

# REPORT ON MACHINERY.

Received at London Office JUN. 28. 1916

Date of writing Report 21<sup>st</sup> Aug 1916 When handed in at Local Office 25<sup>th</sup> Aug 1916 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 7 October, 1915 Last Survey 22<sup>nd</sup> Aug 1916  
 Reg. Book. on the Machinery of the R.F.A. "Creosol" (Number of Visits 74)  
 Master Short Bros. Ltd Built at Sunderland By whom built Short Bros. Ltd When built 1916  
 Engines made at Sunderland By whom made J. Dickenson & Sons Ltd. when made 1916  
 Boilers made at " By whom made " when made 1916  
 Registered Horse Power Admiralty Owners Admiralty Port belonging to London  
 Nom. Horse Power as per Section 28 141. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 16", 26", 43" Length of Stroke 27" Revs. per minute 100 Dia. of Screw shaft 9.39" Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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'-3"  
 Dia. of Tunnel shaft 7.76" Dia. of Crank shaft journals 8.14" Dia. of Crank pin 8 1/4" Size of Crank webs 15" X 5 1/8" Dia. of thrust shaft under  
 collars 8 1/4" Dia. of screw 11'-0" Pitch of Screw 11'-0" No. of Blades 4 State whether moceable no Total surface 36 9'  
 No. of Feed pumps 2 Weis Diameter of ditto 5" Stroke 15" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Halls Diameter of ditto 8" Stroke 18" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 How Sizes of Pumps 9" X 12" stroke No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 of 2 1/2" & 2 of 3" in Boiler room Holds, &c. oil cargo pumps & one of 4"  
in fore hold. after coffee dam 8-4"  
 No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump pumps As a separate Donkey Suction fitted in Engine room & size 4"  
 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 none  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 Are they sized 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 none 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  
 Dates of examination of completion of fitting of Sea Connections 8/8/16 of Stern Tube 8/8/16 Screw shaft and Propeller 8/8/16  
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel J. Spencer & Son  
 Total Heating Surface of Boilers 2155 Is Forced Draft fitted Yes No. and Description of Boilers 2 Single ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7/1/16 No. of Certificate 3327  
 Can each boiler be worked separately Yes Area of fire grate in each boiler oil fuel No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 4.06 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 5'-6" Mean dia. of boilers 10'-3" Length 11'-0" Material of shell plates Steel  
 Thickness 27/32 Range of tensile strength 29-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. l.  
 long. seams d. r. d. l. Diameter of rivet holes in long. seams 15/16 Pitch of rivets 6 1/16 Lap of plates or width of butt straps 14 1/8"  
 Per centages of strength of longitudinal joint rivets 97.17 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" X 12"  
 plates 85.57  
 Size of compensating ring 7 1/8" X 27/32 No. and Description of Furnaces in each boiler 2 Dightons Material Steel Outside diameter 35 1/2"  
 Length of plain part top ✓ Thickness of plates crown 15/32 Description of longitudinal joint welded No. of strengthening rings ✓  
 bottom ✓ bottom ✓  
 Working pressure of furnace by the rules 195 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1/16  
 Pitch of stays to ditto: Sides 9" X 10" Back 10 1/2" X 8 3/4" Top 9" X 7" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs  
 Material of stays Steel Diameter at smallest part 2.031 Area supported by each stay 98.5 Working pressure by rules 186 lbs End plates in steam space:  
 Material Steel Thickness 27/32 Pitch of stays 14" X 13 1/4" How are stays secured d. n. w. Working pressure by rules 181 lbs Material of stays Steel  
 Diameter at smallest part 3.25 Area supported by each stay 185.5 Working pressure by rules 182 lbs Material of Front plates at bottom Steel  
 Thickness 27/32 Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 13" X 8 3/8" Working pressure of plate by rules 205 lbs  
 Diameter of tubes 3" Pitch of tubes 4 1/4" X 4 1/4" Material of tube plates Steel Thickness: Front 27/32 Back 13/16 Mean pitch of stays 8 1/2" X 10 3/8"  
 Pitch across wide water spaces 13" Working pressures by rules 269 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 6" X 2" Length as per rule 29 3/32 Distance apart 7" Number and pitch of stays in each 2 of 9"  
 Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet  
 holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, set of piston springs, set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron, spare propeller, top & bottom end brasses, eccentric strap complete, set of thrust shoes, air pump rod & valves set of metallic packing for piston rods & slide rods, 20 condenser tubes & minor parts, in accordance with specification.*

The foregoing is a correct description,

*John Dickinson & Sons, Limited.*

*Admiral*

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1915. Oct. 7. Nov. 5. 11. 16. 25. 30. Dec. 20. 21. 30. Jan. 6. 7. 11. 12. 13. 18. 24. 27. Feb. 4. 5. 8. 10. 11. 14. 29. Mar. 2. 7. 9. 14. During erection on board vessel - - - } 15. 16. 21. 23. 27. 28. 30. Apr. 4. 6. 11. 14. 18. 20. 26. 28. May 2. 12. 25. 30. 31. Jun. 6. 13. 20. 22. 24. 28. 30. Jul. 3. 5. 6. 11. 17. 27. 29. Aug. 3. 4. 8. 9. 10. 14. 16. 17. 18. 18. Total No. of visits *74*

Is the approved plan of main boiler forwarded herewith *yes*  
" " " donkey " " "

Dates of Examination of principal parts—Cylinders *11/2/16* Slides *18/4/16* Covers *16/5/16* Pistons *18/4/16* Rods *7/1/16*  
Connecting rods *7/3/16* Crank shaft *14/3/16* Thrust shaft *11/2/16* Tunnel shafts ✓ Screw shaft *25/5/16* Propeller *27/3/16*  
Stern tube *7/3/16* Steam pipes tested *6/7/16* Engine and boiler seatings *6/1/16* Engines holding down bolts *31/5/16*  
Completion of pumping arrangements *16/8/16* Boilers fixed *31/5/16* Engines tried under steam *16/8/16*  
Main boiler safety valves adjusted *29/7/16* Thickness of adjusting washers *P.P. 1/2" S. 3/16" S.P. 1/4" S. 1/32"*  
Material of Crank shaft *Steel* Identification Mark on Do. *25/5/16* Material of Thrust shaft *Steel* Identification Mark on Do. *25/5/16*  
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. *25/5/16*  
Material of Steam Pipes *Solid drawn Copper & Steel* Test pressure *360 lbs & 540 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 *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 built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. In my opinion this vessel is eligible for the record of L.M.C. 8, 16 fitted for oil fuel over 150°.*

*It is submitted that this vessel is eligible for THE RECORD, + LMCS. 16. F.D.*

*Fitted for oil fuel 8. 16. F.P. above 150°F.*

The amount of Entry Fee ... £ : : When applied for,  
Special ... £ *40.* " : :  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) £ : : *20/17 27/17*

*J.M. J.W.D. 28/8/16.*  
*Charles Cooper & S. Reul.*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. - 1 SEP. 1916*

TUE. 29 JAN. 1918

Assigned *+ L.M.C. 8. 16 J.D.*  
*Fitted for oil fuel 8. 16 F.P. above 150°*



*See Spec to the Builders & Builders at once.*

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