

# REPORT ON MACHINERY.

No. 30,001

Received at London Office

16 JUN. 1917

Date of writing Report 19 When handed in at Local Office 14-6-17 Port of Hull

No. in Survey held at Hull Date, First Survey Nov 16/16 Last Survey June 13 1917  
 Reg. Book. on the "Steel S.S. John Arthur" (Number of Visits 29)

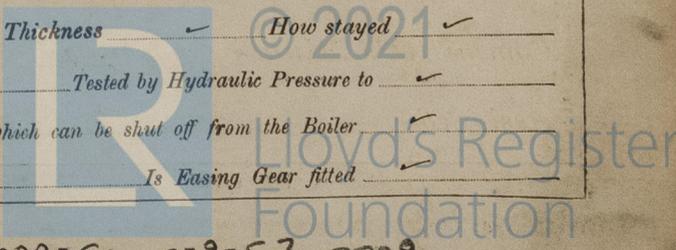
Master Built at Beverley By whom built Cook, Melton & Lemmell Tons Gross 306 Net 121  
 Engines made at Hull By whom made Amos & Smith L<sup>td</sup> No. 2834 when made 1917  
 Boilers made at Hull By whom made Amos & Smith L<sup>td</sup> when made 1917  
 Registered Horse Power Owners British Admiralty Port belonging to ✓  
 Nom. Horse Power as per Section 28 89 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted No. ✓

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 13 1/2" · 22 1/2" · 37" Length of Stroke 24" Revs. per minute 116 Dia. of Screw shaft as per rule 7.49" Material of screw shaft Iron  
 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 3' 0" ✓  
 Dia. of Tunnel shaft as per rule 6.75" ✓ Dia. of Crank shaft journals as per rule 7.08" ✓ Dia. of Crank pin 7 1/2" Size of Crank webs 4 1/2" · 14 1/2" Dia. of thrust shaft under  
 collars 7 1/2" Dia. of screw 9' 0" Pitch of Screw 11' 0" No. of Blades 4 State whether moveable No Total surface 29.5 f  
 No. of Feed pumps 1 Diameter of ditto 2 7/8" Stroke 12" Can one be overhauled while the other is at work ✓ EHP 67  
 No. of Bilge pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines 2 Sizes of Pumps 6 1/4" · 4 3/4" · 6" · 6" · 3" · 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 — 2" suction ✓ In Holds, &c. 1 — 2" suction to fore-castle 1 — 2" to  
 main fish room, 1 — 2" to main slush well, 1 — 2" to spare slush well. ✓  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 2" ejector  
 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 No  
 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 above  
 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 4 — 2" hold and slush well pipes How are they protected wood casing ✓  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times ✓  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges ✓  
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record S. ✓) Manufacturers of Steel Messrs John Spencer & Sons L<sup>td</sup>  
 Total Heating Surface of Boilers 1595 f Is Forced Draft fitted No No. and Description of Boilers One single ended  
 Working Pressure 185 lbs Tested by hydraulic pressure to 370 lbs Date of test 25.4.17 No. of Certificate 3708  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 47.5 f No. and Description of Safety Valves to  
 each boiler 2 spring loaded Area of each valve 5.94 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 8" Mean dia. of boilers 13' 6" Length 10' 6" Material of shell plates S.  
 Thickness 1 1/8" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8" Lap of plates or width of butt straps 17 1/8"  
 Per centages of strength of longitudinal joint rivets 91.5 Working pressure of shell by rules 185 Size of manhole in shell 16" · 12"  
 Size of compensating ring 40" · 30" · 1 1/2" No. and Description of Furnaces in each boiler 3 plain Material S. Outside diameter 39 3/4"  
 Length of plain part top 79 1/2" Thickness of plates crown 49/64 Description of longitudinal joint welded No. of strengthening rings ✓  
 bottom 74 Thickness of plates bottom 49/64 Working pressure of furnace by the rules 191 Combustion chamber plates: Material S. Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"  
 Pitch of stays to ditto: Sides 9 1/2" · 7 1/2" Back 9" · 9 1/4" Top 10" · 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 189  
 Material of stays S. Area at smallest part 2.066 Area supported by each stay 85 Working pressure by rules 219 End plates in steam space:  
 Material S. Thickness 1 1/2" Pitch of stays 17" · 15" How are stays secured secured with washers Working pressure by rules 196 Material of stays S.  
 Area at smallest part 6.10 Area supported by each stay 255 Working pressure by rules 249 Material of Front plates at bottom S.  
 Thickness 1" Material of Lower back plate S. Thickness 1 1/2" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 212  
 Diameter of tubes 3 1/4" Pitch of tubes 4 7/8" · 4 1/2" Material of tube plates S. Thickness: Front 1" Back 3/32" Mean pitch of stays 9 3/4" · 9"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules 189 Girders to Chamber tops: Material S. Depth and  
 thickness of girder at centre 9 1/2" · 1 3/4" Length as per rule 2.10 Distance apart 10" Number and pitch of stays in each 3 — 8 1/2"  
 Working pressure by rules 204 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 ✓

