4. No. 5555

REPORT ON MACHINERY.

Port of Belfast

...o. in Survey held at Belfast Date, first Survey 12th Augt 1902 Last Survey 25th Febr 1903 Received at London Office ... 19

Book. (Number of Visits 45)

on the S.S. "Wayfarer" Gross 9599

...er D. A. Wood Built at Belfast By whom built Workman Clark & Co Ld Ton Net 6221 When built 1903

...nes made at Belfast By whom made Workman Clark & Co Ld when made 1903

...rs made at " By whom made when made

...tered Horse Power Owners Charente Steam Ship Co Ld Port belonging to Liverpool

Horse Power as per Section 28 751 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

...INES, &c.—Description of Engines Twin Screw. Triple Expansion No. of Cylinders 6 No. of Cranks 6

...of Cylinders 23"-38½"-66" Length of Stroke 48" Revs. per minute 72 Dia. of Screw shaft as per rule 13.45 as fitted 14.5 Lgth. of stern bush 65¾

...f Tunnel shaft as per rule 12.21 as fitted 13.0 Dia. of Crank shaft journals as per rule 12.82 as fitted 13.5 Dia. of Crank pin 13½ Size of Crank webs 25¾ × 9¾ Dia. of thrust shaft under

...s 13½ Dia. of screws 16'-0" Pitch of screws 19'-0" No. of blades 4 each State whether moveable Yes Total surface 76 sq ft

...f Feed pumps 1 each Diameter of ditto 5½ Stroke 24" Can one be overhauled while the other is at work Yes

...Bilge pumps 1 each Diameter of ditto 6" Stroke 24" Can one be overhauled while the other is at work Yes

...Donkey Engines 6 Sizes of Pumps 2 Feeds 12 × 9 × 24; 2 Ballast 10 × 10 × 10 Duplex; 1 General 10 × 4½ × 10; 1 Boiler Feed 5¼ × 3 × 5 No. and size of Suctions connected to both Bilge and Donkey pumps

...gine Room Four - 3½" In Holds, &c. Fourteen - 3½, & Two - 3"

...bilge injections 2 sizes 7½" Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size Yes - 3½"

...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

...connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

...ey 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 & Below

...y 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

...pipes are carried through the bunkers Forehold suctions How are they protected Wood casings

...pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

...e bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes

...were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launching Is the screw shaft tunnel watertight Stated to be

...tted with a watertight door Yes worked from Top platform Engine Room

...ERS, &c.— (Letter for record S) Total Heating Surface of Boilers 12779 Is forced draft fitted No

...d Description of Boilers Two Double Ended Cylindrical. Steel. Two Single Ended Cylind. Steel Working Pressure 185 lbs Tested by hydraulic pressure to 370 lbs

...test 24-12-02 Can each boiler be worked separately Yes Area of fire grate in each boiler 126 sq ft / 63 sq ft No. and Description of safety valves to

...oiler 2 / 2 Direct Spring Area of each valve 12.56 / 7.07 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

...distance between boilers ~~or uptakes~~ and bunkers ~~or woodwork~~ About 25" Mean dia. of boilers 15'-9" / 15'-9" Length 17'-6" / 10'-6" Material of shell plates Steel

...s 1⅜" Range of tensile strength 28-32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap Dr Treble Long. seams Butt Treble

...r of rivet holes in long. seams 1⅜" Pitch of rivets 9 31/32" ~~Lap of plates or~~ width of butt straps 21 3/16"

...tages of strength of longitudinal joint rivets 87.8 plate 84.9 Working pressure of shell by rules 215 lbs Size of manhole in shell 16" × 12"

...compensating ring McNeils No. and Description of Furnaces in each boiler 3 / 3 - Morison Material Steel Outside diameter 48½"

...of plain part top 1 bottom 6" Thickness of plates crown 41/64 bottom 41/64 Description of longitudinal joint Weld No. of strengthening rings None

...pressure of furnace by the rules 215 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32 / 9/16 Back 5/8 / 21/32 Top 43/64 / 9/16 Bottom 1"

...stays to ditto: Sides 8" × 7¼" / 8" × 6½" Back 8¼" × 8¼" / 8½" × 8½" Top 8½" × 7¼" / 8" × 6¾" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 190 lbs / 194

...l of stays Steel Diameter at smallest part 1⅝ / 1 21/32 Area supported by ~~each~~ stay 63½ / 72¼" Working pressure by rules 208 lbs / 193

...l Steel Thickness 1 1/32 / 15/16 Pitch of stays 19¾ × 16 & 19 × 16 / 19½ × 17 How are stays secured D. Nuts & Washers Working pressure by rules 234 lbs / 206 End plates in steam space: Material of stays Steel

...r at smallest part 3½ / 3¼ Area supported by ~~each~~ stay 316 / 334 Working pressure by rules 227 lbs / 216 Material of Front plates at bottom Steel

