

REPORT ON MACHINERY.

No. 24498

Port of Glasgow

Received at London Office

TUES. 16 OCT 1906

No. in Survey held at
Reg. Book.
on theGlasgowDate, first Survey 9th Dec^r 05 Last Survey 6th Oct 1906

(Number of Visits)

Master James S. Berne Built at Dublin By whom built Dublin Dockyard Co. (N^o 36.) Tons { Gross
Engines made at Glasgow By whom made Ross & Duncan (N^o 673) when made 1906 Net
Boilers made at Glasgow By whom made Ross & Duncan (N^o 1065) when made 1906
Registered Horse Power 127 Owners John Harrison & Co. Port belonging to London
Nom. Horse Power as per Section 28 127 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 17"-27½"-44" Length of Stroke 33" Revs. per minute 90 Dia. of Screw shaft as per rule 97/100 Material of Iron
Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight
in the propeller boss no 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 yes red lead two
liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3'-4½"
Dia. of Tunnel shaft as per rule 8.624 Dia. of Crank shaft journals as per rule 9.056 Dia. of Crank pin 9½" Size of Crank webs 6½" x 18½" Dia. of thrust shaft under
collars 9½" Dia. of screw 11'-6" Pitch of Screw 13'-3" No. of Blades 4 State whether moveable no Total surface 50 ft.
No. of Feed pumps 2 Diameter of ditto 3" Stroke 16½" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 16½" Can one be overhauled while the other is at work yes
No. of Donkey Engines 3 Sizes of Pumps 5½" x 3½" x 5" dup. No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room One 2¼", One 2½", 3" x 2" x 3" In Holds, &c. Two, 2" fore hold, Two, 2" after hold.

No. of Bilge Injections 1 size 4½" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size One 2½"
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
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 Hold Suctions How are they protected Wood casing
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
Dates of examination of completion of fitting of Sea Connections Dublin Report of Stern Tube ditto Screw shaft and Propeller ditto
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record no) Manufacturers of Steel Stewart & Lloyds L^{td}
Total Heating Surface of Boilers 2056 ft. Is Forced Draft fitted no No. and Description of Boilers One single ended
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 28-4-06 No. of Certificate 7788
Can each boiler be worked separately yes Area of fire grate in each boiler 63¼ ft. No. and Description of Safety Valves to
each boiler double, spring loaded Area of each valve 6.49" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 4'-0" Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates Steel
Thickness 1½" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R.
long. seams T. R. D. B. S. Diameter of rivet holes in long. seams 1½" Pitch of rivets 9/8" Lap of plates or width of butt straps 19"
Per centages of strength of longitudinal joint 88 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"
Size of compensating ring 7¼" x 1¼" No. and Description of Furnaces in each boiler 3. Ironiron Material Steel Outside diameter 49¼"
Length of plain part top bottom ✓ Thickness of plates 9/16" Description of longitudinal joint weld No. of strengthening rings ✓
Working pressure of furnace by the rules 80 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 27/32"
Pitch of stays to ditto: Sides 8" x 8¾" Back 8¾" x 8¾" Top 8" x 8¾" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 lbs
Material of stays Iron Diameter at smallest part 2.07" Area supported by each stay 73" Working pressure by rules 212 lbs End plates in steam space:
Material Steel Thickness 1½" Pitch of stays 16" x 18" How are stays secured D. nuts & washers Working pressure by rules 184 lbs Material of stays Steel
Diameter at smallest part 5/8" Area supported by each stay 288" Working pressure by rules 180 lbs Material of Front plates at bottom Steel
Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14¼" Working pressure of plate by rules 194 lbs
Diameter of tubes 3½" Pitch of tubes 4¾" x 4½" Material of tube plates Steel Thickness: Front 17/16" Back 13/16" Mean pitch of stays 10"
Pitch across wide water spaces 14½" Working pressures by rules 192 lbs Girders to Chamber tops: Material Iron Depth and
thickness of girder at centre 8" x 2½" Length as per rule 32½" Distance apart 8 7/8" Number and pitch of stays in each 3 x 8"
Working pressure by rules 185 lbs Superheater or Steam chest, how connected to boiler ✓ 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 ✓

009655-009666-0199

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves *Single spring loaded* No. of Safety Valves *1* Area of each *11.04* Pressure to which they are adjusted *77 lbs* Date of adjustment *4-10-06*

If fitted with easing gear *no* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied :— *Two connecting rod top end bolts & nuts, two connecting rod bottom end bolts & nuts, two main bearing bolts, one set of coupling bolts, one set of pud & bilge pump valves, a quantity of assorted bolts & nuts, one spare propeller, etc.*

The foregoing is a correct description,

James Duncan Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *1905: Dec. 9, 14, 1906: Jan. 9, 24, 31 Feb. 5, 14, 21 Mar. 2, 13, 22 Apr. 28 June 13 Sep. 17 20 26 29 Oct. 4 6*

{ During erection on board vessel - - } _____

Total No. of visits *19* Is the approved plan of main boiler forwarded herewith *no*

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders *24-1-06* Slides *14-2-06* Covers *13-3-06* Pistons *13-3-06* Rods *13-3-06*

Connecting rods *13-3-06* Crank shaft *21-1-06* Thrust shaft *22-3-06* Tunnel shafts *none* Screw shaft *22-3-06* Propeller *22-3-06*

Stern tube *22-3-06* Steam pipes tested *29-9-06* Engine and boiler seatings *17-9-06* Engines holding down bolts *20-9-06*

Completion of pumping arrangements *4-10-06* Boilers fixed *20-9-06* Engines tried under steam *6-10-06*

Main boiler safety valves adjusted *4-10-06* Thickness of adjusting washers *Port valve 7/16" Starb. valve 13/32"*

Material of Crank shaft *Iron* Identification Mark on Do. *673* Material of Thrust shaft *Iron* Identification Mark on Do. *673*

Material of Tunnel shafts *none* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *673*

Material of Steam Pipes *Copper* Test pressure *400 lbs.*

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

The machinery of this vessel has been built under special survey the materials and workmanship are of good description, they have been securely fitted on board, and satisfactorily tried under steam.

It is in my opinion eligible for notation & L. M. C. 10.06 in the Register Book

It is submitted that
this vessel is eligible for
THE RECORD H.L.M.C 10.06 ELEC. LIGHT

The amount of Entry Fee. . . £ *2* : : : When applied for. *15 OCT 1906*

Special £ *18* . *12* : : : *19* : : : *19* : : :

Donkey Boiler Fee £ : : : When received. *18 OCT 1906*

Travelling Expenses (if any) £ : : : *19* : : :

Committee's Minute *Glasgow 15 OCT 1906*

Assigned *+ d.M.C. 10.06*

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping. *James Cairns*

FRI. 19 OCT 1906

MACHINERY CERTIFICATE WRITTEN *19*

(Subject to classification of hull)

Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)