

REPORT ON MACHINERY.

Port of Belfast

MON. 4 DEC 1893

No. in Survey held at Belfast
Book.

Date, first Survey March 29th Last Survey 29th Nov. 1893

(Number of Visits 25)

on the Steel Screw Steamer "Ormiston"

Tons { Gross 3561.89
Net 2306.35
When built 1893

Built at Belfast

By whom built Workman Clark & Co. Ltd.

Engines made at Belfast

By whom made Workman Clark & Co. Ltd.

when made 1893

Boilers made at Belfast

By whom made Workman Clark & Co. Ltd.

when made 1893

Registered Horse Power 320

Owners R. & C. Allan

Port belonging to Glasgow

Net Horse Power as per Section 28 319.3

ENGINES, &c.—

Description of Engines

Triple Expansion

No. of Cylinders 3

Diameter of Cylinders 25; 42; 68 Length of Stroke 48 Revolutions per minute 70 Diameter of Screw shaft as per rule 12.7

Diameter of Tunnel shaft as per rule 12.07 Diameter of Crank shaft journals 13 1/4 Diameter of Crank pin 13 1/4 Size of Crank webs 9 1/4 x 18

Diameter of screw 17-0 Pitch of screw 19-0 No. of blades 4 State whether moveable yes Total surface 80 sq

No. of Feed pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes

No. of Donkey Engines Three Sizes of Pumps Ward & Appleby 9 x 7 x 21 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three 3 1/2" suction 7 Peare & Co 7 x 6 x 6 In Holds, &c. No 1 hold, two 3" No 2 hold, two 3 1/2"

No. of bilge injections 1 sizes 7 3/8" Connected to condenser, or to circulating pump Cir. p. Is 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 yes

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves; smaller ones 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

How are pipes 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 Examined before launching Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from top engine room platform

BOILERS, &c.—

(Letter for record D)

Total Heating Surface of Boilers 4775

No. and Description of Boilers Two single ended

Working Pressure 180 Tested by hydraulic pressure to 360

Date of test 21.10.93 Can each boiler be worked separately yes Area of fire grate in each boiler 57.6 sq No. and Description of safety valves to

each boiler Two. Lunnbull's Area of each valve 9.62" Pressure to which they are adjusted 185 lb Are they fitted

with casing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean diameter of boilers 14' 3"

Length 11' 3" Material of shell plates Steel Thickness 1 1/32 Description of riveting: circum. seams treble riveted long. seams double butt

Diameter of rivet holes in long. seams 1 1/32 Pitch of rivets 9 3/16 Lap of plates or width of butt straps 19 7/8

Percentages of strength of longitudinal joint rivets 89.2 Working pressure of shell by rules 203 Size of manhole in shell 16" x 12"

Size of compensating ring 2' 7" x 2' 3" x 1 1/8" No. and Description of Furnaces in each boiler Three, with Material steel Outside diameter 43 1/4

Length of plain part top 18 3/8" centre to crown 5 7/8" Description of longitudinal joint Adamson Rings No. of strengthening rings four

Working pressure of furnace by the rules 185 Combustion chamber plates: Material steel Thickness: Sides 9/16 Back 9/16 Top 9/16 Bottom 1/16

Length of stays to ditto: Sides 7 3/4 x 7 Back 7 1/2 x 7 7/8 Top 7 1/2 x 7 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays steel Diameter at smallest part 1 3/8" Area supported by each stay 54" Working pressure by rules 207 End plates in steam space:

Material steel Thickness 1 1/8" Pitch of stays 17" x 15" How are stays secured double nuts & washers Working pressure by rules 207 Material of stays steel

Diameter at smallest part 2 1/2" Area supported by each stay 255" Working pressure by rules 180 Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 15/16 Greatest pitch of stays as appr Working pressure of plate by rules 180

Diameter of tubes 2 1/2" Pitch of tubes 3 7/8" x 3 7/8" Material of tube plates steel Thickness: Front 7/8 Back 3/4 Mean pitch of stays 7 1/2

Width across wide water spaces 13 1/2 Working pressures by rules 180 lb Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 8 x 3/4 (two) Length as per rule 2' 3 1/16" Distance apart 7 1/2" Number and pitch of Stays in each 3 at 7"

Working pressure by rules 226 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 ✓

Stays ✓ 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 casing gear ✓

DONKEY BOILER— Description *Single-ended horizontal, two-flue.*
 Made at *Belfast* By whom made *Workman Clark & Co. Ltd* When made *1893* Where fixed *Fore end & stern*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *174* Fire grate area *26* Description of safety valves *Curnbells*
 No. of safety valves *two* Area of each *5.94* Pressure to which they are adjusted *90 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *9' 0"* Length *8' 0"* Material of shell plates *steel* Thickness *9/16*
 Description of riveting long. seams *doub. riv. butt* Diameter of rivet holes *13/16* Whether punched or drilled *drilled* Pitch of rivets *3 3/4*
 Lap of plating *8 1/2 x 7/16* Per centage of strength of joint Rivets *3.3* Thickness of shell plates *5/8 & 9/16* Radius of do. *hollow* No. of Stays to do. *10 at 13"*
 Dia. of stays *1 5/8 effe.* Diameter of furnace Top *33"* Bottom *33"* Length of furnace *5' 9"* Thickness of furnace plates *7/16"* Description of joint *butt* Thickness of furnace crown plates *7/16"* Stayed by *Back 3/4 tubes* Working pressure of shell by rules *95 lb*
 Working pressure of furnace by rules *90 lb* Diameter of uptake *3 1/4"* Thickness of uptake plates *7/16"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *Crank shaft, one length. Propeller shaft. Two propeller blades. Two connecting rod top end, & two bottom end, bolts & nuts. Two main bearing bolts & nuts. Air coupling bolts & nuts. Act feed & helix pump valves. 12 pump ring bolts. Two safety valves & springs. Pair crank pin braces, & piston rod bushes. Rod for air or circulating pump.*
 The foregoing is a correct description, *Two slide valves, spindles, Assorted bolts & nuts (crow etc.)*
 Manufacturer. *PRO WORKMAN, CLARK & CO., LIMITED, Chas. Allan, DIRECTOR*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel is duplicate of that in the sister vessel "Ormidale" reported in September. The engine & boilers have been built under special survey, the boilers in accordance with the approved plans forwarded with the report on the Ormidale. The boilers & main steam pipes were all tested to double the working pressures. The safety valves have been adjusted under steam to blow off at the working pressures.*
With regard to the pumping arrangements, in No 1 hold, the fore well, beyond the double bottom has been filled up with cement & in place of the one 3 1/2" centre suction approved for that hold there are fitted two wing 3" suction.
The vessel is lighted by electricity, & particulars of the installation by W.C. Martin & Co. of Glasgow will be forwarded.
Forging certificate for the shafting is enclosed herewith.

The machinery in my opinion renders the vessel eligible for the record of + LMC 11.93 in the Register Book

It is submitted that this vessel is eligible for THE RECORD + LMC 11.93 -

J.H.B.
4/12/93-

MACHINERY CERTIFICATE
 WRITTEN.

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 3 : 00 :	When applied for,
Special	£ 35 : 19 0 :	30/11/18.93
Donkey Boiler Fee	£ : :	When received
Travelling Expenses (if any) £	: 46 :	5/12/93

A. L. Jones
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 5 DEC 1893

Assigned

+ LMC 11.93



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