

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*When built *1904*Master *J. Stuart*Built at *Belfast*By whom built *W. & A. Clark & Co.*Engines made at *Belfast*By whom made *W. & A. Clark & Co.*when made *1904*

Boilers made at

By whom made

when made

Registered Horse Power *800*Owners *Chas. Savill & Albion Co.*Port 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"-763* 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 *13.25*as fitted *13.25*

Dia. of Crank shaft journals

as per rule *12.9*as fitted *13.75*Dia. of Crank pin *13.75*Size of Crank webs *24" x 9"*

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 1/2 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

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *Four 8 1/2"**Main 9" x 12" x 24" Double**2 Donkey 9" x 12" x 24" Double**Ballast 10" x 10" x 12" Double**Waste 8" x 10" x 10" Double**Water 4 1/2" x 5" x 5" Single**Sanitary 6" x 5 1/2" x 8" Single*No. of bilge injections *2* sizes *8"*Connected to *condenser 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 it fitted with a watertight door *Yes*

BOILERS, &c.—

(Letter for record *S*)Total Heating Surface of Boilers *14386 sq. ft.*Is forced draft fitted *Yes*No. and Description of Boilers *2 Double End Cylind.*Working Pressure *205*Tested by hydraulic pressure to *410 lbs*Date of test *23-12-03*Can each boiler be worked separately *Yes*Area of fire grate in each boiler *End 608*

No. and Description of safety valves to

each boiler *2 Direct Spring*Area of each valve *7.56 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"*Thickness *1 1/8"*Range of tensile strength *29-33*Are they welded or flanged *No*Descrip. of riveting: cir. seams *Lap & Subtle*seams *Butt & Subtle*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. 10*No. and Description of Furnaces in each boiler *3 - Morrison's*Material *Steel*Outside diameter *50 1/2"*Length of plain part *top 4"*Thickness of plates *bottom 3 3/4"*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 *No*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*Material of stays *Steel*Thickness *1 1/4"*Pitch of stays *18 1/2" x 16"*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 2 1/2" double*Girders to Chamber tops: Material *Steel*thickness of girder at centre *8 1/2" x 8 1/2" x 2"*Length as per rule *12 1/2"*Distance apart *8 1/2"*Number and pitch of Stays in each *9 - 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

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

Lloyd's Register

Foundation

W1103-0191

DONKEY BOILER— *None* 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:—

Thru & Shaft: 1 Propeller shaft: 2 Bronze Propeller blades: 3 Crank Shaft: Crosshead: Piston: Air pump: Bucket, Rod, & nuts, air pump head valve: slide valve & spindle: piston packing: ect? and all gear to Lloyd's Rules extra.

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 2. 4. 9. 13. 17. 17. 23. 26. 30 Dec 3. 7. 12. 14. 17. 21. 22. 1904 Jan 4. 5. 7
 Total No. of visits *80 up to 20 Feb* Is the approved plan of main boiler forwarded herewith *Yes*

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 materials 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

IL.M.C. 2.04 ELEC: LIGHT.
REF. MCHY.

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

Committee's Minute

TUES. 23 FEB 1904

Assigned

+ L.M.C. 2.04

MACHINERY CERTIFICATE
WRITTEN.



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Foundation