

REPORT ON MACHINERY.

No. 5919

Port of

Belfast

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No. in Survey held at
Reg. Book.

Belfast
P. S. "Zent"

Date, first Survey *Oct. 5th 1904* Last Survey *June 13th 1905*
(Number of Visits *5*)

on the

Master *E. H. Jones* Built at *Belfast* By whom built *Workman Clark & Bay L* when built *1905*

Engines made at *Belfast* By whom made *Workman Clark & Bay L* when made *1905*

Boilers made at By whom made when made

Registered Horse Power Owners *Elders & Fyffes (Shipping)* belonging to *Belfast*

Nom. Horse Power as per Section 28 *577* Is Refrigerating Machinery fitted for cargo purposes *Yes* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
Dia. of Cylinders *27"-44"-75"* Length of Stroke *48* Revs. per minute *80* Dia. of Screw shaft as per rule *14.58* as fitted *15.5* Material of screw shaft *Steel*
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 *Yes* 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* If two liners are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *62"*
Dia. of Tunnel shaft as per rule *13.59* as fitted *14.6* Dia. of Crank shaft journals as per rule *14.26* as fitted *14.5* Dia. of Crank pin *14 1/2* Size of Crank web *26 1/2 x 9 1/4* Dia. of thrust shaft under collars *14 1/2* Dia. of screw *16'-9"* Pitch of screw *18'-6"* No. of blades *4* State whether moveable *Yes* Total surface *82 sq ft*
No. of Feed pumps *2* Diameter of ditto *4 1/2* 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 *See other sheet* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *4 - 3 1/2"* In Holds, &c. *4 - 3 1/2" & 1 - 2 1/2"*

No. of bilge injections *1* sizes *9"* Connected to condenser, or to circulating pump *Pump* 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 *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 *Five hold suction* How are they protected *Wood casings*
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 *Before launching* Is it fitted with a watertight door *Yes* worked from *Top platform E. Room*

BOILERS, &c.—(Letter for record *3*) Total Heating Surface of Boilers *10800 sq ft* Is forced draft fitted *No*
No. and Description of Boilers *4 Single End Cylind.* Working Pressure *190 lbs* Tested by hydraulic pressure to *380 lbs*
Date of test *8-4-05* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *78 1/2 sq ft* No. and Description of safety valves to each boiler *2 - Direct Spring* Area of each valve *9.62 sq in* Pressure to which they are adjusted *195 lbs* Are they fitted with easing gear *Yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *14"* Mean dia. of boilers *16'-6"* Length *11'-0"* Material of shell plates *Steel*
Thickness *1 1/8"* Range of tensile strength *28-32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *Lap Dr. Y.* long. seams *Butt Double*
Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *10"* Lap of plates or width of butt straps *22 1/2"*
Per centages of strength of longitudinal joint rivets *94.7* plate *83.7* Working pressure of shell by rules *220 lbs* Size of manhole in shell *16" x 12"*
Size of compensating ring *14"* No. and Description of Furnaces in each boiler *4 - Leighton* Material *Steel* Outside diameter *45 1/4"*
Length of plain part top *6"* bottom *10"* Thickness of plates crown *3 1/4"* bottom *3 1/4"* Description of longitudinal joint *Welded* No. of strengthening rings *5*
Working pressure of furnace by the rules *215 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *1 1/2"* Back *1 1/2"* Top *1 1/2"* Bottom *1"*
Pitch of stays to ditto: Sides *8 1/2 x 7 1/2* Back *8 x 7 1/2* Top *8 x 6 1/2* If stays are fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *190 lbs*
Material of stay *Steel* Diameter at smallest part *1 1/8"* Area supported by stay *61 1/8"* Working pressure by rules *190 lbs* and plates in steam space:
Material *Steel* Thickness *1 1/2"* Pitch of stays *18 x 1 1/2* How are stays secured *Nuts inside* Working pressure by rules *267 lbs* Material of stays *Steel*
Diameter at smallest part *2 1/2 x 3 1/4* supported by stay *288 sq in* Working pressure by rule *251 lbs* Material of Front plates at bottom *Steel*
Thickness *1"* Material of Lower back plate *Steel* Thickness *3/8"* Greatest pitch of stays *13 1/2"* Working pressure of plate by rules *219 lbs*
Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2 x 4 1/2* Material of tube plate *Steel* Thickness: Front *1"* Back *3/2"* Mean pitch of stays *9 x 8 1/2*
Pitch across wide water spaces *14 1/2* Working pressures by rules *190 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 1/2 x 4 x 3* Length as per rule *298* Distance apart *9 x 8* Number and pitch of Stays in each *3 - 6 1/2*
Working pressure by rules *238 lbs* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler worked separately *Yes*
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

