

REPORT ON MACHINERY.

No. 16283
WED. JUL. 10. 1912

Received at London Office

Date of writing Report 29 June 1912 When handed in at Local Office 2/7 1912 Port of Greenock

No. in Survey held at Greenock Date, First Survey 25 July 1911 Last Survey 1st July 1912
Reg. Book. on the "S.S. AGNES DUNCAN" (Number of Visits 8)

Master Built at Port Glasgow By whom built R. Duncan & Co. Ltd. When built 1912
Tons Gross 2512 Net 1472

Engines made at Greenock By whom made John G. Kincaid & Co. Ltd. when made 1912

Boilers made at Greenock By whom made John G. Kincaid & Co. Ltd. when made 1912

Registered Horse Power _____ Owners _____ Port belonging to _____

Nom. Horse Power as per Section 28 263 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 22-36-59 Length of Stroke 39 Revs. per minute 75 Dia. of Screw shaft 12.0 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 Yes 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 _____ Length of stern bush 14.0

Dia. of Tunnel shaft 10.84 Dia. of Crank shaft journals 11.4 Dia. of Crank pin 11.2 Size of Crank webs 14x14 Dia. of thrust shaft under collars 11.2 Dia. of screw 14.6 Pitch of Screw 15.6 No. of Blades 4 State whether moceable No Total surface 70 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3.2 Stroke 22 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3.2 Stroke 22 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four Sizes of Pumps 8x9x10, 8x5x8, 5x2x5 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One: 3.2 dia. In Holds, &c. main Hold 2-3.2 dia.

Bunker well 1-3.2 dia.

No. of Bilge Injections 1 sizes 6.2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes: 3.2

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 Yes

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 14/5/12 of Stern Tube 14/5/12 Screw shaft and Propeller 14/5/12

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from _____

BOILERS, &c.—(Letter for record £ Manufacturers of Steel L. Dunlop & Co. Ltd.

Total Heating Surface of Boilers 4428 Is Forced Draft fitted No No. and Description of Boilers 2: Cylindrical mult Single

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 3/5/12 No. of Certificate 1052

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 2: Direct Spring Area of each valve 4.06 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 about 14" Mean dia. of boilers 15'0" Length 11'0" Material of shell plates Steel

Thickness 1.32 Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Double long. seams Butt Strap

Diameter of rivet holes in long. seams 14" Pitch of rivets 8.2" 4.2" Lap of plates or width of butt straps 18.2"

Per centages of strength of longitudinal joint rivets 87.6 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 33.2 x 28.2 x 1.2 No. and Description of Furnaces in each boiler 3: Deightons Material Steel Outside diameter 48.4"

Length of plain part 4.23 Thickness of plates 1.76 Description of longitudinal joint weld No. of strengthening rings None

Working pressure of furnace by the rules 183 lbs Combustion chamber plates: Material Steel Thickness: Sides 3.2 Back 2.1 Top 3.2 Bottom 3.4

Pitch of stays to ditto: Sides 7.2 x 8.2 Back 9 x 8.2 Top 9 x 7.2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181 lbs

Material of stays Steel Diameter at smallest part 1.38 Area supported by each stay 65 Working pressure by rules 181 lbs End plates in steam space: Material Steel Thickness 1.76 Pitch of stays 18 x 20 How are stays secured Washers Working pressure by rules 184 lbs Material of stays Steel

Diameter at smallest part 2.36 Area supported by each stay 360 Working pressure by rules 183 lbs Material of Front plates at bottom Steel Thickness 1.76 Material of Lower back plate Steel Thickness 1.76 Greatest pitch of stays 13.2 x 8.2 Working pressure of plate by rules 202 lbs

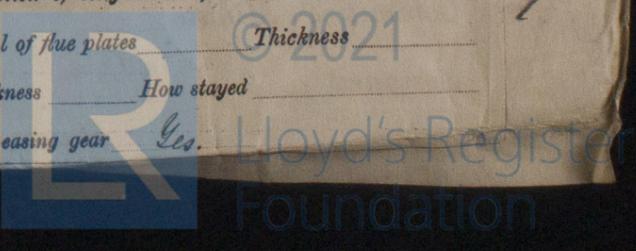
Diameter of tubes 3.4 Pitch of tubes 4.2 x 4.2 Material of tube plates Steel Thickness: Front 1.76 Back 3.4 Mean pitch of stays 10.3

Pitch across wide water spaces 13.2 Working pressures by rules 181 lbs 189 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 x 1.58 Length as per rule 32.1 Distance apart 9 Number and pitch of stays in each 3: 7.2

Working pressure by rules 222 lbs Superheater or Steam chest; how connected to boiler Through the pipes Can the superheater be shut off and the boiler worked separately Yes 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 7.06 Are they fitted with easing gear Yes

621-0023



VERTICAL DONKEY BOILER— Manufacturers of Steel.

