donkey suction fitted in Engine room & size yes 2"Are all the bilge suction pipes fitted with roses yesAre the roses in Engine room always accessible yesAre the sluices on Engine room bulkheads always accessible noneAre all connections with the sea direct on the skin of the ship yesAre they Valves or Cocks valves + cocksAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yesAre the discharge pipes above or below the deep water line aboveAre they each fitted with a discharge valve always accessible on the plating of the vessel yesAre the blow off cocks fitted with a spigot and brass covering plate yesWhat pipes are carried through the bunkers noneHow are they protected ✓Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock before launchIs it fitted with a watertight door ✓worked from ✓

BOILERS, &c.—

(Letter for record (7))Total Heating Surface of Boilers 830 sq. ft.Is forced draft fitted noNo. and Description of Boilers One single endedWorking Pressure 180 lbsTested by hydraulic pressure to 360 lbsDate of test 10/6/03Can each boiler be worked separately ✓Area of fire grate in each boiler 30 sq. ft.

No. and Description of safety valves to

each boiler 2 patent springArea of each valve 3.14"Pressure to which they are adjusted 185 lbsAre they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 3' 6"Mean dia. of boilers 10' 6"Length 9' 6"Material of shell plates steelThickness 29/32"Range of tensile strength 28 to 32 tonsAre they welded or flanged noDescrip. of riveting: cir. seams doublelong. seams trebleDiameter of rivet holes in long. seams 1 1/8"Pitch of rivets 7 1/2"Lap of plates or width of butt straps 1' 5"

Per centages of strength of longitudinal joint

rivets 86plate 85Working pressure of shell by rules 183 lbsSize of manhole in shell 16" x 12"Size of compensating ring Mc Neil'sNo. and Description of Furnaces in each boiler 2 plainMaterial steelOutside diameter 3' 3"

Length of plain part

top 5' 10"bottom 5' 6"

Thickness of plates

crown 25/32"bottom 25/32"Description of longitudinal joint weldedNo. of strengthening rings 1 partialWorking pressure of furnace by the rules 186 lbsCombustion chamber plates: Material steelThickness: Sides 5/8"Back 19/32"Top 5/8"Bottom 5/8"Pitch of stays to ditto: Sides 8" x 8 1/2"Back 8" x 8"Top 7 1/4" x 8 1/2"If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 190 lbsMaterial of stays ironDiameter at smallest part 2.03"Area supported by each stay 68"Working pressure by rules 224"

End plates in steam space:

Material steelThickness 1 3/16"Pitch of stays 19" x 21"How are stays secured nutsWorking pressure by rules 196 lbsMaterial of stays steelArea at smallest part 8.47"Area supported by each stay 399"Working pressure by rules 212 lbsMaterial of Front plates at bottom steelThickness 1 1/16"Material of Lower back plate steelThickness 1 1/16"Greatest pitch of stays 12 1/2" x 8"Working pressure of plate by rules 256 lbsDiameter of tubes 3 1/4"Pitch of tubes 4 1/2" x 4 5/8"Material of tube plates steelThickness: Front 1 1/16" + 5/8" doublingBack 1 1/16"Mean pitch of stays 9 1/8"Pitch across wide water spaces 13 1/2"Working pressures by rules 197 lbsGirders to Chamber tops: Material Iron

Depth and

thickness of girder at centre 7 1/2" x 2-3/4"Length as per rule 28Distance apart 7 1/4"Number and pitch of Stays in each 2-8 1/2"Working pressure by rules 191 lbsSuperheater 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

Foundation

WIDEN-0270

2000-7-02-Copyable Ink.

DONKEY BOILER— No. *One* Description *Ordinary Vertical*
 Made at *Glasgow* By whom made *Muir & Houston Ltd* When made *1903* Where fixed *in stokehold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *6715* Fire grate area *12* \square ft Description of safety valves *patent spring*
 No. of safety valves *one* Area of each *6.49* Pressure to which they are adjusted *85 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *4' 6"* Length *9' 6"* Material of shell plates *steel* Thickness *3/8"* Range of tensile strength *27-32* Descrip. of riveting long. seams *double (lap)* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3 1/4"*
 Lap of plating *5"* Per centage of strength of joint Rivets *96* Thickness of shell crown plates *9/16"* Radius of do. *4' 6"* No. of Stays to do. *none*
 Dia. of stays. *✓* Diameter of furnace Top *3' 9"* Bottom *4' 0"* Length of furnace *4' 0"* Thickness of furnace plates *1/2"* Description of joint *welded* Thickness of furnace crown plates *1 7/32"* Stayed by *none* Working pressure of shell by rules *102 lbs*
 Working pressure of furnace by rules *109 lbs* Diameter of uptake *10"* Thickness of uptake plates *1/2"* Thickness of water tubes *7/16"*

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

The foregoing is a correct description,
 For **MUIR & HOUSTON, LIMITED,** Manufacturer.
James Stewart

Dates of Survey while building { During progress of work in shops - - } *1903: March 17, 26, 30, 31. April 2, 6, 14, 20, 27. May 9, 13, 20, 25. June 6*
 { During erection on board vessel - - } *9.10*
 Total No. of s *16*

Is the approved plan of main boiler forwarded herewith *yes*.
 " " " donkey " " " *yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been constructed under Special Survey, the materials & workmanship are of good quality, it has been securely fitted on board, tried under steam & found satisfactory.*
In my opinion, it is eligible to be classed in the Register Book with the record of + L.M.C. 6.03

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.03

29.7.03

29.7.03

The amount of Entry Fee. £ *1* : . . : When applied for, *27.7.1903*
 Special £ *8* : *0* : *1903*
 Donkey Boiler Fee £ *✓* : . . : When received, *30.7.03*
 Travelling Expenses (if any) £ *✓* : . . : *1903*

J. W. Dummock
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Glasgow 27 JUL 1903

Assigned

+ L.M.C. 6.03
When fee is paid

MACHINERY CERTIFICATE
 WRITTEN 31-7-03



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