

# REPORT ON MACHINERY.

Date of writing Report 15<sup>th</sup> Oct 1918 When handed in at Local Office 10 Port of Belfast Received at London Office THU. OCT. 17. 1918

No. in Survey held at Belfast Date, First Survey 8<sup>th</sup> March 1917 Last Survey 1<sup>st</sup> Oct 1918

Reg. Book. on the S.S. British Beacon (Number of Visits 11)

Master J. Harwood Built at Belfast By whom built Warkman Clark & Co When built 1918 Gross 6891 Tons Net 4065

Engines made at Belfast By whom made - when made -

Boilers made at - By whom made - when made -

Registered Horse Power - Owners The Shipping Controller Port belonging to London

Nom. Horse Power as per Section 28 634 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engine Single Screw Triple Expansion of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27"-45"-75" Length of Stroke 54 Revs. per minute 85 Dia. of Screw shaft 15 1/2" Material of S. Steel  
 as fitted 16 1/2" screw shaft)

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 5'-5"

Dia. of Tunnel shaft 14 1/2" as per rule ✓ Dia. of Crank shaft journals 15 1/2" as fitted ✓ Dia. of Crank pin 15 1/2" Size of Crank webs 28 1/2" Dia. of thrust shaft under collars 15 1/4" Dia. of screw 18'-9" Pitch of Screw 17'-6" No. of Blades 4 State whether moveable Yes Total surface 100 sq ft.

No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Donkey Engines See Size of them sheet No. and size of Suctions connected to both Bilge and Donkey pumps -

In Engine Room 6-3 1/2" In Holds, &c. ✓

No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump Pump separate Donkey Suction fitted in Engine room & size 1-3 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 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 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 ✓ How are they protected ✓

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 ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Coy of Scotland

Total Heating Surface of Boilers 9666 sq ft Forced Draft fitted Yes No. and Description of Boilers 3 S. End, Cylind.

Working Pressure 190 lbs Tested by hydraulic pressure to 380 lbs Date of test 1-3-18 No. of Certificate 518

Can each boiler be worked separately Yes Area of fire grate in each boiler 78 1/2 sq ft. No. and Description of Safety Valves to each boiler 2 - Wood Spring Area of each valve 12 1/2 sq in Pressure to which they are adjusted 195 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork Board 30" Mean dia. of boilers 6'-6" Length 12'-0" Material of shell plates Steel

Thickness 1 3/8" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap, S.S.

long. seam Butt Lap Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 9 3/4" Top of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 86.0 plate 85.5 Working pressure of shell by rules 190 lbs Size of manhole in shell 16" x 12"

Size of compensating ring No. Nails No. and Description of Furnaces in each boiler 4 - Brighton Material Steel Outside diameter 45 1/4"

Length of plain part top 2" bottom 9" Thickness of plates crown 3 3/4" bottom 3 1/4" Description of longitudinal joint Weld No. of strengthening rings ✓

Working pressure of furnace by the rules 201 lbs combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back 3 1/2" Top 3 1/2" Bottom 1 3/8"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back Various Top 7 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads None Working pressure by rules 196 lbs

Material of stays Steel Area at smallest part 76 1/2 sq in supported by each stay Working pressure by rules 198 lbs End plates in steam space: Material Steel Thickness 1 3/8" Pitch of stays 20" x 15 1/2" How are stays secured Butt Working pressure by rules 198 lbs Material of stays Steel

Area at smallest part 6'0" x 9 1/2" Area supported by each stay Working pressure by rules 196 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 213 lbs

Diameter of tubes 2 1/2" Pitch of tubes 5 1/2" x 3 5/8" Material of tube plate Steel Thickness: Front 1 1/4" Back 1 3/8" Mean pitch of stays 11 1/4" x 7 1/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 190 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2" x (1 1/2" x 2) Length as per rule 38 1/2" Distance apart 8 1/2" Number and pitch of stays in each 3-7 3/4"

Working pressure by rules 195 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 -