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

DONKEY BOILER— No. None Description None

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 can enter the donkey boiler _____

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 _____ 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 _____

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:—

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED,
Manufacturers.

Dates { During progress of work in shops - { Oct. 5, 11, 28, 31, Nov. 2, 3, 4, 7, 10, 14, 18, 24, 29 Dec. 2, 7, 10, 14, 16, 20, 23 1905 Jan. 3, 5, 9, 12, 18, 24
of Survey { During erection on board vessel - { 24, 31, Feb. 3, 6, 9, 14, 17, 21, 24, 28 Mar. 1, 6, 10, 21, 24, 28 Apr. 3, 6, 13, 18, 20, 28 May 4, 9, 14, 16, 20 Jun 1, 4, 11, 18, 25
while building { Total No. of visits 55
Is the approved plan of main boiler forwarded herewith Yes S.S. Pacuare plan
" " " donkey " " " "

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

The machinery of this vessel has been constructed under Special License, and in accordance with the Rules. The workmanship and the materials are of good description, and on trial in Belfast Lough, the machinery worked satisfactorily.

In my opinion, it is eligible for record + L.M.C. 6-05 and Electric Light

A Report on the Electric Light installation, will be forwarded later.

The machinery of this vessel is a duplicate of that fitted in the cutter vessel S.S. Pacuare Belfast Report No. 5906

It is submitted that
this vessel is eligible for
THE RECORD H.L.M.C. 6-05 ELEC. LIGHT.

REF. MCHY.

The amount of Entry Fee. £ 3 : - :
Special £ 48 : 17 :
Donkey Boiler Fee . . . £ : :
Travelling Expenses (if any) £ : :
When applied for, 15-6-1905
When received, 19-6-1905

Committee's Minute

Assigned

FRI, 23 JUN 1905

MACHINERY CERTIFICATE
WRITTEN.

+ L.M.C. 6-05
elec. light

Rpt. 9a.

JUN 20 JUN 1905

Port of Belfast Continuation of Report No. 5919 dated 19th June on the

S.S. Pacuare
Donkey Pumps
Ballast 7' x 9' x 9' 6 up lvs
2 Water Fed 8' x 10 1/2' x 24"
auxiliary Fed 6' x 4 1/2' x 6" "
Fresh Water 4' x 4' x 6" "
General 7' x 5' x 8" "
Refrigerating 7' x 8 1/2' x 8" "

Spare Gear
1 Propeller Shaft
2 Belades
Set - - - - - 2 tube & nuts
1 Pair Crank pin bushes
- - - - - Cross head
Air Pump rod: 2 guards & tubes
- - - - - set valves
2 Life valve spindles
2 Eccentric strap bolts
Set H.P. & M.P. piston rings
2 cylinder escape valves & 2 springs
8 Boiler feed check valves
1 Feed escape valve & 2 springs
2 Safety valve springs
Fan spindle for Centrifugal Pump
Spare gear - - - - - Engine
- - - - - Auxiliary pumps
Breakdown shaft coupling
50 Condenser tubes
24 Boiler
12 Junk ring bolts set? set?
and all gear to am Rules additional

R. J. Beveridge