

REPORT ON MACHINERY.

Port of *Belfast*

Received at London Office *THUR. 12 JUL 1900*

No. in Survey held at *Belfast*
g. Book.

Date, first Survey *26 June 1899* Last Survey *5 July 1900*

(Number of Visits *11*)

on the

S.S. S. Irada

Tons } Gross *8119*
Net *5333*

Master *A. Delaney*

Built at *Belfast*

By whom built *Workman Clark & Coy L^o*

When built *1900*

Engines made at *Belfast*

By whom made *Workman Clark & Coy L^o*

when made *1900*

Boilers made at *"*

By whom made *"*

when made *"*

Registered Horse Power *✓*

Owners *Irada Steamship Coy L^o*

Port belonging to *Liverpool*

Com. Horse Power as per Section 28 *831*

Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Two Screw Triple Expansion*. of Cylinders *6* No. of Cranks *6*
 Diameter of Cylinders *23" - 39½" - 67"* Length of Stroke *48* Revolutions per minute *75* Diameter of Screw shaft *as per rule 13.23*
as fitted 14.0
 Diameter of Tunnel shaft *as per rule 11.97* Diameter of Crank shaft journals *13½"* Diameter of Crank pin *13½"* Size of Crank webs *25" x 9½"*
as fitted 12.75
 Diameter of screws *16" - 6"* Pitch of screws *19" - 0"* No. of blades *each State whether moveable Yes* Total surface *66 sq. ft. each*
 No. of Feed pumps *Two* Diameter of ditto *2" x 9"* Stroke *26"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *Four* 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 by 10" x 11" x 10"* No. and size of Suctions connected to both Bilge and Donkey pumps
General 9" x 6" x 9"
aux. 7" x 5" x 6" In Holds, &c. *Sixteen; - 2 @ 3" and 14 @ 3½"*
 No. Engine Room *Four - 3½"*
 No. of bilge injections *2* sizes *½"* connected to *condensers* circulating pump *Yes* Is a separate donkey suction fitted in Engine room & size *Yes - 3½"*
 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 *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 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* the screw shaft tunnel watertight *Stated to be*
 Is it fitted with a watertight door *Yes* worked from *Middle Platform Engine Room*