...s 1" Material of Lower back plate Steel Thickness ¾" / 11/16 Greatest pitch of stays 14½" Working pressure of plate by rules outside & W. Wall 187 lbs

...of tubes 3¼" Pitch of tubes 4⅝ × 4⅝ Material of tube plates Steel Thickness: Front 13/16 Back 27/32 Mean pitch of stays 9¼ × 9¼

...across wide water spaces 14½" Working pressures by rules 222 Assumed 13/16 Girders to Chamber tops: Material Steel Depth and

...of girder at centre 12 × (3/4 × 2) / 8¾ × (3/4 × 2) Length as per rule 40⅞ / 28½ Distance apart 8¼ / 8¼ Number and pitch of Stays in each 4 - 7½ / 3 - 6¾

...pressure by rules 209 lbs / 214 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

...y Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

...Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

...ed with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

...pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

DONKEY BOILER— No. One Description Blakes Patent Vertical

Made at Middlesbro' By whom made Richardson Westgarth & Co Ltd When made 10-02 Where fixed Main Deck

Working pressure 100 lbs Tested by hydraulic pressure to 200 lbs. of Certificate 2858 Fire grate area 20 sq ft Description of safety valves Direct Spring

No. of safety valves 2 Area of each 4.9 sq in Pressure to which they are adjusted 100 lbs If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 7'-8" Length 14'-0" Material of shell plates Steel Thickness 9/16" Range of tensile strength 27-32 Descrip. of riveting long. seams D.R. Lap Dia. of rivet holes 15/16" Whether punched or drilled Drilled Pitch of rivets 3"

Lap of plating 4 5/8" Per centage of strength of joint Rivets 69.5 Plates 68.7 Thickness of shell crown plates 9/16" Radius of do Flat No. of Stays to do. —

Dia. of stays. — Diameter of furnace Top 33" Bottom 67" Length of furnace 69" Thickness of furnace plates 11/16" Description of joint S. Rivd Lap Thickness of ~~furnace crown~~ Comb.n Chen.r plates 7/8 11/16" Stayed by 2 Gussets & 1 Girder with 2 Stays Working pressure of shell by rules 111 lbs

Working pressure of furnace by rules 106 lbs Diameter of ~~uptake~~ tubes 22" Thickness of ~~uptake~~ plates 5/8 - 11/32" Thickness of ~~water~~ Stay tubes 5/16"

SPARE GEAR. State the articles supplied :— 3 Length Crank Shafts: 1 Propeller Shaft: 1 Propr boss: 2 Manr Bronze blades: 1 Shaft Couplings for repairs: sets top & bottom end braces: Air Pump bucket, rod & valves: Circulating Pump impeller: Slide valve spindle: H.P. eccentric sheave: sets packing for H.P. & M.P. pistons: Condenser & boiler tubes: Pump valves &c and all gear to Lloyd's Rules additional

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

Dates of Survey while building — During progress of work in shops— 12th July 1902, 15-25 Aug. 3, 13, 16, 23, 29 Sept. 1, 8, 7, 10, 14, 16, 22, 28, 30 Oct.r
During erection on board vessel — Novr 3, 6, 10, 17, 20, 24, 27, 28, Decr 1, 3, 5, 9, 16, 19, 24, 1903, Jany 7, 9, 12, 15, 22, 27 Febr 2, 4, 6, 12, 16, 19
Total No. of visits 45

Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " " No

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

Material of screw shaft Lyd. Forged Ingot 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 water and non-corrosive — If two liners are fitted, is the shaft lapped or protected between the liners —

The engines and boilers of this vessel have been constructed under Special Survey, and in accordance with the Rules. The material and workmanship throughout is of good description, and on trial under Steam in Belfast Lough the machinery worked satisfactorily.

The accumulation test on the main boiler safety valves showed that while they were efficient at the ordinary working pressure of 185 lbs. the accumulation was rather higher than allowed by our Rules. As the vessel had to proceed direct to New Orleans it has been arranged by the Builders and Mr. Cadman, the Superintendent Engineer, to have the valves altered, on the vessels return to Liverpool, in two months time.

I am therefore of opinion that this vessel is eligible to be classed ✠ L.M.C. 2-03, subject to the main boiler safety valves being altered to the satisfaction of our Surveyors, on return of the vessel, in two months time.

(The Surveyors are required not to write on or below the space for Committee's Minute.)
Certificate (if required) to be sent to

The amount of Entry Fee..	£ 3 - :	When applied for,	
Special	£ 57-11- :	23-2-1903	
Donkey Boiler Fee	£ : :	When received,	
Travelling Expenses (if any)	£ : :	4.3.03	

5/3/03 R. F. Rowells
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. 27 FEB 1903

Assigned + LMC 2,03 subject

FRI. 8 MAY 1903

Rpt. to Liv. 30/4/03.

MACHINERY CERTIFICATE
WRITTEN