

# REPORT ON MACHINERY.

No. 39326

Date of this Report 10 When handed in at Local Office 7-11-19 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 17<sup>th</sup> Sept. 1918 Last Survey 24<sup>th</sup> Oct. 1919  
 Reg. Book. on the Main Engines No 2 F (Tobacco Plan, Sons Vancouver B.C.) (Number of Visits 26)  
 Master Built at By whom built When built  
 Engines made at Glasgow By whom made D. W. Henderson, G. L. A. when made 1919  
 Boilers made at By whom made when made  
 Registered Horse Power Owners Port belonging to  
 Net Horse Power as per Section 28 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

**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 Dia. of Screw shaft 14.7 Material of screw shaft  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube - Is the after end of the liner made water tight in the propeller boss - 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 -  
 Dia. of Tunnel shaft 13.3 as per rule 13.9 as fitted Dia. of Crank shaft journals 14.5 as per rule 14.5 as fitted Dia. of Crank pin 14.5 Size of Crank webs 9x28 Dia. of thrust shaft under collars - Dia. of screw - Pitch of Screw - No. of Blades - State whether moceable - Total surface -  
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work -  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work -  
 No. of Donkey Engines - Sizes of Pumps - No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room - In Holds, &c. -  
 No. of Bilge Injections - sizes - Connected to condenser, or to circulating pump - Is a separate Donkey Suction fitted in Engine room & size -  
 Are all the bilge suction pipes fitted with roses - Are the roses in Engine room always accessible - Are the sluices on Engine room bulkheads always accessible -  
 Are all connections with the sea direct on the skin of the ship - Are they Valves or Cocks -  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates - Are the Discharge Pipes above or below the deep water line -  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel - Are the Blow Off Cocks fitted with a spigot and brass covering plate -  
 What pipes are carried through the bunkers - How are they protected -  
 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 -  
 Dates of examination of completion of fitting of Sea Connections - of Stern Tube - Screw shaft and Propeller -  
 Is the Screw Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

**MILERS &c.**—(Letter for record -) Manufacturers of Steel -  
 Total Heating Surface of Boilers - Is Forced Draft fitted - No. and Description of Boilers -  
 Working Pressures - Tested by hydraulic pressure to - Date of test - No. of Certificate -  
 Can each boiler be worked separately - Area of fire grate in each boiler - No. and Description of Safety Valves to each boiler -  
 Area of each valve - Pressure to which they are adjusted - Are they fitted with easing gear -  
 Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers - Length - Material of shell plates -  
 Thickness - Range of tensile strength - Are the shell plates welded or flanged - Descrip. of riveting: cir. seams -  
 long. seams - Diameter of rivet holes in long. seams - Pitch of rivets - Lap of plates or width of butt straps -  
 Per centages of strength of longitudinal joint - Working pressure of shell by rules - Size of manhole in shell -  
 Size of compensating ring - No. and Description of Furnaces in each boiler - Material - Outside diameter -  
 Length of - part - top - Thickness of plates - crown - Description of longitudinal joint - No. of strengthening rings -  
 bottom - bottom - Working pressure of shell by rules -  
 Working pressure of furnace by the rules - Combustion chamber plates: Material - Thickness: Sides - Back - Top - Bottom -  
 Pitch of stays - ditto: Sides - Back - Top - If stays are fitted with nuts or riveted heads - Working pressure by rules -  
 Material of stays - Diameter at smallest part - Area supported by each stay - Working pressure by rules - End plates in steam space: -  
 Material - Thickness - Pitch of stays - How are stays secured - Working pressure by rules - Material of stays -  
 Diameter at smallest part - Area supported by each stay - Working pressure by rules - Material of Front plates at bottom -  
 Thickness - Material of Lower back plate - Thickness - Greatest pitch of stays - Working pressure of plate by rules -  
 Diameter of tubes - Pitch of tubes - Material of tube plates - Thickness: Front - Back - Mean pitch of stays -  
 Pitch across wide water spaces - Working pressures by rules - Girders to Chamber tops: Material - Depth and -  
 thickness of girder at centre - Length as per rule - Distance apart - Number and pitch of stays in each -  
 Working pressure by rules - Superheater or Steam chest; how connected to boiler - 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 -  
 Pitch of rivets - Working pressure of shell by rules - Diameter of flue - Material of flue plates - Thickness -  
 fitted 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 -

W1335-0110

**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:— 2 Top end bolts & nuts 2 bottom end bolts & nuts 6 coupling bolts & nuts, 2 main bearing bolts & nuts, 1 set of feed and bilge pump valves, Bolts & nuts assorted Iron and other articles as required by Specification

The foregoing is a correct description,

For DAVID & W. HENDERSON & CO. LTD.

Manufacturer.

*S. J. Patrick* DIRECTOR

Dates of Survey while building: During progress of work in shops -- 1918 Sept. 14, 20, 23, 24. Oct. 1, 8, 9, 14, 29. Nov. 20, 1919. Jan. 9, 29. Mar. 17. Apr. 8, 30. May 1, 2, 28. June 4, 10.  
 During erection on board vessel -- July 8, Sept. 12, Oct. 10, 15, 22, 24.  
 Total No. of visits 26.

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Is the approved plan of donkey boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders 8.4.19 Slides 8.4.19 Covers 8.4.19 Pistons 4.6.19 Rods 4.6.19

Connecting rods 8.7.19 Crank shaft 1.5.19 Thrust shaft — Tunnel shafts — Screw shaft — Propeller —

Stern tube — Steam pipes tested — Engine and boiler seatings — Engines holding down bolts —

Completion of pumping arrangements — Boilers fixed — Engines tried under steam —

Main boiler safety valves adjusted — Thickness of adjusting washers —

Material of Crank shaft *Steel* Identification Mark on Do. *H.C. 1.5.19* Material of Thrust shaft — Identification Mark on Do. —

Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts — Identification Marks on Do. —

Material of Steam Pipes — Test pressure —

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *These main engines have been constructed under special survey in accordance with the Rules and approved plans materials and workmanship are good.*

*The engines from after end of crankshaft up to and including triple branch piece on engine stop valve have now been despatched to Messrs J. Cougill & Sons Vancouver B.C.*

*The work covered by the Specifications has been satisfactorily carried out and completed with the following exceptions:— (1) The cylinders and casings have not been tested by hydraulic pressure (2) The Contraflo attachment for the Condenser, which is being supplied by the Contraflo Co, has not been fitted into place. The makers state arrangements are being made for this work to be completed on arrival of the engines in Canada*

The amount of Entry Fee .. £	:	:	When applied for,
Special .. £ 50.	:	:	.....19.....
Donkey Boiler Fee .. £	:	:	When received,
Travelling Expenses (if any) £	:	:	10/21/19

*Jac Barstow*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW 11 NOV 1919**

Assigned *No action*



Certificates (if required) to be sent to

*M.C. 7-11-19*