

## REPORT ON MACHINERY.

No. 8152

MON 7-JUL. 1919

Date of writing Report 30<sup>th</sup> June 1919 When handed in at Local Office 10 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey 5<sup>th</sup> April 1918 Last Survey 26 June 1919  
 Reg. Book. S.S. New Brunswick (Number of Visits 48) Tons 6529 Gross 4028 Net  
 Master Belfast Built at Belfast By whom built Harland & Wolff L<sup>d</sup> When built 1919  
 Engines made at Belfast By whom made - when made -  
 Boilers made at - By whom made - when made -  
 Registered Horse Power 517.5/8 Owners Elder Dempster & Co L<sup>d</sup> Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 517.5/8 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
**ENGINES, &c.**—Description of Engines Single Screw Triple Expansion Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27"-44"-73" Length of Stroke 48" Revs. per minute 79 Dia. of Screw shaft 14.76" Material of I. 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 ✓ Length of stern bush 63"  
 Dia. of Tunnel shaft 13.3" Dia. of Crank shaft journals 13.9" Dia. of Crank pin 4 1/4" Size of Crank webs 28 x 9 Dia. of thrust shaft under  
 collars 15" Dia. of screw 17"-9" Pitch of Screw 16"-6" No. of Blades 4 State whether moveable No Total surface 100 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines See other sheet No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4-3 1/2" In Holds, &c. 8-3 1/2" 2-4 1/2" 1-3" 6-2 1/2"  
 No. of Bilge Injections 1 sizes 13" Connected to condenser, or to circulating pump Pumps a separate Donkey Suction fitted in Engine room & sizes 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 ✓  
 Are all connections with the sea direct on the skin of the ship Yes - Except main tank inlets 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 Fore hold suction How are they protected Iron 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  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck  
**BOILERS, &c.**—(Letter for record 30) Manufacturers of Steel D. Colville & Son L<sup>d</sup>  
 Total Heating Surface of Boilers 7668 sq ft Forced Draft fitted Yes No. and Description of Boilers 3-Single End Cylinders  
 Working Pressure 180 lbs Tested by hydraulic pressure to 300 lbs Date of test 24-5-19 No. of Certificate 544  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 1/2 sq ft No. and Description of Safety Valves to  
 each boiler 2-Direct Spring Area of each valve 9.62 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 14 in Dia. of boilers 15'-6" Length 11'-6" Material of shell plates Steel  
 Thickness 1 1/4" Range of tensile strength 28-52 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap 90°  
 long. seams Butt Lap Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 19 1/2"  
 Per centages of strength of longitudinal joint 88-1 Working pressure of shell by rules 182 lbs Size of manhole in shell 16 x 12  
 Size of compensating ring Plate flange No. and Description of Furnaces in each boiler 3-Dighton Material Steel Outside diameter 50 3/16"  
 Length of plain part 5' Thickness of plates 3 1/2" Description of longitudinal joint Weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 1/16" Top 23/32" Bottom 23/32"  
 Pitch of stays to ditto: Sides 10 5/8 x 9 1/4" Back 10 5/8 x 8 3/4" Top 10 5/8 x 9 1/4" Stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs  
 Material of stays Steel Area at smallest part 2.39-3.49 sq in supported by each stay 98 1/2 sq in Working pressure by rules 186 lbs End plates in steam space:  
 Material Steel Thickness 1 1/2" Pitch of stays 21 1/4 x 21 1/4" How are stays secured Nuts Working pressure by rules 180 lbs Material of stays Steel  
 Area at smallest part 8.29 sq in area supported by each stay 459 3/8 sq in Working pressure by rules 187 lbs Material of Front plates at bottom Steel  
 Thickness 3 1/2" Material of Lower back plate Steel Thickness 2 1/2" Greatest pitch of stays 13 5/8" Working pressure of plate by rules 189 lbs  
 Diameter of tubes 2 3/4" Pitch of tubes 4 x 3 3/8" Material of tube plates Steel Thickness: Front 3 1/2" Back 3/4" Mean pitch of stays 12 x 7 1/2"  
 Pitch across wide water spaces 13 5/8" Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10 x (5 x 2) Length as per rule 35 7/16" Distance apart 10 5/8" Number and pitch of stays in each 3-9 1/2"  
 Working pressure by rules 182 lbs Steam dome: description of joint to shell ✓ % of strength of joint -  
 Diameter - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes -  
 Pitch of rivets - Working pressure of shell by rules - Crown plates - Thickness - How stayed -  
**SUPERHEATER.** Type - Date of Approval of Plan - Tested by Hydraulic Pressure to -  
 Date of Test - Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler -  
 Diameter of Safety Valve - Pressure to which each is adjusted - Is Easing Gear fitted -

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

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

The foregoing is a correct description,

For HARLAND & WOLFF Ltd.

