

REPORT ON MACHINERY.

Port of Belfast

Received at London Office SAT. 20 DEC 1902

No. in Survey held at Belfast
Reg. Book. S.S. Frank
on the

Date, first Survey 25th April Last Survey 10th Dec^r 1902
(Number of Visits 49)

Master Belfast Built at Belfast By whom built Workman Clark & Co Gross 8116
Engines made at Belfast By whom made Workman Clark & Co Net 5284
Boilers made at Belfast By whom made Workman Clark & Co when made 1902
Registered Horse Power ✓ Owners Frank S.S. Coy L^d Port belonging to Liverpool
Nom. Horse Power as per Section 28 831 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Seven Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6
Dia. of Cylinders 23-39 1/2-67 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft 13.67 Lgth. of stern bush 55
Dia. of Tunnel shaft 12.6 Dia. of Crank shaft journals 13.2 Dia. of Crank pin 13.5 Size of Crank webs 9 1/2 x 25 1/2 Dia. of thrust shaft under collars 13 1/2 Dia. of screw 16.6 Pitch of screw 20.0 No. of blades 3 State whether moveable Yes Total surface 66 sq ft.
No. of Feed pumps 2 Diameter of ditto 9 x 12 x 2 Stroke ✓ Can one be overhauled while the other is at work Yes
No. of Bilge pumps 4 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 4 Sizes of Pumps 2 Ballast 9 x 11 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Four - 3 1/2 In Holds, &c. Fourteen 3 1/2 & Two 3

No. of bilge injections 2 sizes 8" Connected to condenser, or to circulating pump Yes 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 in 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 Below
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 Fore hold suction 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
When were stern tube, propeller, screw shaft, and all connections examined in dry dock 4 Is the screw shaft tunnel watertight Stated to be
Is it fitted with a watertight doors Yes worked from Middle Platform Engine Room

BOILERS, &c.— (Letter for record 3) Total Heating Surface of Boilers 14359 sq ft. Is forced draft fitted No
No. and Description of Boilers 3 - Double End. Cylind Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs
Date of test 29-10-02 Can each boiler be worked separately Yes Area of fire grate in each boiler 130 sq ft. No. and Description of safety valves to each boiler 3 - Direct Spring Area of each valve 15'-9" Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork about 5 ft. Mean dia. of boilers 16'-0" Length 18'-0" Material of shell plates Steel
Thickness 1/32 Range of tensile strength 29-33 tons Are they welded or flanged No Descrip. of riveting: cir. seams Lap & Double seams Butt Double
Diameter of rivet holes in long. seams 1/32 Pitch of rivets 10" Lap of plates or width of butt straps 22 1/16"
Per centages of strength of longitudinal joint: rivets 93.4 plate 84.1 Working pressure of shell by rules 232 lbs Size of manhole in shell 16" x 12"
Size of compensating ring McNeil No. and Description of Furnaces in each boiler 8 - Morrison Material Steel Outside diameter 43 1/4"
Length of plain part top 5" bottom 5" Thickness of plates crown 3/8" bottom 3/8" Description of longitudinal joint Weld No. of strengthening rings to any 2
Working pressure of furnace by the rules 232 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back ✓ Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 1/2 x 1/2 Back ✓ Top 1/2 x 1/2 stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 249 lbs
Material of stays Steel Diameter at smallest part 1/8" Area supported by each stay 54 1/8" Working pressure by rules 219 lbs End plates in steam space:
Material Steel Thickness 1/32 Pitch of stays 18 1/2 x 16 How are stays secured W. nuts inside Working pressure by rules 231 lbs Material of stays Steel
Diameter at smallest part 3/16 Area supported by each stay 290 sq Working pressure by rules 249 lbs Material of Front plates at bottom Steel
Thickness 1" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
Diameter of tubes 3/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 1/8" Back 1/16" Mean pitch of stays 9 x 8 1/4"
Pitch across wide water spaces 1/4" Working pressures by rules 304 lbs with 1/2" double Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 1/2 (2 x 2) Length as per rule 40 3/8" Distance apart 8 1/2" Number and pitch of Stays in each 4 - 1/2"
Working pressure by rules 214 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— No. *1100* Description _____
 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:— *Set Connecting rod top end braces; set bottom end braces; air pump rod, bucket, heat valve handle set; centrifugal pump spindle & impeller; 3 crank shaft; propeller shaft; 3 propeller blades; 2 slide valve spindles & bushes; eccentric pulley & strap for H.P. or G.P.; eccentric pulley for L.P. set; piston rings; donkey pump spare gear set; & all parts to run boiler in addition*
 The foregoing is a correct description, *W. H. Bell* Manufacturer.
 FOR WORKMAN, CLARK & CO., LIMITED.

Dates of Survey while building
 During progress of work in shops— *April 25-30, May 8-14, 20, 22, 27, 29, June 5, 10, 12, 17, July 1, 3, 7, Aug 4, 12, 15, 20*
 During erection on board vessel— *25-29, Sept 3, 13, 18, 23, 29, Oct 1, 3, 7, 8, 10, 16, 22, 27, 28, 29, 30, Nov 1, 5, 7, 12, 19, 21, 27*
 Total No. of visits *49*
 Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " "

General Remarks (State quality of workmanship, opinions as to class, &c.)
infot steel
 Material of screw shaft *Hydipressed* 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 ✓
 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 ✓

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The materials used in its construction, and the workmanship throughout are of good description. On trial under steam, the machinery worked satisfactorily.
In my opinion it is eligible to have record + L.M.C. 12-02 in the Register Book.

The engines and boilers are duplicate of those fitted in L.S.S. "Grada" N° 234 in the Register Book

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12. 02. — Dec. light.

R. J. Beveridge
 J.S. C.M.
 22. 12. 02 22. 12. 02

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

The amount of Entry Fee.. £ 3 : - : When applied for,
 Special £ 61 : 11 : 12-12-02
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : 17-12-02

Committee's Minute TUES. 23 DEC 1902

Assigned + L.M.C. 12, 02

MACHINERY CERTIFICATE WRITTEN.



Port of _____
 No. in Reg. Book _____
 Owners _____
 Yard No. _____
 DESCRIPTION _____
 Capacity of _____
 Where _____
 Position of _____
 Positions of _____
 If cut outs a _____
 circuits _____
 If vessel is _____
 Are the cut _____
 Are all cut _____
 are per _____
 Are all suite _____
 Total number _____
 A _____
 B _____
 C _____
 D _____
 E _____
 If are light _____
 Where are _____
 DESCRIPTION _____
 Main cable _____
 Branch cable _____
 Branch cable _____
 Leads to lam _____
 Cargo light _____
 DESCRIPTION _____
 cut _____
 with _____
 soak _____
 Joints in ca _____
 One _____
 + H _____
 Are all the _____
 made i _____
 Are there a _____
 How are th _____
 Un _____

Certificate (if required) to be sent to this office

The Surveyors are requested not to write on or below the space for Committee's Minute.