No. one Description Cochran patent
 Made at Araon By whom made Cochran 167 Araon When made 1911 Where fixed on deck
 Working pressure 100 lb Tested by hydraulic pressure to 200 lb Date of test 20/10/11 No. of Certificate 11249 Fire grate area 14 1/2 Description of Safety Valves Direct Spring No. of Safety Valves 1 Area of each 706 sq in Pressure to which they are adjusted 105 lb Date of adjustment 25/6/11
 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No 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 main Bearing Bolts, 2 Crank pin Bolt nuts, 2 Crank Bolt nuts, 2 lub Coupling Bolt nuts, 1 set Feed pump valves, 1 set Bilge pump valves, 13 Jack Ring Bolts, 6 Boiler tubes, 12 Condenser tubes, 1 set Escape valve spring, 1 safety valve spring, 3 Bar Round Iron, 3 Bar flat Iron, 50 Bolt nuts assorted sizes etc.

The foregoing is a correct description,
John Y. Kneaid & Co Ltd Manufacturer.

Dates of Survey while building
 During progress of work in shops -- 1911. July 25. Aug. 3. 16. 22. 24. Sept. 2. 6. 13. 15. 18. 24. 26. Oct. 2. 5. 9. 12. 17. 20. 23. 28. Nov. 1. 7. 9. 11. 14. 17. 24. 26. 29.
 During erection on board vessel --- Dec. 1. 5. 6. 12. 15. 19. 26. 27. 1912. Jan. 6. 7. 12. 16. 25. 25. 31. Feb. 2. 7. 12. 14. 19. 22. 27. Mar. 4. 6. 7. 11. 14. 21. 27. 29. 31.
 Total No. of visits 81

Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 12/1/12 Slides 19/4/12 Covers 12/1/12 Pistons 16/1/12 Rods 31/1/12
 Connecting rods 19/4/12 Crank shaft 16/1/12 Thrust shaft 31/1/12 Tunnel shafts None Screw shaft 29/3/12 Propeller 3/4/11
 Stern tube 27/3/12 Steam pipes tested See Report attached Engine and boiler seatings 13/6/12 Engines holding down bolts 16/1/12
 Completion of pumping arrangements 13/6/12 Boilers fixed 13/6/12 Engines tried under steam 1/7/12
 Main boiler safety valves adjusted 28/6/12 Thickness of adjusting washers Best. 3/32. 5/32. 7/32. 9/32. 11/32. 13/32. 15/32. 17/32. 19/32. 21/32. 23/32. 25/32. 27/32. 29/32. 31/32.
 Material of Crank shaft Steel Identification Mark on Do. 1103 Material of Thrust shaft Steel Identification Mark on Do. 1104
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts ✓ Identification Marks on Do. 1105
 Material of Steam Pipes Steel Test pressure 600 lb

General Remarks (State quality of workmanship, opinions as to class, &c.)

The owners have fitted a McPhail & Simpson steam superheater in the uptake. The inlet and outlet boxes (into which the best heating tubes are expanded) are connected to the main steam pipe range and can be shut off or connected at pleasure. Thus steam may be taken to the Engines direct from the Boiler or through the superheater as desired. The superheater has been tested in the presence to 150 lb pressure and was found tight. Its safety valve is adjusted to blow at 185 lb pressure. At the trial of the Engines the superheater was not working and Builders state that it will not be used for the superheating of steam until the time guarantee on the machinery expires.

The Boilers and machinery are of the usual type and were built under special survey. They have been examined under steam and found to work well throughout. They are now in good and efficient condition and eligible in my opinion to have the record of ***LMC. 7.12.** marked in the Society's Register Book.

It is submitted that this vessel is eligible for **THE RECORD. + LMC 7.12**
Wm. Austin
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee .. £ 2 : : :
 Special .. £ 33 : 3 : :
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, 2/3/12
 When received, 5/3/12

Committee's Minute **GLASGOW** 9-JUL 1912

Assigned **+ LMC 7.12**

Greenock.

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