*J. E. Hebbel*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *5<sup>th</sup> April 1918 to 26<sup>th</sup> June 1919*  
 { During erection on board vessel --- }  
 Total No. of visits *48*

Is the approved plan of main boiler forwarded herewith? *No*

Dates of Examination of principal parts—Cylinders *23* Sides *9* — *4* Pistons *8* — *8* Rods *8*  
 Connecting rods *28-4-19* Crank shaft *19-4-19* Thrust shaft *20-5-19* Tunnel shafts *20-5-19* Screw shaft *20-5-19* Propeller *9-4-19*  
 Stern tube *9-4-19* Steam pipes tested *9-12-18* Engine and boiler seatings *5-6-19* Engines holding down bolts *5-6-19*  
 Completion of pumping arrangements *24-6-19* Boilers fixed *5-6-19* Engines tried under steam *24-6-19*  
 Completion of fitting sea connections *18-4-19* Stern tube *18-4-19* Screw shaft and propeller *25-5-19*  
 Main boiler safety valves adjusted *11-6-19* Thickness of adjusting washers *4-6-19*  
 Material of Crank shaft *1. Steel* Identification Mark on Do. *20-5-19* Material of Thrust shaft *do* Identification Mark on Do. *do*  
 Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*  
 Material of Steam Pipes *W. Iron* Test pressure *540 lbs sq. in.*  
 Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *✓*  
 Have the requirements of Section 49 of the Rules been complied with *✓*  
 Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *SS. Newton*

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 under steam in Belfast Lough, the machinery worked satisfactorily. In our opinion, it is eligible for records + L.M.C. 1-19, with notation "Forced Draft" + "Electric Light".*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.19. F.D.

The amount of Entry Fee ... £ 3 : - :  
 Recd. Fee ... £ 45 : 18 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ 30 : 0 :  
 When applied for, 1-7-1919  
 When received, 3/2/19

Committee's Minute

FRI. 11 JUL. 1919

Assigned

MACHINERY CERTIFICATE  
 WRITTEN.

Rpt. 9a.

Port of *Belfast*

Continuation of Report No. 8152 dated *30<sup>th</sup> June 1919* on the

MON. 7-JUL. 1919

*SS. New Brunswick*  
 2 Connecting rod top end bolts + nuts ✓  
 2 - - - - - bottom - - - - ✓  
 2 Main bearing bolts + nuts ✓  
 3 Crank shaft coupling - - ✓  
 3 Tunnel - - - - ✓  
 1 Feed pump suction valve ✓  
 1 - - - - - discharge - ✓  
 1 Pelge - - - - ✓  
 1 - - - - - suction - ✓  
 3 Main feed check valves ✓  
 3 Donkey - - - - ✓  
 50 Bolts + nuts assorted ✓  
 6 Studs each size in boiler mountings ✓  
 6 Cylinder cover studs + nuts ✓  
 6 Steam chest - - - - ✓  
 12 Junk ring - - - - ✓  
 Bars Iron, Bolts, nuts, etc. ✓  
 1 Propeller C. Iron.  
 12 Condenser tubes, or ferrules.  
 6 low pump valves.  
 Piston rod packing.  
 1 L. P. valve spindle complete  
 1 Set bottom end brasses  
 4 Check valve spindles  
 Furnace spare gear, fuel pump spare gear etc.

Auxiliary Pumps

1 Aux. Feed Pump 9 1/2" x 7" x 18" ✓  
 1 General Service - - - - ✓  
 1 Ballast - 10 1/2" x 14" x 24" ✓  
 1 Fresh Water - 3" x 3" x 4" ✓

*R. B. Bewick*  
*Surveyor & Captain*

*R. B. Bewick*  
 Engineer Surveyor to Lloyd's Register of Shipping.

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 Foundation

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