

REPORT ON MACHINERY.

No. 2853

Site of writing Report *Belfast* When handed in at Local Office

19

Port of *Belfast*

Received at London Office

MON SEP 10 1917.

No. in Survey held at *Belfast*
Reg. Book.Date, First Survey *4 March 1915*Last Survey *29 Aug 1917*(Number of Visits *162*)Gross *10,835*Net *6,865*Master *S.S. Mahia* Built at *Belfast* By whom built *Wickman Clark & Coy L* Tons *10,835*
When built *1917*Engines made at *Belfast* By whom made *-* when made *-*Boilers made at *-* By whom made *-* when made *-*Registered Horse Power *1006 997* Owners *Shaw Savill & Albion Coy L* Port belonging to *Southampton*Nom. Horse Power as per Section 28 *1006 997* Is Refrigerating Machinery fitted for cargo purposes *Yes* Is Electric Light fitted *Yes*MACHINERY, &c.—Description of Engines *Twin Screw Quadruple Expans.* of Cylinders *8* No. of Cranks *8*No. of Cylinders *22 - 3 1/2 - 4 1/2 - 6 1/2* Length of Stroke *48"* Revs. per minute *138 1/2* Dia. of Screw shaft *15 1/2* as per rule *13 1/2* as fitted *15 1/2* Material of *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 tightthe propeller boss *Yes* If the liner is in more than one length are the joints burned *Yes* If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twoliners are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *61"*Dia. of Tunnel shaft *12 1/2* as per rule *12 1/2* as fitted *12 1/2* Dia. of Crank shaft journals *12 1/2* as per rule *12 1/2* as fitted *12 1/2* Dia. of Crank pin *13 1/2* Size of Crank webs *19 1/2 x 9 1/2* Dia. of thrust shaft undercollars *13 1/2* Dia. of screw *17 - 0* Pitch of Screw *17 - 9* No. of Blades *3* State whether moveable *Yes* Total surface *85 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 *-* Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *See separate sheet* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *6 - 3 1/2" & 1 - 2 1/2"* In Holds, &c. *10 - 3 1/2" & 4 - 2 1/2"*No. of Bilge Injections *2* sizes *10* Connected to condenser, or to circulating pump *Yes* Are the roses in Engine room always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*Are all the bilge suction pipes fitted with roses *Yes* Are the valves or cocks *Both*Are all connections with the sea direct on the skin of the ship *Yes* 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 *Both*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*Dates of examination of completion of fitting of Sea Connections *26-8-16* of Stern Tube *17-1-17* Screw shaft and Propeller *17-1-17*Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *E. Room cylinder platform*BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Beverlymore & Coy L* *2 DB & 2 SB*Total Heating Surface of Boilers *10,894 sq ft* Forced Draft fitted *Yes* No. and Description of Boilers *2 Double End Cylind.*Working Pressure *220 lbs* Tested by hydraulic pressure to *440 lbs* Date of test *31-1-17* No. of Certificate *499*Can each boiler be worked separately *Yes* Area of fire grate in each boiler *118 1/2 sq ft* No. and Description of Safety Valves toeach boiler *3 - Direct Spring* of each valve *11 1/2* Pressure to which they are adjusted *225 lbs* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *15"* Mean dia. of boilers *41 - 7 1/2* Length *21 - 6* Material of shell plates *Steel*Thickness *3/4"* Range of tensile strength *28 - 32 tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seam *Lap & V.*Long. seam *Butt. & V.* Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10 1/2"* Lap of plates or width of butt straps *21 1/2"*Per centages of strength of longitudinal joint *87.4* Working pressure of shell by rules *223 lbs* Size of manhole in shell *16" x 12"*Size of compensating ring *McNeil* No. and Description of Furnaces in each boiler *6 - Morrison* Material *Steel* Outside diameter *47 1/2"*Length of plain part *2"* Thickness of plates *3/4"* Description of longitudinal joint *Weld* No. of strengthening rings *1*Working pressure of furnace by the rules *232 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/4"* Back *1"* Top *3/4"* Bottom *1"*Pitch of stays to ditto: Sides *8 1/2 x 8* Back *8 1/2 x 7* Top *8 1/2 x 7* If stays are fitted with nuts or riveted heads *Nuts incite* Working pressure by rules *225 lbs*Material of stay *Steel* Diameter at smallest part *2"* Area supported by each stay *67 sq in* Working pressure by rules *275 lbs* Material of stays *Steel*Material *Steel* Thickness *1 1/2"* Pitch of stays *16 1/2 x 28* How are stays secured *Nuts & washers* Working pressure by rules *220 lbs* Material of stays *Steel*Diameter at smallest part *8 1/2"* Area supported by each stay *330 sq in* Working pressure by rules *267 lbs* Material of Front plates at bottom *Steel*Thickness *1 1/2"* Material of Lower back plate *Steel* Thickness *1 1/2"* Greatest pitch of stays *1 1/2"* Working pressure of plate by rules *224 lbs*Diameter of tubes *2 1/2"* Pitch of tubes *3 1/2" x 3 1/2"* Material of tube plates *Steel* Thickness: Front *1 1/2"* Back *1 1/2"* Mean pitch of stays *1 1/2" x 7 1/2"*Pitch across wide water spaces *1 1/2"* Working pressures by rules *224 lbs* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *8" x (3 1/2" x 2)* Length as per rule *52 1/2"* Distance apart *8 1/2" x 8"* Number and pitch of stays in each *3 - 7 x 8"*Working pressure by rules *309 lbs* Superheater or Steam chest; how connected to boiler *-* Can the superheater be shut off and the boiler workedseparately *Yes* Diameter *-* Length *-* Thickness of shell plates *-* Material *-* Description of longitudinal joint *-* Diam. of rivetholes *-* 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 *-*

