

# REPORT ON MACHINERY.

No. 27401  
TUE. JAN. 7-1919

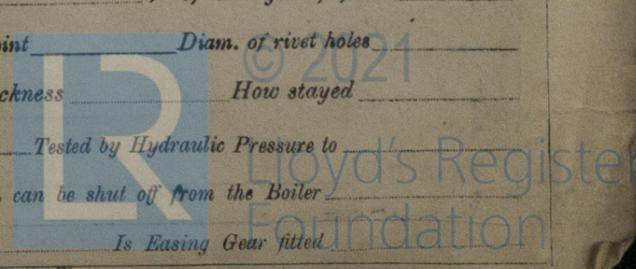
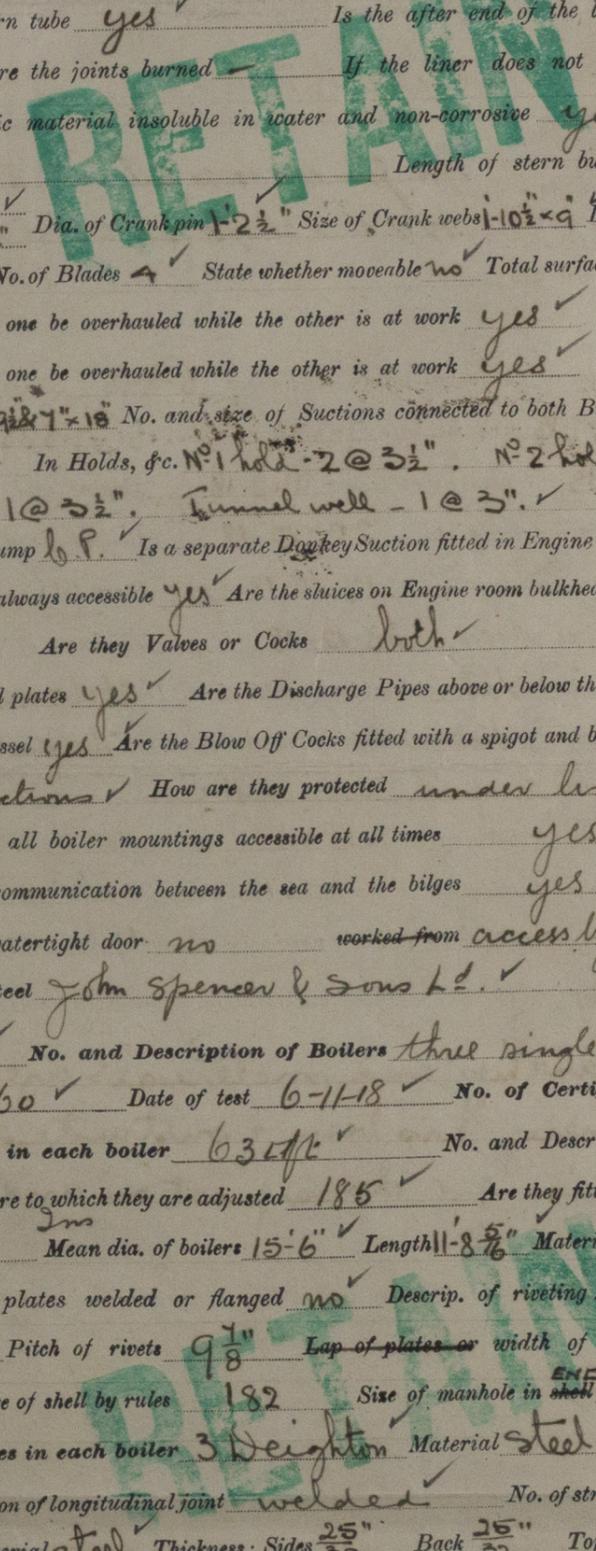
Received at London Office

Date of writing Report 6-1-1919 When handed in at Local Office 6-1-1919 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 17 June 1918 Last Survey 6-1-1919  
 Reg. Bool. 488 on the new steel S/S "WAR MERLIN" (Number of Visits 53) Tons { Gross 5175 Net 5257  
 Master Griffiths Built at Sunderland By whom built Short Brothers S/S No. 402 When built 1919  
 Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd (No 2362) when made 1919  
 Boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd (No 2362) when made 1919  
 Registered Horse Power \_\_\_\_\_ Owners The Shipping Controller (E.C. Thom) Port belonging to London  
 Nom. Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27"-44"-73" Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft 14.7 as per rule 15.39 Material of screw shaft Forged steel  
 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 no 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 yes If two  
 liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 5-0 1/2"  
 Dia. of Tunnel shaft 13.32 as per rule 14.12 Dia. of Crank shaft journals 14.12 as per rule 14.12 Dia. of Crank pin 1-2 1/2" Size of Crank webs 10 1/2" x 9" Dia. of thrust shaft under  
 collars 1-2 3/4" Dia. of screw 1-7/8" Pitch of Screw 16-6" No. of Blades 4 State whether moveable no Total surface 98.2  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 2'-0" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 2'-0" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 10 1/2" & 14" x 24" 2 @ 9 1/2" x 7" = 18" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 @ 3 1/2" In Holds, &c. No 1 hold - 2 @ 3 1/2" No 2 hold - 2 @ 3 1/2"  
lower bunker 2 @ 3 1/2" No 3 hold 2 @ 3 1/2" No 4 hold 1 @ 3 1/2" Tunnel well - 1 @ 3"  
 No. of Bilge Injections 1 sizes 13" Connected to condenser, or to circulating pump lo p. 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 none  
 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 forward hold suction How are they protected under timber boards  
 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 worked from access by trunk from deck.

