

# REPORT ON MACHINERY.

Received at London Office  
 Date of writing Report 5<sup>th</sup> June 1919 When handed in at Local Office 19 Port of Belfast  
 in Survey held at Belfast Date, First Survey 5<sup>th</sup> April 1918 Last Survey 27<sup>th</sup> May 1919  
 g. Book. on the S.S. Newton (Number of Visits 41) Gross 2509  
 Tons Net 4015  
 When built 1919

Master Built at Belfast By whom built Harland & Wolff L<sup>td</sup>  
 Engines made at Belfast By whom made - when made -  
 Milers made at - By whom made - when made -

Registered Horse Power 518 Owners Mr. & Mrs. P. U. Lough Belonging to Liverpool  
 Net Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Single Screw Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 No. of Cylinders 27-44-73 Length of Stroke 48 Revs. per minute 79 Dia. of Screw shaft 14.76 as per rule 15.75 Material of screw shaft 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  
 the 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 part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two  
 shafts are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 63  
 Dia. of Tunnel shaft 13.33 as per rule 13.87 as fitted Dia. of Crank shaft journals 13.9 as per rule 14.7 as fitted Dia. of Crank pin 14.3 Size of Crank webs 28 x 9 Dia. of thrust shaft under  
 rollers 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 Sizes of Pumps Sheet No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 4-3 1/2 1-3 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 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 Yes  
 Are all connections with the sea direct on the skin of the ship Yes Except in cases where they are Both Valves or Cocks  
 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  
 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

MILERS, &c.—(Letter for record S) Manufacturers of Steel D. Colville & Sons L<sup>td</sup>

Total Heating Surface of Boilers 7668 sq ft Forced Draft fitted Yes No. and Description of Boilers 3- Single End Cylind.  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 29-4-19 No. of Certificate 542  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 6 3/4 sq ft No. and Description of Safety Valves to  
 each boiler Two- 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

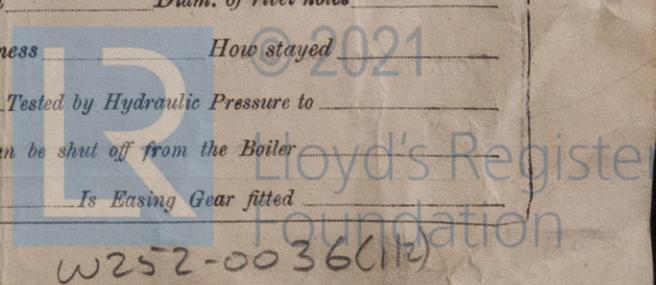
Smallest distance between boilers or uptakes and bunkers or woodwork 14 Mean dia. of boilers 15.6 Length 11.6 Material of shell plates Steel  
 Thickness 1 1/4 Range of tensile strength 28-37 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Double  
 g. seams Butt Single Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 9 1/2 Lap of plates or width of butt straps 19 1/2  
 Percentages of strength of longitudinal joint 85.1 Working pressure of shell by rules 182 lbs Size of manhole in shell 16 x 12  
 Material of compensating ring Plate flanged No. and Description of Furnaces in each boiler 3- Direct Material Steel Outside diameter 50 3/16

Length of plain part top 5 bottom 8 Thickness of plates crown 3 1/2 bottom 3 1/2 Description of longitudinal joint Weld No. of strengthening rings -  
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 3/32 Back 1/8 Top 2 3/32 Bottom 2 3/32  
 Pitch of stays to ditto: Sides 10 1/2 x 9 1/4 Back 9 1/2 x 8 1/2 Top 10 1/2 x 9 1/4 Are stays fitted with nuts or riveted heads None 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 1/32 Pitch of stays 2 1/2 x 2 1/2 How are stays secured None 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 3/32 Material of Lower back plate Steel Thickness 2 1/2 Greatest pitch of stays 1 3/8 Working pressure of plate by rules 189 lbs

Diameter of tubes 2 3/4 Pitch of tubes 4 x 3 1/2 Material of tube plates Steel Thickness: Front 3/32 Back 1/4 Mean pitch of stays 12 x 7 1/2  
 Thickness across wide water spaces 1 3/8 Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10 x (8 1/2 x 2) Length as per rule 35 7/16 Distance apart 10 1/2 Number and pitch of stays in each 3-9 1/4  
 Working pressure by rules 182 lbs Steam dome: description of joint to shell Yes % of strength of joint -

Material 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  
 Material of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler  
 Material 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.C. Rebeck* Manufacturer.