VERTICAL DONKEY BOILER—

Manufacturers of Steel *Woul* ✓

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fired _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with casing 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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *See separate sheet* ✓

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

M. H. Bell Manufacturer.

Dates of Survey while building { During progress of work in shops - - - } *1915: - March 4-11-15; 22, 26, 30 May 4, 7 up till 29th Augth 1915*
{ During erection on board vessel - - - }
Total No. of visits *162*

Is the approved plan of main boiler forwarded herewith *Y*

Dates of Examination of principal parts—Cylinders *7-5-15* Slides *5-15* Covers *5-15* Rods _____

Connecting rods *15-1-17* Crank shaft *18* Thrust shaft *16* Tunnel shaft *15* Screw shaft *1-17* Propeller *15-1*

Stern tube *19-9-16* Steam pipes tested *12-1-17* Engine and boiler seatings *26-2-17* Engines holding down bolts *26-2-17*

Completion of pumping arrangements *14-8-17* Boilers fixed *2-3-17* Engines tried under steam *28-8-17*

Main boiler safety valves adjusted *14-8-17* Thickness of adjusting washers *6-11-17*

Material of Crank shaft *Hypos* Identification Mark on Do. *W. J. B.* Material of Thrust shaft *do* Identification Mark on Do. *15-1*

Material of Tunnel shafts *do* Identification Marks on Do. *27-9-16* Material of Screw shafts *do* Identification Marks on Do. *15-1*

Material of Steam Pipes *W-Iron* ✓ Test pressure *660 lbs. sq. in.*

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

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 and on trial in Belfast Lough the machinery worked satisfactorily. In my opinion, it is eligible for record L.M.C. 8-17, with notation "Forced Draft" "Electric Light & Reping Machinery".

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 8.17. F.D.

The amount of Entry Fee .. £ *3* : - :
Special .. £ *70-3* : - :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
When applied for, *4-9-17*
When received, *11/9/17*

Committee's Minute
Assigned

TUE. 18 SEP. 1917
+ L.M.C. 8.17
F.D.

R. F. Beven
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping