

REPORT ON MACHINERY.

Port of Belfast Received at London Office FRI. 4 NOV 1904
 Survey held at Belfast Date, first Survey 23rd March Last Survey 29th Oct 1904
 on the S.S. Star of Scotland (Number of Visits 50) Gross 6229
M. Hart Built at Belfast By whom built Workman Clark & Co Net 4000
 made at Belfast By whom made Workman Clark & Co when made 1904
 made at Belfast By whom made Workman Clark & Co when made 1904
 Horse Power ✓ Owners The Star Line Limited Port belonging to Belfast
 Is Refrigerating Machinery fitted Yes Is Electric Light fitted Yes

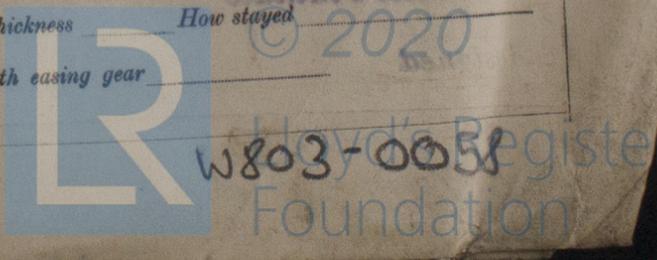
ES, &c.—Description of Engines Single Screw Triple Expansion Cylinders 3 No. of Cranks 3
 Length of Stroke 54 Revs. per minute 62 Dia. of Screw shaft as per rule 16.25 Lgth. of stern bush 68
 Dia. of Crank shaft journals as per rule 15.25 Dia. of Crank pin 10.5 Dia. of Crank webs 29.5 x 10.5 of thrust shaft under
 Dia. of screw 19.9 Pitch of screw 20.0 No. of blades 4 State whether moveable Yes Total surface 110 sq. ft.
 Diameter of ditto 5 Stroke 27 Can one be overhauled while the other is at work Yes
 Diameter of ditto 6 Stroke 27 Can one be overhauled while the other is at work Yes
 Sizes of Pumps 10.5 x 8 x 2 No. and size of Suctions connected to both Bilge and Donkey pumps
8 x 10 x 10
4 x 4 x 5 Stools, &c. 8 - 32 + 1 - 22

Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes - 3"
 Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None
 Are they Valves or Cocks Both
 Are the discharge pipes above or below the deep water line Below
 Are the blow off cocks fitted with a spigot and brass covering plate Yes
 How are they protected Wood Casings
 Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None
 Are they Valves or Cocks Both
 Are the discharge pipes above or below the deep water line Below
 Are the blow off cocks fitted with a spigot and brass covering plate Yes
 How are they protected Wood Casings

RS, &c.— (Letter for record S) Total Heating Surface of Boilers 4849 sq. ft. Is forced draft fitted Yes - Hydraulic
 Description of Boilers 4 - Single End, Cylindrical Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs.
 Area of fire grate in each boiler 48.5 sq. ft. and Description of safety valves to
 Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes
 Mean dia. of boilers 13.3 Length 11.6 Material of shell plates Steel
 Range of tensile strength 28.32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap Rivets Butts Butt Rivets
 Pitch of rivets 9.76 Lap of plates or width of butt straps 20.5
 Working pressure of shell by rules 228 lbs. Size of manhole in shell 16 x 12
 No. and Description of Furnaces in each boiler 3 - Morrison Material Steel Outside diameter 4 1/2
 Thickness of plates 3.37 Description of longitudinal joint Roll No. of strengthening rings ✓
 Thickness: Sides 3/4 Back 5/8 Top 3/4 Bottom 7/8
 Working pressure by rules 211 lbs.
 Diameter at smallest part 1 1/8 Area supported by each stay 64 sq. in. Working pressure by rules 203 lbs. and plates in steam space:
 Working pressure by rules 204 lbs. Material of stays Steel
 Working pressure by rules 224 lbs. Material of Front plates at bottom Steel
 Working pressure of plate by rules 216 lbs.
 Thickness: Front 1 Back 1 1/8 Mean pitch of stays 7 1/2 x 7 1/2

Working pressures by rules 210 lbs. Girders to Chamber tops: Material Steel Depth and
 Distance apart 7 1/2 x 6 1/2 Number and pitch of Stays in each 3 - 6 1/2
 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet
 Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 End plates: Thickness How stayed
 Area of safety valves to superheater Are they fitted with easing gear

Report 10/10/04



DONKEY BOILER - No. *None* Description _____ When made _____ Where fixed _____
 Made at _____ By whom made _____ Fire grate area _____ Description of safety valves _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ If fitted with easing gear _____ If steam from main _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ Thickness _____ Range _____
 enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range _____
 strength _____ Descrip. of riveting long. seams _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to _____
 Lap of plating _____ Per centage of strength of joint _____ Plates _____ Thickness of furnace plates _____
 Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Working pressure of shell by ru _____
 joint _____ Thickness of furnace crown plates _____ Stayed by _____ Thickness of uptake plates _____ Thickness of water tubes _____
 Working pressure of furnace by rules _____ Diameter of uptake _____

SPARE GEAR. State the articles supplied: *2 Propeller blades; pair crank pin bushes; pair top end bushes; 2 slide valve spindles; air pump rod; set rings & springs H.P.; set H.P. piston valve rings; 1 break-down Couplings; 1 fan spindle for Centrifugal Condenser females. boiler tubes set and all gear to Lloyd's Rules set.*

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

W. W. Bell
 Dates of Survey while building: During progress of work in shops - *1904, March 23, 25, 30 April 7, 13, 15, 19, 20-26, May 3, 5, 10, 12, 16, 18, 24*
 During erection on board vessel - *June 1, 6, 9, 10, 20, 24, 28, July 20, 22, 28, Aug 5, 6, 10, 16, Sept 3, 29, 1904*
 Total No. of visits *50*
 Is the approved plan of main boiler forwarded herewith _____
 " " " donkey " " "

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

Material of screw shaft *Soft 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
 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 non-corrosive
 If two liners are fitted, is the shaft lapped or protected between the liners *U*

The machinery of this vessel, has been constructed in accordance with the Rules. The materials, and the workmanship, are of good description throughout, and on trial under steam, in Belfast Lough the machinery throughout, worked satisfactorily. In my opinion, it is eligible to have record + L.M.C. 10 "Forced Draft" & Electric Light. Reports on the Re-energizing of Electric Light installation will be forwarded later.

It is submitted that this vessel is eligible for THE RECORD **L.M.C. 10.04 F.D. ELEC. LIGHT. REF. MCHY.**

Pms.
4.11.04

The amount of Entry Fee... £ 3 : - :
 Special ... £ 48 : 19 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *31-10-04*
 When received, *5-11-04*

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

Committee's Minute
 Assigned

TUES. 29 NOV 1904

MACHINERY CERTIFICATE WRITTEN. 2020
 TUES. 6 DEC 1904



Lloyd's Register Foundation

This office

Certificate (if required) to be sent to Committee's Minute.

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