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel John Spencer & Sons Ltd.  
 Total Heating Surface of Boilers 7668 sq ft Is Forced Draft fitted yes No. and Description of Boilers three single ended marine  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 6-1-18 No. of Certificate 3508  
 Can each boiler be worked separately yes Area of fire grate in each boiler 63 sq ft No. and Description of Safety Valves to  
 each boiler two direct opening Area of each valve 9.6 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'-8" Mean dia. of boilers 15'-6" Length 11'-8 5/8" Material of shell plates steel  
 Thickness 1 1/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR  
 long. seams DRS. TR Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 9 7/8" Lap of plates or width of butt straps 1'-8 1/2"  
 Per centages of strength of longitudinal joint rivets 85.5 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"  
 plate 86.4 No. and Description of Furnaces in each boiler 3 Deighton Material steel Outside diameter 4'-2 3/16"  
 Length of plain part top 19" Thickness of plates crown 3/32" Description of longitudinal joint welded No. of strengthening rings \_\_\_\_\_  
 bottom 3/32" Working pressure of furnace by the rules 188 Combustion chamber plates: Material steel Thickness: Sides 25/32" Back 25/32" Top 25/32" Bottom 25/32"  
 Pitch of stays to ditto: Sides 10 3/8" x 10 3/8" Back 11 1/8" x 9 1/2" Top 10 3/8" x 10 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180  
 Material of stays steel Area at smallest part 2.360" Area supported by each stay 11260" Working pressure by rules 187 End plates in steam space:  
 Material steel Thickness 1 1/32" Pitch of stays 21" x 21 1/2" How are stays secured DR & W Working pressure by rules 187 Material of stays steel  
 Area at smallest part 7980" Area supported by each stay 4560" Working pressure by rules 182 Material of Front plates at bottom steel  
 Thickness 3/32" Material of Lower back plate steel Thickness 1/8" Greatest pitch of stays 13 3/4" x 9 1/2" Working pressure of plate by rules 190  
 Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 1/8" Material of tube plates steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 9 1/16"  
 Pitch across wide water spaces 1'-15 1/8" Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 2 @ 9 1/2" x 7/8" Length as per rule 35 1/2" Distance apart 10 3/8" Number and pitch of stays in each 2 @ 10 3/8"  
 Working pressure by rules 180 Steam dome: description of joint to shell none % 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 \_\_\_\_\_



W460-0089

IS A DONKEY BOILER FITTED? *no* ✓

If so, is a report now forwarded? -

SPARE GEAR. State the articles supplied: - *Two connecting rod top and bottom end bolts & nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, iron and bolts of various sizes, one propeller.*

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO<sup>Y</sup> L<sup>D</sup>

*Geo & Weir*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *1918. Jun 7, 10, 24, 28 Jul 1, 2, 15, 16 Aug 2, 7, 8, 12, 13, 14, 20, 28 Sep 3, 6, 11, 13, 16, 17, 20 Oct 1, 4, 9, 10, 14, 15*  
{ During erection on board vessel -- } *17, 18, 21, 23, 25, 29, 31 Nov. 6, 15, 25, 26, 27, 28 Dec 2, 3, 6, 9, 10, 16, 20, 23, 27 Jan 6*  
Total No. of visits *(53)*

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

Dates of Examination of principal parts—Cylinders *13-8-18* Slides *7-8-18* Covers *16-8-18* Pistons *16-8-18* Rods *28-8-18*  
Connecting rods *16-7-18* Crank shaft *7-8-18* Thrust shaft *7-8-18* Tunnel shafts *11-9-18* Screw shaft *18-10-18* Propeller *2-9-18*  
Stern tube *30-9-18* Steam pipes tested *11-12-18* Engine and boiler seatings *9-10-18* Engines holding down bolts *9-12-18*  
Completion of pumping arrangements *20-12-18* Boilers fixed *6-12-18* Engines tried under steam *23-12-18*  
Completion of fitting sea connections *17-10-18* Stern tube *25-11-18* Screw shaft and propeller *27-11-18*  
Main boiler safety valves adjusted *23-12-18* Thickness of adjusting washers *Port boiler - both 1/2"; Centre boiler - P 1/2 5/16"; Starboard boiler - both 1/2"*  
Material of Crank shaft *1. Steel* Identification Mark on Do. *760611.W.C.* Material of Thrust shaft *1. Steel* Identification Mark on Do. *760611.W.C.*  
Material of Tunnel shafts *1. Steel* Identification Marks on Do. *760611.W.C.* Material of Screw shafts *1. Steel* Identification Marks on Do. *760611.W.C.*  
Material of Steam Pipes *Lapwelded wrought iron* Test pressure *540 pounds per sq. in.*  
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 *yes* ✓ If so, state name of vessel *Standard "B" Type*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The workmanship and materials are good. The machinery has been constructed under special survey and is eligible in my opinion for classification and the record + LMC 1.19*

It is submitted that this vessel is eligible for THE RECORD. + LMC 1.19. F.D.

*J.W.D.* 8/1/19  
*A.R.S.*  
*L.H. Davis*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : : When applied for,  
Special ... £ *116. 16. 5* 3-1-19-19  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When received, *16. 1. 19* *R.B.W.* *17/1/19*

Committee's Minute  
Assigned *+ LMC 1.19*  
*F.D.* MACHINERY CERTIFICATE

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