BOILERS, &c.— (Letter for record *9*) Total Heating Surface of Boilers *14359 sq. ft.* Is forced draft fitted *No*
 No. and Description of Boilers *3 Double Ended Cylind^r* Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs*
 Date of test *24-4-00* 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 *Three - Direct Spring* Area of each valve *15.9 sq."* Pressure to which they are adjusted *200 lbs* Are they fitted
 with easing gear *Yes* Smallest distance between *boilers* uptakes and *bunkers* *about 5 ft.* Mean diameter of boilers *16" - 0"*
 Length *8' - 0"* Material of shell plates *Steel* Thickness *1½"* Description of riveting: circum. seams *Lap* Double *butt* seams *Butt* Seams
 Diameter of rivet holes in long. seams *1½"* Pitch of rivets *10"* Lap of plates on width of butt straps *22%*
 Per centages of strength of longitudinal joint rivets *93.4* Working pressure of shell by rules *232 lbs* Size of manhole in shell *16" x 12"*
 plate *84.1*
 Size of compensating ring *McNeill* No. and Description of Furnaces in each boiler *8 - Morrison's* Material *Steel* Outside diameter *45½"*
 Length of plain part *top* Thickness of plates *bottom* *3½"* Description of longitudinal joint *Weld* No. of strengthening rings *27 on B.C.*
 Working pressure of furnace by the rules *266 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *5"* Back *✓* Top *5"* Bottom *3"*
 Pitch of stays to ditto: Sides *4½" x 4½"* Back *✓* Top *8½" x 4½"* If stays are fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *249 lbs*
 Material of stays *Steel* Diameter at smallest part *1½"* Area supported by each stay *54½ sq."* Working pressure by rules *219 lbs* End plates in steam space:
 Material *Steel* Thickness *1½"* Pitch of stays *18½" x 16"* How are stays secured *Nuts & Washers* Working pressure by rules *231 lbs* Material of stays *Steel*
 Diameter at smallest part *3½"* 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 *3½"* Pitch of tubes *4½" x 4½"* Material of tube plates *Steel* Thickness: Front *5"* Back *13"* Mean pitch of stays *9" x 8½"*
 Pitch across wide water spaces *14½"* Working pressures by rules *304 lbs* *✓* Grinders *✓* Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *6½" (¾" x 2)* Length as per rule *42"* Distance apart *8½"* Number and pitch of Stays in each *4 - 7½"*
 Working pressure by rules *206 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 *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 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 _____ 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:— *One set connecting rod top sub bearings: one set bottom sub bearings: one pump rod & bucket, also head valve, seat & guards, with 6 valves & 2 centrifugal spindle & pumpeller: 3 cast iron propeller blades: 2 valves & spindles & bushes H.P. & M.P. & P. Engines: One two strap pulley complete for H.P. or M.P.: one two pulley for 2 shafts: rods & bushings for all donkey pumps. Set, as all gear to our requirements extra.*
 The foregoing is a correct description, *Sets piston rings each piston: 3 crank shafts: prop shaft: rods & bushings for all donkey pumps. Set, as all gear to our requirements extra.*
 _____ Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1899 June 26, 29, July 3, 26, Aug 4, 7, 18, 25, 31 Sept 5, 26, 30 Oct 4, 16, 17, 18, 24, 27 Nov 2, 5, 12, 14, 16, 21, 28 Dec, 1, 5, 13, 19, 1900 Jan 9, 14, 22, 26, 29 Feb, 12, 15, 23, May 1, 13, 15, 22, 26, 28, 29 Apr, 4, 6, 20, 24, 27, 28 May 1, 3, 11, 14, 18, 22, 24, 29 June 14, 16, 18, 19, 20, 23, 25, 25, 26, 28 July 4, 11*
 During erection on board vessel —
 Total No. of visits *41*

General Remarks (State quality of workmanship, opinions as to class, &c.)
ENGINES—Length of stern bush *5 5/8"* Diameter of crank shaft journals *1 3/8"* as per rule *1 3/8"* Diameter of thrust shaft under collars *1 3/8"*
BOILERS—Range of tensile strength *29-35* Are they welded or flanged *No* **DONKEY BOILERS**—No. *2* Range of tensile strength *✓*
 Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *✓*

The machinery of this vessel has been examined under Special Survey, and is of good material and workmanship. It has been securely fitted on board, and on trial it worked satisfactorily. In my opinion it is eligible to have record + L.M.C. 7-1900 "Electric Light" in the Register Book.

An electric light installation by W. H. Allen & Sons has been put in. A Report will be forwarded later.

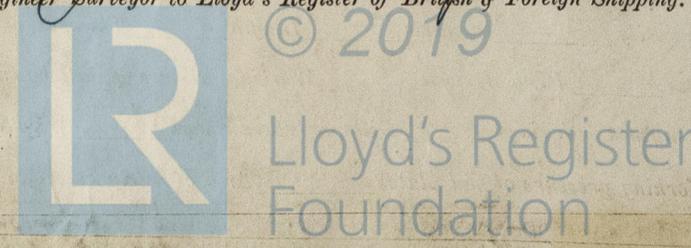
It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4.00. Electric Light

W.H.
 12.7.00
W.H.
 12.7.00

The amount of Entry Fee... £ *13* : - :
 Special... £ *61* : 11 :
 Donkey Boiler Fee... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *9-7-1900*
 When received, *18/7/00*

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

Committee's Minute **FRI. 13 JUL 1900**
 Assigned *+ 2 mcy. 00*
 MACHINERY CERTIFICATE WRITTEN.



Certificate (if required) to be sent to this Office