009050-009057-0009



IS A DONKEY BOILER FITTED? no.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— Two each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts and nuts, one set each feed and bilge pump valves, iron of various sizes, a quantity of assorted bolts and nuts etc.

The foregoing is a correct description,

**FOR AMOS & SMITH LTD.**

*E. J. Robinson* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1916:— Nov 16. 23. Dec 11. 1917:— Jan 13. 23. Feb 5. 9. 10. 12. 16. 17. 27. Mar 5. 6. 15. 17. 28.  
{ During erection on board vessel --- } Apr 2. 16. 19. 25. May 2. 8. 9. 15. 17. Jan 1. 11. 13.  
Total No. of visits 29 Is the approved plan of main boiler forwarded herewith yes ✓

Dates of Examination of principal parts—Cylinders 12.2.17 Slides 17.2.17 Covers 12.2.17 Pistons 17.2.17 Rods 5.3.17  
Connecting rods 28.3.17 Crank shaft 17.3.17 Thrust shaft 17.3.17 Tunnel shafts ✓ Screw shaft 23.11.16 Propeller 9.2.17  
Stern tube 9.2.17 Steam pipes tested 9.5.17 Engine and boiler seatings 9.2.17 Engines holding down bolts 2.5.17  
Completion of pumping arrangements 11.6.17 Boilers fixed 8.5.17 Engines tried under steam 1.8.17  
Completion of fitting sea connections 9.2.17 Stern tube 9.2.17 Screw shaft and propeller 9.2.17  
Main boiler safety valves adjusted 1.8.17 Thickness of adjusting washers P. 3/2" S. 3/8"  
Material of Crank shaft Iron Identification Mark on Do. 17126A Material of Thrust shaft Iron Identification Mark on Do. 17119A  
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 23.11.16 16889A  
Material of Steam Pipes S. D. Copper ✓ Test pressure 400 lbs. ✓  
Is an installation fitted for burning oil fuel ✓ 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 Yes ✓  
Is this machinery duplicate of a previous case Yes ✓ If so, state name of vessel "Lethon" ✓

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

*The machinery of this vessel has been constructed under special survey in accordance with the approved plans and the rules of this Society; the materials and workmanship are good; the boiler and steam pipes have been tested as above by hydraulic pressure and found sound and good. The machinery has been properly fitted and secured on board, and on completion tried under steam and found satisfactory. The safety valves have been adjusted under steam and tested for accumulation, which did not exceed 190 lbs. per sq. inch. In my opinion the vessel is eligible for the record L.M.C. 6-17.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.17.

*J.W.D.*  
*J.M.* 19/6/17.  
*Geo. Allan*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 1 : - : } When applied for, 15-6-1917  
Special ... £ 26 : 14 : }  
Donkey Boiler Fee ... £ : : } When received, 31/6/19  
Traveling Expenses (if any) £ . : 3 : } 2/4/17

Committee's Minute

TUE 19 JUN 1917

Assigned

+ L.M.C. 6.17

MACHINERY CERTIFICATE WRITTEN



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Certificate (if required) to be sent to  
The Surveyors are requested not to write on or below the space for Committee's Minute.