Dates of Survey while building: During progress of work in shops -- *5<sup>th</sup> April 1918 to 27<sup>th</sup> May 1919*  
During erection on board vessel ---  
Total No. of visits *41*

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

Dates of Examination of principal parts—Cylinders *2 Stacks* & Covers *18* Pistons *6* Rods *6*  
Connecting rods *6-4-19* Crank shaft *19* Thrust shaft *18* Tunnel shafts *5* Screw shaft *7-3-19* Propeller *28-2*  
Stern tube *9-4-19* Steam pipes tested *10-12-18* Engine and boiler seatings *10-5-19* Engines holding down bolts *16-5-19*  
Completion of pumping arrangements *22-5-19* Boilers fixed *10-5-19* Engines tried under steam *27-5-19*  
Completion of fitting sea connections *18-4-19* Stern tube *18-4-19* Screw shaft and propeller *25-4-19*  
Main boiler safety valves adjusted *22-5-19* Thickness of adjusting washers *7-11-19*  
Material of Crank shaft *S. Steel* Identification Mark on Do. *LLOYDS* Material of Thrust shaft *W. Iron* Identification Mark on Do. *Do*  
Material of Tunnel shafts *W. Iron* Identification Marks on Do. *Do* Material of Screw shafts *W. Iron* Identification Marks on Do. *Do*  
Material of Steam Pipes *W. Iron* Test pressure *540 lbs*  
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 *S.S. Naemphth etc.*

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 my opinion, it is eligible for records + L.M.C. 5-19, with notations "Fused Draft" + "Electric Light"*

It is submitted that this vessel is eligible for THE RECORD + LMC 5-19 F.D.

*H.W. ARK*  
*12/6/19*

*R. J. Beveridge*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ *3* :  
Special ... £ *45* : *18* :  
Donkey Boiler Fee ... £ *26* :  
Travelling Expenses (if any) £ :  
When applied for, *30.5.19*  
When received, *19.6.19*

Committee's Minute *FRI JUN 13 1919*  
Assigned *+ Lmb 5.19*  
*F.D.*

- S.S. Newton*
- 1* Auxiliary Feed Pump ✓
  - 1* General Service ✓
  - 1* Ballast ✓
  - 1* Fresh Water ✓

- Spare Gear, Principal items*
- 2* Top & two bottom end bolts + nuts ✓
  - 2* Main bearing bolts + nuts ✓
  - 6* Coupling bolts ✓
  - 2* Feed + *2* Bilge Pump valves ✓
  - 3* Main + *3* Donkey feed Check valves ✓
  - 50* Bolts + nuts assorted ✓
  - 8* Bars Iron ✓
  - 1* C. Iron propeller ✓
  - 12* Condenser tubes + *50* ferrules ✓
  - 6* Air pump valves ✓
  - 2* Piston rod packing rings ✓
  - 2* Valve spindle ✓
  - 200* Fuel bars ✓
  - 9* Furnace Baffle plates ✓
  - 1* Filtered bucket + *50* lbs coir fibre ✓
  - Set* Spare gear Circulating Pump ✓
  - Feed* ✓
  - General* ✓
  - Ballast* ✓
  - piston rings Fan Engine* ✓
  - 12* Boiler tubes plain ✓
  - 1* Feed pump escape valve spring ✓
  - 1* Diaphragm each size reducing valve ✓
  - 1* Valve die for Main Engine Stop Valve ✓
  - 6* Studs for Cylinder Covers ✓
  - 6* - - Steam Chest ✓
  - 6* - - each size in Boiler mountings etc. ✓

*R. J. Beveridge*