

## REPORT ON MACHINERY.

No. 26826

Received at London Office

Date of writing Report 17<sup>th</sup> Oct 1916 When handed in at Local Office 21<sup>st</sup> Oct 1916 Port of Sunderland 25 OCT. 1916  
 No. in Survey held at Sunderland Date First Survey 30 Nov '15 Last Survey 16<sup>th</sup> Oct 1916  
 Reg. Book. 8 Upon the Machinery of the S.S. Saragossa Number of Visits 35  
 Master Daniels Built at Sunderland By whom built J. Blumer & Co Tons { Gross 3541  
 Engines made at Sunderland By whom made North Eastern Marine Eng Co When made 1916  
 Boilers made at " By whom made " when made 1916  
 Registered Horse Power " Owners Scholfield & Son Ship Co Port belonging to Newcastle  
 Nom. Horse Power as per Section 28 298 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 24", 40", 65" Length of Stroke 42" Revs. per minute 66 Dia. of Screw shaft 13.48 as per rule 13.2 Material of Steel  
 as fitted 13 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 4'-6"  
 Dia. of Tunnel shaft 11.83 as per rule 11.78 Dia. of Crank shaft journals 12.4 as per rule 12 1/2 Dia. of Crank pin 12 1/2 Size of Crank webs 18 1/2 x 7 3/4 Dia. of thrust shaft under  
 collars 12 1/2 Dia. of screw 16-9 Pitch of Screw 17-0 No. of Blades 4 State whether moveable no Total surface 90 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 7 1/2 x 5 x 6 & 7 x 9 x 9 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 of 3 1/2" In Holds, &c. 2 of 3 1/2" in each hold & one  
of 3 1/2" in tunnel well.  
 No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump no 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 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 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 13/7/16 of Stern Tube 29/9/16 Screw shaft and Propeller 29/9/16  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Son  
 Total Heating Surface of Boilers 4628 Is Forced Draft fitted No No. and Description of Boilers 2 Single-ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 14/7/16 No. of Certificate 3345  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 59 sq ft No. and Description of Safety Valves to  
 each boiler 2 direct spring 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 20" Mean dia. of boilers 15'-9 3/8" Length 10'-6" Material of shell plates Steel  
 Thickness 1 3/16" Range of tensile strength 29 7/8 - 33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. c.  
 long. seams Z. r. d. c. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 3/4"  
 Per centages of strength of longitudinal joint 88.2 rivets 86.1 plate Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Horizons Material Steel Outside diameter 50 1/2"  
 Length of plain part top bottom Thickness of plates crown 3 7/16" bottom 3 1/4" Description of longitudinal joint welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 1 3/16" Top 3/4" Bottom 1 5/16"  
 Pitch of stays to ditto: Sides 1 1/2" x 9" Back 2" x 10 1/8" Top 2 1/4" x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lbs  
 Material of stays Steel Diameter at smallest part 2 1/4" Area supported by each stay 21.5 lbs Working pressure by rules 180 lbs End plates in steam space:  
 Material Steel Thickness 1 1/32" Pitch of stays 23" x 20 1/2" How are stays secured d. n. s. w. Working pressure by rules 180 lbs Material of stays Steel  
 Diameter at smallest part 8.29 Area supported by each stay 47.15 Working pressure by rules 183 lbs Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 2 9/32" Greatest pitch of stays 14 1/2" x 10 1/8" Working pressure of plate by rules 182 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 5/8" x 4 5/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10.4"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 192 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9 1/8" x 1 1/2" Length as per rule 28 1/2" Distance apart 12 1/4" Number and pitch of stays in each 2 of 7 1/2"  
 Working pressure by rules 182 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 ✓

W775-0144



IS A DONKEY BOILER FITTED?

SPARE GEAR. State the articles supplied:—

If so, is a report now forwarded? *see Mdb Rpt 938*

*Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, set of feed & bilge pump valves, 1 set of H.P. & I.P. piston rings, a quantity of assorted bolts nuts & iron, propeller, propeller shaft & minor parts.*

The foregoing is a correct description  
FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD

*Geo. D. New.*

Manager. Manufacturer.

Dates of Survey while building  
During progress of work in shops -- *1915 Nov. 30. Jan. 25. Feb. 3. Mar. 2. 7. 14. 23. 27. 30. Apr. 4. 6. 11. 13. 18. 28. May 2. 4. 12. 18. 26. 30. 31. Jun. 1. 2. 6. 7. 12. 13. 23. 26. 29.*  
During erection on board vessel -- *Jul. 1. 4. 5. 6. 7. 10. 12. 13. 14. 19. 20. Aug. 2. 8. 11. 24. 31. Sep. 1. 9. 20. 25. 29. Oct. 5. 6. 10. 16.*  
Total No. of visits *(55)*

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

Dates of Examination of principal parts—Cylinders *10/7/16* Slides *13/6/16* Covers *10/7/16* Pistons *7/7/16* Rods *13/7/16*  
Connecting rods *13/7/16* Crank shaft *6/6/16* Thrust shaft *26/5/16* Tunnel shafts *26/6/16* Screw shaft *6/7/16* Propeller *19/7/16*  
Stern tube *30/5/16* Steam pipes tested *20-29/9/16* Engine and boiler seatings *13/7/16* Engines holding down bolts *20/9/16*  
Completion of pumping arrangements *6/10/16* Boilers fixed *20/9/16* Engines tried under steam *6/10/16*  
Main boiler safety valves adjusted *6/10/16* Thickness of adjusting washers *P. A 1/2" F. 1/2" S. A 1/16" F. 1/2"*  
Material of Crank shaft *Steel* Identification Mark on Do. *28/6/16* Material of Thrust shaft *Steel* Identification Mark on Do. *28/6/16*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *26/6/16* Material of Screw shafts *Steel* Identification Marks on Do. *12/7/16*  
Material of Steam Pipes *Lap welded 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? *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. 10, 16.*

It is submitted that  
this vessel is eligible for  
THE RECORD + L.M.C. 10.16.

*JWD.*  
*25/10/16*

*APR 2*

The amount of Entry Fee ... £ *2* : :  
Special ... £ *34* : *18* :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, *24 OCT 1916*  
When received, *9.11.1916*

Committee's Minute *FRI. 27 OCT. 1916*

Assigned *+ L.M.C. 10.16*

*Charles Cooper*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Lloyd's Register  
Foundation

MACHINERY CERTIFICATE  
WRITTEN.