

REPORT ON MACHINERY.

Port of Belfast

FRI. MAY 22 1896

Received at London Office

No. in Survey held at Belfast
Reg. Book.

Date, first Survey 22nd July 1895 Last Survey 2nd May 1896

(Number of Visits.....)

on the Steel Ste. Ste. "Langton Grange"

Tons { Gross 5447.93
Net 3844.26

Master C. S. Crichton Built at Belfast By whom built Workman Clark & Co. Ltd. When built 1896

Engines made at Belfast By whom made Workman Clark & Co. Ltd. when made 1896

Boilers made at Belfast By whom made Workman Clark & Co. Ltd. when made 1896

Registered Horse Power 650 Owners Howland Bros & Co. Port belonging to London

Nom. Horse Power as per Section 28 513 *1/2* F.D.

ENGINES, &c.— Description of Engines Triple Expansion No. of Cylinders Three

Diameter of Cylinders 24; 44 1/2; 74 Length of Stroke 54" Revolutions per minute _____ Diameter of Screw shaft as per rule 13.9
as fitted 14 1/2"

Diameter of Tunnel shaft as per rule 13.2 Diameter of Crank shaft journals 14 1/2" Diameter of Crank pin 14 1/2" Size of Crank webs 19 3/4" x 10"
as fitted 13 3/4"

Diameter of screw 18' 0" Pitch of screw 18' 6" No. of blades 4 State whether moveable Yes Total surface 92 sq ft.

No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps Weir's duplex feed 10 x 8 x 2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
Carroll's duplex 6 x 4 1/2 x 6 In Engine Room Three 3 1/2" dia. In Holds, &c. Two 3 1/2" dia. suction in each of

No. 1 2 3 4 holds. No 5 hold (after well) one 3 1/2" suction. Tunnel drain 3"

No. of bilge injections 1 sizes 8" Connected to condenser, or to circulating pump Cr. 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 larger valves, smaller 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 _____

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 forward bilge suction How are they protected strong 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Deck level

OILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 7176 sq. ft.

No. and Description of Boilers Three single-ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 5. 2. 96 Can each boiler be worked separately Yes Area of fire grate in each boiler 56 1/3" No. and Description of safety valves to each boiler Three. Adams patent Area of each valve 8.29" 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 several feet Mean diameter of boilers 14' 9"

Length 11' 6" Material of shell plates Steel Thickness 1 1/32" Description of riveting: circum. seams middle triple; long. seams Double Straps
ends double

Diameter of rivet holes in long. seams 1 15/32" Pitch of rivets 10" x 5" Lap of plates or width of butt straps 21 1/32" x 1 1/16" thick.

Per centages of strength of longitudinal joint 89.6 Working pressure of shell by rules 194.6 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 2' 8" x 2' 4" x 1 1/32" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 45"

Length of plain part top Thickness of plates crown 9/16" Description of longitudinal joint Welded No. of strengthening rings _____
bottom

Working pressure of furnace by the rules 195 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 7 3/4" Back 7 3/4" Top 7 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 60" Working pressure by rules 194 lbs End plates in steam space: _____

Material Steel Thickness 1 1/16" Pitch of stays 16" max How are stays secured doub. nuts & washers Working pressure by rules 208 lbs Material of stays Steel

Diameter at smallest part 2 7/16" Area supported by each stay 22.8" Working pressure by rules 180 Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays As approved Working pressure of plate by rules 180 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 7/8" Material of tube plates Steel Thickness: Front 25/32" Back 3/4" Mean pitch of stays 7 3/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/4" x 1 1/2" Length as per rule 30 1/2" Distance apart 7 3/4" Number and pitch of Stays in each Three at 7 3/4"

Working pressure by rules 236 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 _____

DONKEY BOILER—

Description

No donkey boiler

Made at

By whom made

When made

Where fixed

Working pressure

tested by hydraulic pressure to

No. of Certificate

Fire grate area

Description of safety valves

No. of safety valves

Area of each

Pressure to which they are adjusted

If fitted with easing gear

If steam from main boilers

Enter the donkey boiler

Diameter of donkey boiler

Length

Material of shell plates

Thickness

Description of riveting long seams

Diameter of rivet holes

Whether punched or drilled

Pitch of rivets

Lap of plating

Per centage of strength of joint

Rivets
Plates

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

joint

Thickness of furnace crown plates

Stayed by

Working pressure of shell by rules

Working pressure of furnace by rules

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

SPARE GEAR.

State the articles supplied:—

Propeller shaft. Piece crank shaft. Two propeller blades. Two top end
two bottom end bolts & nuts. Two main bearing bolts & nuts. Two bolts & nuts for eccentric straps. Six coupling bolts.
15 Condenser tubes. 12 junk ring bolts. 6 studs & nuts for propeller blades. 2 feed & 2 Relief pump valves. 2 Cy-
calves & fittings. Feed escape valve & 2 springs. Pair crank pin bushes & cross head bushes. Air or cir. pump or
The foregoing is a correct description,
2 Slide valve spindles. 100 fire bars. Assorted bolts & nuts.

PRO WORKMAN, CLARK & CO., LIMITED.

Manufacturer.

General Remarks

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

Dates of
Survey while
buildingDuring progress of
work in shops -
During erection on
board vessel -
Total No. of visits

July (1895) 22nd Aug 9. 15. Sept 13. 23. 26. Oct 7. 14. 24. Nov 1. 5. 6. 9. 12. 13. 15. 17.
21. 22. 25. 29. Dec 2. 9. 13. 18. Jan 14. Feb 17. 20. Mar 11. 12. 16. 18. 21. 26. April 9. 13.
May 5. 7. 19. 20. Total 21.

These engines & boilers have been constructed & fitted under special survey,
& the boilers & pumping arrangements are in accordance with the approved tracing.
Each separate length of main steam pipe has been tested by water pressure to
double the working pressure. The safety valves are correctly adjusted to the
working pressure.

The electric lighting installation is by Messrs. Lang & Chester Ltd & a report
is being forwarded.

The approved tracing of boilers & pumping arrangements & six forging certificates
are forwarded with this report.

The machinery in my opinion renders the vessel eligible for the notification
+ Lm C 5.96 to be recorded in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD + Lm C. 5.96.

F.D.

J.S.
26.5.96

Certificate (if required) to be sent to

The amount of Entry Fee..

£ 3 : 0 :

When applied for,

Special

£ 45 : 13 :

20th May 1896.

Donkey Boiler Fee

£

When received,

Travelling Expenses (if any) £

:

27th May 1896.

Committee's Minute

TUES. MAY 26 1896

Assigned

+ Lm C 5.96 F.D.

A. L. Jones

MACHINERY CERTIFICATE
WRITTEN.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

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Lloyd's Register
Foundation