

REPORT ON MACHINERY.

FRI. 19 FEB 1904

Port of Belfast

Received at London Office _____ 19

No. in Survey held at Belfast
Reg. Book.

Date, first Survey 24 July 1903 Last Survey 20 Feb. 1904

(Number of Visits 60)

on the

S.S. Mataua

Tons { Gross 6488
Net 4178

Master J. Stuart Built at Belfast By whom built Wotman Clark & Co. When built 1904

Engines made at Belfast By whom made Wotman Clark & Co. when made 1904

Boilers made at _____ By whom made _____ when made _____

Registered Horse Power _____ Owners Chas. Seville & Abner Coyne belonging to Southampton

Nom. Horse Power as per Section 28 800 Is Refrigerating Machinery fitted Yes Is Electric Light fitted Yes

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

Dia. of Cylinders 22"-37"-63" Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 13.7 as fitted 14.5 Lgth. of stern bush 58"

Dia. of Tunnel shaft as per rule 12.3 as fitted 13.25 Dia. of Crank shaft journals as per rule 12.9 as fitted 13.75 Dia. of Crank pin 13.7 Size of Crank web 24.25 x 9.25 Dia. of thrust shaft under collars 14 Dia. of screws 16"-3" Pitch of screw 20"-0" No. of blades 3 State whether moveable Yes Total surface 66 3/4 sq. ft.

No. of Feed pumps 1 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 7 Sizes of Pumps Main 9 x 12 x 24 Double No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four 3 1/2"

No. of bilge injections 2 sizes 8" Connected to condensers or circulating pump 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 on Engine room bulkheads always accessible No

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 For hold sections 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 Before launching Is the screw shaft tunnel watertight Stated to be

Is it fitted with a watertight door Yes worked from Upper deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 14386 sq. ft. Is forced draft fitted No

No. and Description of Boilers 2 Double End Cylind. Working Pressure 205 Tested by hydraulic pressure to 410 lbs

Date of test 27-12-03 Can each boiler be worked separately Yes Area of fire grate in each boiler 220 sq. ft. No. and Description of safety valves to each boiler 2 Direct Spring Area of each valve 7.57 sq. in. Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers on woodwork about 18" Mean dia. of boilers 15'-9" Length 18'-9" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 29-33 Are they welded or flanged No Descrip. of riveting: cir. seams Lap & Subm. seams Butt Double

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10" Lap of plates on width of butt straps 22 1/4"

Per centages of strength of longitudinal joint rivets 94.7 Working pressure of shell by rules 237 lbs Size of manhole in shell 16" x 12"

Size of compensating ring No No. and Description of Furnaces in each boiler 3 - Morrison's Material Steel Outside diameter 50 1/2"

Length of plain part top 4" bottom 9" Thickness of plates crown 3 3/4" bottom 3 1/4" Description of longitudinal joint Weld No. of strengthening rings 8

Working pressure of furnace by the rules 250 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back 3 1/2" Top 3 1/2" Bottom 1 1/2"

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8" x 7 1/2" Top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 230 lbs

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 63 1/2" Working pressure by rules 248 lbs End plates in steam space: Material Steel Thickness 1 1/4" Pitch of stays 18 1/2" x 16" How are stays secured Nuts & Washers Working pressure by rules 294 lbs Material of stays Steel

Diameter at smallest part 3 1/2" Area supported by each stay 296 sq. in. Working pressure by rules 244 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 14" Working pressure of plate by rules 265 lbs

Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plate Steel Thickness: Front 3 1/2" Back 3 1/2" Mean pitch of stays 8 1/2" x 8 1/2"

Pitch across wide water spaces 14" Working pressures by rules 300 lbs with 27 double Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2" x 8 1/2" x 2" Length as per rule 52 1/2" Distance apart 8 1/2" Number and pitch of Stays in each 6 - 7 1/2"

Working pressure by rules 276 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes

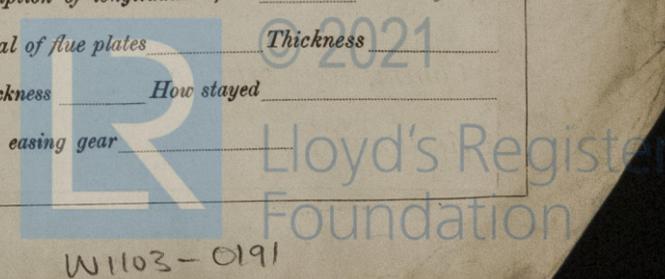
Diameter 2 1/4" Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

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 for

Is a Report also sent on the Hull of the ship?



DONKEY BOILER— *No. One* 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: *Shaft & Shaft: 1 Propeller shaft: 2 Bronze Propeller blades: 3 Crank Shaft: Crosshead brass: air pump bucket Rod, & nuts, air pump head valve: slide valve & spindle: piston packing: ect? and all gear to Lloyds Rules ectra.*

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

Dates of Survey while building
 During progress of work in shops: *1913-24 July 29, Aug 9, 11, 14, 17, 21, 27, 31, Sept 2, 9, 16, 24, 28, 30, Oct 7, 9, 13, 16*
 During erection on board vessel: *27 Nov 21, 24, 29, 30, Dec 1, 14, 17, 21, 22, 1904 Jan 4, 5, 7*
 Total No. of visits: *up to 20 Feb 30* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " "

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

Material of screw shaft *Iron* 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 workmanship and the material are of good description throughout, and on trial under steam, in Belfast Lough, the machinery worked satisfactorily.

In my opinion, it is eligible for record + L.M.C. 2-04 Electric Light + Refrigerating Machinery.
Reports on the Electric Light + Refrigerating Machinery, will be forwarded later

It is submitted that this vessel is eligible for THE RECORD **L.M.C. 2.04 ELEC: LIGHT. REF. MCHY.**

R.S. 19.2.04

The amount of Entry Fee.. £ *3* : - :
 Special £ *60* . 0 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *12-2-04*
 When received, *19-2-04*

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

Committee's Minute **TUES. 23 FEB 1904**
 Assigned *+ L.M.C. 2,04*



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