

REPORT ON MACHINERY.

No. 21690

Port of Glasgow

Received at London Office

19

JUES. 19 APR 1904

No. in Survey held at
Reg. Book.GlasgowDate, first Survey 1st Decr 03 Last Survey 7th April 1904(Number of Visits 17)

on the

S.S. CAIRNGORM.

Tons

Gross 401Net 117When built 1904

Master

Murdoch

Built at

Glasgow

By whom built

J. Shearer & Sons

Engines made at

Glasgow

By whom made

Muir & Houston Ltdwhen made 1904

Boilers made at

Glasgow

By whom made

Muir & Houston Ltdwhen made 1904

Registered Horse Power

92

Owners

W. Robertson

Port belonging to

Glasgow

Nom. Horse Power as per Section 28

92

Is Refrigerating Machinery fitted

No.

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Compound - ScrewNo. of Cylinders 2No. of Cranks 2

Dia. of Cylinders

18" & 40"

Length of Stroke

27"

Revs. per minute

Dia. of Screw shaft

as per rule 8 3/4"Material of ironIs the screw shaft fitted with a continuous liner the whole length of the stern tube none (bedwals) Is the after end of the liner made water tightin the propeller boss yesIf 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" 11"

Dia. of Tunnel shaft

as per rule 7 1/2"

Dia. of Crank shaft journals

as per rule 8 3/4"

Dia. of Crank pin

8 1/4"

Size of Crank webs

5 1/2" tk

Dia. of thrust shaft under

collars

8 1/4"

Dia. of screw

9" 6"

Pitch of screw

17" 0"No. of blades 4State whether moveable noTotal surface 30 sq. ft.

No. of Feed pumps

2

Diameter of ditto

2 1/2"

Stroke

13 1/2"Can one be overhauled while the other is at work yes

No. of Bilge pumps

2

Diameter of ditto

3

Stroke

13 1/2"Can one be overhauled while the other is at work yes

No. of Donkey Engines

2

Sizes of Pumps

4" x 7" x 6" &4" x 2" x 4"

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

In Engine Room One 2 1/2" dia.In Holds, &c. Two 2 1/2" dia. one in each

No. of bilge injections

1

size

3"Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size yes 2 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 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 launch Is the screw shaft tunnel watertight noneIs it fitted with a watertight door ✓worked from ✓

BOILERS, &c.—

(Letter for record (S))Total Heating Surface of Boilers 1680 sq. ft.Is forced draft fitted no

No. and Description of Boilers

one single endedWorking Pressure 130 lbsTested by hydraulic pressure to 1600 lbs

Date of test

18/3/04Can each boiler be worked separately ✓Area of fire grate in each boiler 53 sq. ft.

No. and Description of safety valves to

each boiler

2 Patent Springs

Area of each valve

7.07"Pressure to which they are adjusted 135 lbsAre they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 4" 0"

Mean dia. of boilers

13" 6"

Length

10' 0"

Thickness

7/8"

Range of tensile strength

28-37Are they welded or flanged noDescrip. of riveting: cir. seams doublelong. seams treble

Diameter 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 90plate 85Working pressure of shell by rules 137 lbsSize of manhole in shell 16" x 12"

Size of compensating ring

McNeill'sNo. and Description of Furnaces in each boiler 3 plain

Material

steel

Outside diameter

3" 4"

Length of plain part

top 6" 5"bottom 6" 2"

Thickness of plates

crown 7 1/2"bottom 7 1/2"Description of longitudinal joint weldedNo. of strengthening rings 1 partial

Working pressure of furnace by the rules

150 lbsCombustion chamber plates: Material steel

Thickness: Sides

9/16"

Back

9/16"

Pitch of stays to ditto: Sides

8" x 9"

Back

9" x 9"

Top

8" x 10"If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 135 lbs

Area

steel

Diameter

1.45"

Area supported by each stay

81"Working pressure by rules 143 lbs

End plates in steam space:

Material

steel

Thickness

1"

Pitch of stays

18" x 19"How are stays secured nutsWorking pressure by rules 138 lbs

Material of stays

steel

Area

steel

Diameter

5.05"

Area supported by each stay

342"Working pressure by rules 147 lbs

Material of Front plates at bottom

steel

Thickness

1 1/16"

Material of Lower back plate

steel

Thickness

3/4"

Greatest pitch of stays

12 1/2" x 9"Working pressure of plate by rules 164 lbs

Diameter of tubes

3 1/2"

Pitch of tubes

4 3/4" x 5"

Material of tube plates

steel

Thickness: Front

1 1/16" &

Back

5/8"

Mean pitch of stays

9 7/8"

Pitch across wide water spaces

14"Working pressures by rules 182 lbs

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

2-8" x 7/8"

Length as per rule

2" 8"

Distance apart

10"Working pressure by rules 144 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

✓Thickness ✓Material of flue plates ✓How stayed ✓End plates: Thickness ✓Working pressure by rules ✓Distance between rings ✓Working pressure by rules ✓End plates: Thickness ✓If stiffened with rings ✓Distance between rings ✓Working pressure by rules ✓End plates: Thickness ✓How stayed ✓Working pressure by rules ✓Distance between rings ✓Working pressure by rules ✓End plates: Thickness ✓How stayed ✓Working pressure by rules ✓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 ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓

DONKEY BOILER— No. *One* Description *ordinary vertical*
 Made at *Glasgow* By whom made *Muir & Houston Ltd* When made *1904* Where fixed *in stokehold*
 Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *7025* Fire grate area *10 sq ft* Description of safety valves *havent spring*
 No. of safety valves *1* Area of each *4.91* Pressure to which they are adjusted *75 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *4" 3"* 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 *96* Rivets *96* Thickness of shell crown plates *1/2"* Radius of do. *4" 3"* No. of Stays to do. *none*
 Dia. of stays. *✓* Diameter of furnace Top *3" 3 1/2"* Bottom *3" 8 1/4"* Length of furnace *4" 0"* Thickness of furnace plates *7/16"* Description of joint *welded* Thickness of furnace crown plates *1/2"* Stayed by *✓* Working pressure of shell by rules *108 lbs*
 Working pressure of furnace by rules *103 lbs* Diameter of uptake *10"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

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

The foregoing is a correct description,

For *Muir & Houston, Limited*

Manufacturer.

Dates { During progress of work in shops— 1903 Dec^r 1, 15, 28. 1904 Jan^y 11, 20, 27. Feb^y 4, 24, 29. March 3, 7, 15, 23, 30.
 of Survey { During erection on board vessel— April 1, 6, 7.
 while building { Total No. of visits 17.

Is the approved plan of main boiler forwarded herewith *No.*

See *Eng. Rept. of Ruby No 27604* *No.*
 " " " " " " " "

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 to be satisfactory.

*In my opinion, it is eligible to be classed in the Register Book, with the notation of **L.M.C. 4.04.***

It is submitted that this vessel is eligible for
THE RECORD

L.M.C. 4.04 ELEC. LIGHT

ES
20.4.04

ms
19.4.04

Certificate (if required) to be sent to

The amount of Entry Fee... £ 1 : : : When applied for, *15 APR 1904*
 Special ... £ 13 : 16 : :
 Donkey Boiler Fee ... £ : : : When received, *30/4/04*
 Travelling Expenses (if any) £ : : :

Committee's Minute

Glasgow 18 APR 1904

Assigned

+ L.M.C. 4.04

When fee is paid

MACHINERY CERTIFICATE

WRITTEN 21.4.04

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



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