

# REPORT ON MACHINERY.

No. 39425.

Received at London Office

pt. 4.

of writing Report 4<sup>th</sup> Dec 1919 When handed in at Local Office 6/12/19 Port of Glasgow WED. DEC. 10. 1919  
 in Survey held at Glasgow Date, First Survey 10/2/19 Last Survey 3<sup>rd</sup> Dec 1919  
 Book. on the "FRITHJOF EIDE" (Number of Visits) #5  
 Master A. S. Austad Built at Campbeltown By whom built Campbeltown S. B.C. No 113 When built 1919  
 Engines made at Glasgow By whom made Ross & Duncan Engs No 1058 when made 1919  
 Makers made at Glasgow By whom made Ross & Duncan Blos No 1579/80 when made 1919  
 Registered Horse Power Owners (Engs) B. Pederson & Son Port belonging to Haugesund  
 n. Horse Power as per Section 28 142 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

919

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 of Cylinders 18" x 27 1/2" x 45" Length of Stroke 33 Revs. per minute 84 Dia. of Screw shaft as per rule 9.8 Material of screw shaft S  
 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  
 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  
 are fitted, is the shaft lapped or protected between the liners Length of stern bush 39 1/2"  
 of Tunnel shaft as per rule 8.84 Dia. of Crank shaft journals as per rule 9.28 Dia. of Crank pin 9 1/2 Size of Crank webs 17 1/2 x 6 1/8 Dia. of thrust shaft under  
 bars 9 3/8 Dia. of screw 12'-1" Pitch of Screw 13'-6" No. of Blades 4 State whether moveable no Total surface 52 1/2  
 of Feed pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes  
 of Bilge pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes  
 of Donkey Engines 2 Sizes of Pumps Two 6" x 4 1/2" x 6" Ballast 7 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 3 @ 2 1/4 In Holds, &c. Fore Hold 2 @ 2 1/4. 1 after Hold @ 2 1/2  
Tunnel well @ 2 1/2  
 of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes  
 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  
 all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 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  
 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  
 at pipes are carried through the bunkers none How are they protected ✓  
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes  
 of examination of completion of fitting of Sea Connections Greenock Rpt of Stern Tube Greenock Rpt Screw shaft and Propeller Greenock Rpt  
 the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Deck

MAKERS, &c.—(Letter for record S) Manufacturers of Steel D. Colville & Sons  
 Heating Surface of Boilers 2386 1/2 Is Forced Draft fitted no No. and Description of Boilers Two Single Ended Multitubular  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 31-10-19 No. of Certificate 14964  
 each boiler be worked separately Yes Area of fire grate in each boiler 39 1/2 No. and Description of Safety Valves to  
 boiler Two Spring loaded Area of each valve 3.96 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes  
 least distance between boilers as per rule and bunkers as per rule 10" INT Mean dia. of boilers 11'-6" Length 10'-6" Material of shell plates S  
 thickness 3/32 Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams L.D.R  
 seams T.R. D. Strap Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 6 7/8" width of butt straps 17 1/2"  
 be given percentages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"  
 of compensating ring 7 x 3/32 No. and Description of Furnaces in each boiler 2 Corrugated Material S Outside diameter 46 1/4"  
 length of plain part top Thickness of plates bottom 3 9/16 Description of longitudinal joint weld No. of strengthening rings none  
 working pressure of furnace by the rules 190 Combustion chamber plates: Material S Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1/2"  
 of stays to ditto: Sides 8 3/4 x 7 3/4 Back 8 3/4 x 8 1/4 Top 8 1/2 x 7 3/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 187  
 Water Capacity of stays S Diameter at smallest part 1.76 Area supported by each stay 72 1/2 Working pressure by rules 217 End plates in steam space:  
 material S Thickness 3/32 Pitch of stays 15 1/2 x 15 1/8 How are stays secured D. nuts Working pressure by rules 183 Material of stays S  
 at smallest part 4' 4 1/2 Area supported by each stay 256 Working pressure by rules 187 Material of Front plates at bottom S  
 thickness 27/32 Material of Lower back plate S Thickness 27/32 Greatest pitch of stays 13 1/2 x 8 3/4 Working pressure of plate by rules 190  
 diameter of tubes 3 1/4 Pitch of tubes 4 1/4 x 4 3/8 Material of tube plates S Thickness: Front 27/32 Back 3/4 Mean pitch of stays 9.9  
 across wide water spaces 14 Working pressures by rules 187 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 7 3/4 x 1 3/4 Length as per rule 30 7/8 Distance apart 8 1/2" Number and pitch of stays in each 3 @ 7 3/4"  
 working pressure by rules 187 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked  
 rately ✓ 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 ✓  
 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 ✓

Lloyd's Register Foundation

W467-0262

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 \_\_\_\_\_ Rivets \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ 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 each of top bottom end & main bearing bolts & nuts  
 1 set of coupling bolts & nuts, 1 set each of feed & bilge pump valves, assorted bar iron  
 nuts & bolts

The foregoing is a correct description,  
 Ross Duncan Manufacturer.