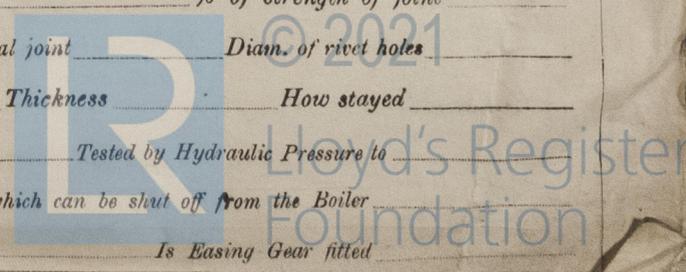
Pitch of rivets - Working pressure of shell by rules - Crown plates - Thickness - How stayed -

UPERHEATER. 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 -

007001-007041-0023 1/2



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *See other 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 -- *1917, March 8<sup>th</sup> to 11<sup>th</sup> Oct 1918*  
During erection on board vessel ---  
Total No. of visits *110*

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

Dates of Examination of principal parts—Cylinders *3* Slides *5-17* Covers *3* Pistons *3* Rods *3*  
Connecting rod *24-5-18* Crank shaft *17* Thrust shaft *17* Tunnel shafts *3* Screw shaft *30-7-18* Propeller *30-7-18*  
Stern tube *30-7-18* Steam pipes tested *9-8-18* Engine and boiler seatings *17-9-18* Engines holding down bolts *24-9-18*  
Completion of pumping arrangements *4-10-18* Boilers fixed *24-9-18* Engines tried under steam *4-10-18*  
Completion of fitting sea connections *24-7-18* Stern tube *19-8-18* Screw shaft and propeller *30-8-18*  
Main boiler safety valves adjusted *4-10-18* Thickness of adjusting washers *9-14/32*  
Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS 7-5-18* Material of Thrust shaft *do* Identification Mark on Do. *LLOYDS 31-7-18*  
Material of Tunnel shafts *do* Identification Marks on Do. *✓* Material of Screw shafts *do* Identification Marks on Do. *do*  
Material of Steam Pipes *W. Iron* Test pressure *570 lbs.*

Is an installation fitted for burning oil fuel *Yes* Is the flash point of the oil to be used over 150°F. *Yes*

Have the requirements of Section 49 of the Rules been complied with *Yes*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *S.S. British Lantern*

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, and the instructions for the Admiralty, and Controller of Auxiliary Shipbuilding, as far as in the Secretary's Letter, and Specification.*

*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. 10-18 with notation "Forced Draft" "Electric Light" "Machinery aft"*

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 10.18 F.D.  
FITTED FOR OIL FUEL 10.18 F.P. ABOVE 150°F

*18-10-18*

*ARR*

The amount of Entry Fee as per Circular Letter Special *12-1307-164* 2: Donkey Boiler Fee ... Travelling Expenses (if any) £

When received. *103-19-19*

*R. J. Beveridge*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

TUE. 22 OCT. 1918

+ L.M.C. 10.18. F.D.

Fitted for oil fuel 10.18 above 150°F

Rpt. 9a.

Port of *Belfast*

Continuation of Report No. 8021 dated *15<sup>th</sup> Oct 1918* on the

*S.S. British Beacon*

1 Ballast Pump *6" x 8" x 8"*  
1 Feed *8" x 5 1/2" x 8"*  
2 New Feed *12" x 9" x 21"*  
1 Centrif. Circulating *16" pipe*  
1 General *8" x 5 1/2" x 8"*

Spare Gear - Principal Items

1 Propeller Shaft  
1 Pair Crank Pin bushes  
1 Eccentric Sheave + strap  
1 Slide valve spindle  
1 Set rings + pumps for each piston + H.P. piston valve  
1 Air pump rod + set valves  
12 Main Condenser tubes + 100 ferrules  
1 Set Copeland Packing each size rod fitted  
1 - packing rings main pump buckets  
20 plain rods 1 stay tube for buckets  
2 Cast Steel propeller blades  
2 Top end + 2 bottom end bolts + nuts  
2 Main bearings  
1 Set coupling  
1 Set Feed + Bilge pump valves  
1 Impeller for Circulating Pump  
1 - shaft  
2 Safety valve springs  
2 Escape  
12 Aux. Condenser tubes + 50 ferrules  
Set main feed check valves  
- aux.  
Fan + Circulating Pumps gear  
Refrigerating Engine gear  
oil fuel burning Spare gear  
Bolts, nuts, oven etc + all gear to L.L.R. Rules.

*R. J. Beveridge*



© 2021 2023 2/2

Lloyd's Register Foundation