

REPORT ON MACHINERY.

Received at London Office

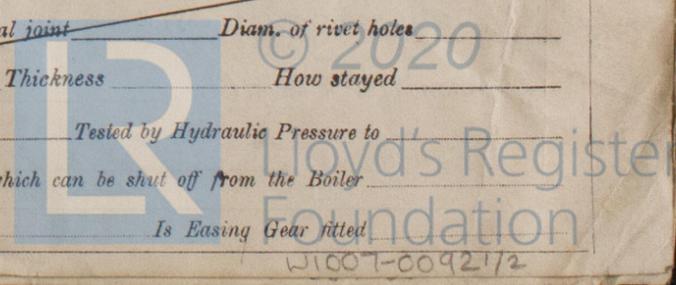
MON. NOV. 11. 1918

Date of writing Report 9th Nov 1918 When handed in at Local Office 10 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 29th Nov 1917 Last Survey 31st Oct 1918
 Reg. Book. T.S.S. "War Icarus" (Number of Voids 54)
 Master Watson Built at Belfast By whom built Harland & Wolff L^{td} Gross 8002 Tons
 Engines made at Belfast By whom made - when made - Net 4905
 Boilers made at - By whom made - when made - When built 1918
 Registered Horse Power - Owners The Shipping Controller Port belonging to -
 Nom. Horse Power as per Section 28 1138 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 26 1/2" - 44" - 73" Length of Stroke 48" Revs. per minute 82 Dia. of Screw shaft as per rule 14.8 Material of S. Steel
 as fitted 15.75 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 63"
 Dia. of Tunnel shaft as per rule 13.7 Dia. of Crank shaft journals as per rule 14.37 Dia. of Crank pin 14 1/4" Size of Crank webs 23" x 9" Dia. of thrust shaft under
 collars 15" Dia. of screw 17"-3" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable Yes Total surface 90 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 side of pumps sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 6-3 1/2" In Holds, &c. 12-3 1/2" x 1-2 1/2"
 No. of Bilge Injections 2 sizes 13" Connected to condenser, or to circulating pump Pump Is a 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 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 Wood
 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 No W. T. Latched from from deck

BOILERS, &c.—(Letter for record S) Manufacturers of Steel D. Colville & Sons L^{td}
 Total Heating Surface of Boilers 17079 sq ft Forced Draft fitted Yes No. and Description of Boilers 3-Double End Cylinders
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 9-10-18 No. of Certificate 531
 Can each boiler be worked separately Yes Area of fire grate in each boiler 146 1/2 sq ft No. and Description of Safety Valves to
 each boiler 3-Direct Spring Area of each valve 14 1/9 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 or woodwork - Mean dia. of boilers 16'-3" Length 20'-6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap D. & T.
 long. seams Auto Lub Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/2" Lap of plates on width of butt straps 2 2/3"
 Per centages of strength of longitudinal joint 85.26 Working pressure of shell by rules 207 lbs Size of manhole in shell 16" x 18"
 plate 85.7 No. and Description of Furnaces in each boiler 8-Reghten Material Steel Outside diameter 44 1/2"
 Length of plain part top 4" Thickness of plates bottom 3 1/2" Description of longitudinal joint Weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 213 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/6" Back ✓ Top 1/6" Bottom 1/6"
 Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back ✓ Top 7" x 6 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 211 lbs
 Material of stays Steel Area at smallest part 2.07 to 2.4 sq ft supported by each stay 77 1/2 sq in Working pressure by rules 241 lbs and plates in steam space:
 Material Steel Thickness 1 3/32" Pitch of stays 21" x 16" How are stays secured Nuts & Washers Working pressure by rules 201 lbs Material of stays Steel
 Area at smallest part 7.06 sq ft Area supported by each stay 336 sq in Working pressure by rules 218 lbs Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 5/8" Material of tube plates Steel Thickness: Front 1/4" Back 3/4" Mean pitch of stays 11 1/4" x 7 1/4"
 Pitch across wide water spaces 1 3/2" Working pressures by rules 203 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8" x (3/4" x 2) Length as per rule 52 1/2" Distance apart 8 1/2" x 7" Number and pitch of stays in each 6-8 1/2" x 6 3/4"
 Working pressure by rules 235 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 other sheet ✓

The foregoing is a correct description,
For HARLAND & WOLFF Ltd.

Submarine

Manufacturer.

Dates of Survey while building: During progress of work in shops - 29th Nov 1917 to 31st Dec 1918
During erection on board vessel - 54
Total No. of visits 54
Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts - Cylinders 23 Slides 2 Covers 7 Pistons 5 Rods 5
Connecting rods 7 Crank shaft 4 Thrust shaft 5 Tunnel shafts 5 Screw shaft 20-8-18 Propeller 3-8-18
Stern tube 5-8-18 Steam pipes tested 26-9-18 Engine and boiler seatings 7-10-18 Engines holding down bolts 1-10-18
Completion of pumping arrangements 30-10-18 Boilers fixed 2-10-18 Engines tried under steam 3-10-18
Completion of fitting sea connections 29-8-18 Stern tube 27-8-18 Screw shaft and propeller 29-8-18
Main boiler safety valves adjusted 30-10-18 Thickness of adjusting washers 3/32
Material of Crank shaft Steel Identification Mark on Do. LLYPS 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 H. Iron Test pressure 600 lbs sq
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 No If so, state name of vessel

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 instructions and specifications of the Controller of Shipping. The workmanship and the material are of good description, and on trial under steam in Belfast Lough, the machinery worked satisfactorily.

In my opinion it is eligible for record L.M.C. 10-18, with noted "Forced Draft" and "Electric Light"

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10.18. F.D.

R.F.D.
11/11/18
J.P.R.

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

The amount of Entry Fee £ 5 When applied for 4-11-18
Special fee as above £ 177.76-5
Donkey Boiler Fee £ 1 When received 11-1-19
Travelling Expenses (if any) £ 19 RBM
6/1/19

Committee's Minute FRI 15 NOV 1918
Assigned + L.M.C. 10.18

F.D.

MACHINERY CERTIFICATE
WRITTEN

- T.S.S. "Max Icarus"
- 1 Ballast Pump 10 1/2" x 14" x 24"
 - 1 Fresh Water 3" x 3" x 24"
 - 1 Aux^l Feed 9 1/2" x 7" x 18"
 - 2 Main 15 1/2" x 11 1/2" x 24"
 - 1 General 9 1/2" x 7" x 18"
 - 1 Main Circulating Cent^l 13" pipe
 - 1 Aux^l 6"

Spare Gear (Principal items)

- 4 Connecting rod top end bolts + nuts ✓
- 4 - - - bottom - - - ✓
- 4 Main bearing bolts + nuts ✓
- 6 Coupling bolts + nuts ✓
- Set Feed + Bilge Pump valves ✓
- 3 Main + 3 Aux^l Feed Check valves ✓
- 2 C.I. Propeller blades
- 9 Stud + nuts for do
- 1 Fire Pump rod + nut
- 1 - - - Guard -
- 1 Slide Valve spindle
- 250 Firebars
- 20 Main Condenser tubes + 80 ferrules
- 1 Pair Connecting rod bottom end bushes
- 1 - - - top - - -
- 1 Set Metallic packing H. P. piston rods
- 30 Boiler tubes
- Set Spare gear for Main + Aux^l Feed Pumps
- - - Ballast + Main Cent^l
- - - Fan Engine
- - - Wrenches
- Bolts, nuts, wire etc etc.

R.F. Beveridge

The amount of Entry Fee to be sent to the Registrar of Shipping for Committee's Minute