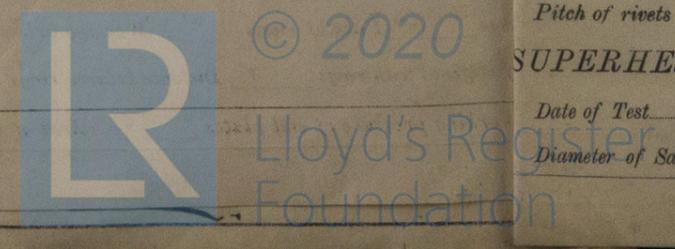
Dates of Survey while building: During progress of work in shops - 1919 Feb 10-13, Mar 25, Apr 12-30, May 21, 23, 26, 29, June 11, 16, 19, 24, 26, Aug 6, 12, 14, 22, Sept 2, 4, 8, 9, 10, 12  
 During erection on board vessel - 16, 18, 24, 30, Oct 2, 6, 14, 20, 23, 27, 30, 31, Nov 3, 10, 17, 18, 25, 27, Dec 1, 3  
 Total No. of visits 45

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " " \_\_\_\_\_  
 Dates of Examination of principal parts—Cylinders 22-8-19 Slides 18-9-19 Covers 18-9-19 Pistons 12-9-19 Rods 18-9-19  
 Connecting rods 9-9-19 Crank shaft 2-9-19 Thrust shaft 2-9-19 Tunnel shafts 4-9-19 Screw shaft 16-9-19 Propeller 8-9-19  
 Stern tube 12-9-19 Steam pipes tested 30-10-19, 27-11-19 Engine and boiler seatings \_\_\_\_\_ Engines holding down bolts 17-11-19  
 Completion of pumping arrangements 3-12-19 Boilers fixed 25-11-19. Engines tried under steam 3-12-19  
 Main boiler safety valves adjusted 1-12-19 Thickness of adjusting washers P. 3/32 P.I. 3/32 S.I. 5 3/16 P.Y. 1/4 S.V.  
 Material of Crank shaft \_\_\_\_\_ Identification Mark on Do. 2-9-19 P.M.S. Material of Thrust shaft \_\_\_\_\_ Identification Mark on Do. 2-9-19 P.M.S.  
 Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. 4-9-19 P.M.S. Material of Screw shafts \_\_\_\_\_ Identification Marks on Do. 16-9-19 P.M.S.  
 Material of Steam Pipes Sealed Copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 These Engines Boilers have been built under Special Survey and in accordance with the Rules, the materials and workmanship are sound and good. They have been fitted on board in an efficient manner, tried under working conditions and found satisfactory and are eligible in my opinion to be classed with record of L.M.C. 12-19.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12-19. J.W.D. 13/12/19. J.R.R.

The amount of Entry Fee .. £ 2 : 0 :  
 Special .. £ 21 : 6 :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 9.12.19  
 When received, 11.12.19  
 Committee's Minute GLASGOW 9-DEC 1919  
 Assigned + LMC 12, 19.



GLASGOW

Date of writing \_\_\_\_\_  
 No. in Survey Reg. Book. \_\_\_\_\_  
 Master \_\_\_\_\_  
 Engines made \_\_\_\_\_  
 Boilers made \_\_\_\_\_  
 Registered \_\_\_\_\_  
 Nom. Horse Power \_\_\_\_\_  
 ENGINES  
 Dia. of Cylinders \_\_\_\_\_  
 Is the screw \_\_\_\_\_  
 in the propeller \_\_\_\_\_  
 between the blades \_\_\_\_\_  
 liners are fitted \_\_\_\_\_  
 Dia. of Tunnel \_\_\_\_\_  
 collars \_\_\_\_\_  
 No. of Feed pipes \_\_\_\_\_  
 No. of Bilge pumps \_\_\_\_\_  
 No. of Donkey Engines \_\_\_\_\_  
 In Engine Room \_\_\_\_\_  
 No. of Bilge Inlets \_\_\_\_\_  
 Are all the bilge \_\_\_\_\_  
 Are all connect \_\_\_\_\_  
 Are they fixed \_\_\_\_\_  
 Are they each fi \_\_\_\_\_  
 What pipes are \_\_\_\_\_  
 Are all Pipes, \_\_\_\_\_  
 Are the Bilge \_\_\_\_\_  
 Is the Screw \_\_\_\_\_  
 BOILERS,  
 Total Heating \_\_\_\_\_  
 Working Pressure \_\_\_\_\_  
 Can each boiler \_\_\_\_\_  
 each boiler \_\_\_\_\_  
 Smallest distance \_\_\_\_\_  
 Thickness \_\_\_\_\_  
 long, seams \_\_\_\_\_  
 Per centages of \_\_\_\_\_  
 Size of compens \_\_\_\_\_  
 Length of plain \_\_\_\_\_  
 Working pressure \_\_\_\_\_  
 Pitch of stays to \_\_\_\_\_  
 Material of stay \_\_\_\_\_  
 Material \_\_\_\_\_  
 Area at small \_\_\_\_\_  
 Thickness \_\_\_\_\_  
 Diameter of tub \_\_\_\_\_  
 Pitch across \_\_\_\_\_  
 thickness of gir \_\_\_\_\_  
 Working pressure \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Pitch of rivets \_\_\_\_\_  
 SUPERHEATED \_\_\_\_\_  
 Date of Test \_\_\_\_\_  
 Diameter of Saf \_\_\_\_\_