

# REPORT ON MACHINERY.

No. 25608

Received at London Office

TUE. MAR. 4 - 1913

Date of writing Report 27-2-1913 When handed in at Local Office 1-3-1913 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 2 April 1913 Last Survey 27-2-1913  
 Reg. Book. 325 on the steel S/S "SHARON" (Number of Visits)  
 Master J. Enos Built at Sunderland By whom built John Spencer & Sons Ltd (S/S No. 147) Tons { Gross 2278  
 Engines made at Sunderland By whom made George Blanks Ltd (No. 961) when made 1913 Net 1389  
 Boilers made at Sunderland By whom made George Blanks Ltd (No. 961) when made 1913  
 Registered Horse Power Owners Ottoman Line Ltd Port belonging to Newport, Mon.  
 Nom. Horse Power as per Section 28 222 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 21" 35" 57" Length of Stroke 39" Revs. per minute 65 Dia. of Screw shaft 12" Material of screw shaft 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 no If two  
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 4'-0"  
 Dia. of Tunnel shaft 10.50" as per rule 10.9" Dia. of Crank shaft journals 11.1" as per rule 11.3" Dia. of Crank pin 11.8" Size of Crank webs 10.5" x 7.5" Dia. of thrust shaft under  
 collars 11.3" Dia. of screw 15.0" Pitch of Screw 16'-0" No. of Blades 4 State whether moveable no Total surface 69 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines two Sizes of Pumps 6 1/2" x 6" - 3 feet No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two @ 2 3/4" and one @ 4" In Holds, &c. Fore hold; - two @ 2 3/4" after hold; -  
four @ 2 3/4" Tunnel well; - one @ 2 3/4"  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes. 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 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 for hold sections. How are they protected under wood casing.  
 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 13-1-13 of Stern Tube 17-1-13 Screw shaft and Propeller 10-2-13  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel John Spencer & Sons Ltd & Gewerkschaft Deutscher Kaiser  
 Total Heating Surface of Boilers 3463 sq ft Is Forced Draft fitted no No. and Description of Boilers Two single ended marine  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 3-12-12 No. of Certificate 3073  
 Can each boiler be worked separately yes Area of fire-grate in each boiler 52 sq ft No. and Description of Safety Valves to  
 each boiler two direct spring Area of each valve 7.06 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 18" Mean dia. of boilers 13'-6" Length 10'-6" Material of shell plates steel  
 Thickness 1 1/16" Range of tensile strength 29 1/2 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams WR  
 long. seams WRBSTR Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 6 7/8" Lap of plates on width of butt straps 16"  
 Per centages of strength of longitudinal joint rivets 90 Working pressure of shell by rules 185 Size of manhole in shell 16" x 13"  
 plate 84.5 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3'-3 3/4"  
 Length of plain part top 6'-2 9/16" bottom 5'-11" Thickness of plates crown 3/16" bottom 3/16" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 180 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"  
 Pitch of stays to ditto: Sides 8 3/4" x 10 1/8" Back 9 1/4" x 9 1/8" Top 8 3/8" x 10 1/2" If stays are fitted with nuts or riveted heads nuts in recess Working pressure by rules 181  
 Material of stays steel Diameter at smallest part 2.03 sq in Area supported by each stay 110 sq in Working pressure by rules 182 End plates in steam space:  
 Material steel Thickness 1 3/32" Pitch of stays 18" x 22" How are stays secured WR Working pressure by rules 182 Material of stays steel  
 Diameter at smallest part 6.49 sq in Area supported by each stay 351 Working pressure by rules 192 Material of Front plates at bottom steel  
 Thickness 1 3/16" Material of Lower back plate steel Thickness 3/32" Greatest pitch of stays 15" x 9 1/4" Working pressure of plate by rules 182  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 10"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules Back- 204 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 20 7/8" x 4 1/2" Length as per rule 2'-4 3/4" Distance apart 10 1/2" Number and pitch of stays in each 2 @ 8 3/8"  
 Working pressure by rules 181 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

W768-0041

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety Valves \_\_\_\_\_  
 No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 If fitted with casing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_  
 Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_  
 Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

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

The foregoing is a correct description,  
**FOR GEORGE CLARK, LIMITED.**

Manufacturer of the Engines & Boilers.

*W. G. Bruce*

Dates of Survey while building: During progress of work in shops -- 1912 Apr. 2, 29 May 7, 9, 17 Jun 5, 11, 13, 21 Jul 12, 19 Aug 23 Sept 20 Oct 1, 11, 14, 17, 20  
 During erection on board vessel --- Nov 12, 14 Dec 5, 31 Jan 8, 10, 13, 17 Feb 6, 7, 10, 12, 13, 17, 18, 25, 27  
 Total No. of visits (35) Is the approved plan of main boiler forwarded herewith yes  
 " " " donkey " " " none

Dates of Examination of principal parts—Cylinders 20-9-12 Slides 1-10-12 Covers 11-10-12 Pistons 7-5-12 Rods 12-11-12  
 Connecting rods 21-6-12 Crank shaft 19-7-12 Thrust shaft 19-7-12 Tunnel shafts 11-10-12 Screw shaft 10-1-13 Propellers 19-11-12  
 Stern tube 8-1-13 Steam pipes tested 13-2-13 Engine and boiler seatings 13-1-13 Engines holding down bolts 17-2-13  
 Completion of pumping arrangements 25-2-13 Boilers fixed 13-2-13 Engines tried under steam 18-2-13  
 Main boiler safety valves adjusted 18-2-13 Thickness of adjusting washers Port 13/16" - P 3/8" S 3/8" full; Slide 1 1/2" P 1/2" S 3/8" full.  
 Material of Crank shaft 2 steel Identification Mark on Do. 4686 PA Material of Thrust shaft 9 steel Identification Mark on Do. 3851 HK  
 Material of Tunnel shafts 2 steel Identification Marks on Do. 3853 HK, 3870 HK, 3932 HK Material of Screw shafts 9 steel Identification Marks on Do. 3852 HK  
 Material of Steam Pipes Solid drawn copper 40416 Test pressure 400 lbs per square inch.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The materials and workmanship are good  
 The machinery has been made under special survey and is eligible in my opinion for classification and the record. + LMC 2.13

It is submitted that this vessel is eligible for THE RECORD + LMC 2.13.

*J.W.D.*  
 4/3/13  
*J.P.R.*

The amount of Entry Fee .. £ 2 : : When applied for.  
 Special .. £ 31. 2 : : 9 3 1913  
 Donkey Boiler Fee .. £ : : :  
 Travelling Expenses (if any) £ : : : 5/31/13

**Heurisle Davis.**  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. MAR. 7--1913  
 assigned + LMC 2.13

