

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 23/11/18 1918 When handed in at Local Office 26/11/18 1918 Port of DUNDEE.

No. in Survey held at Dundee. Date, First Survey 18th September 1914 Last Survey 21st November 1918.

Reg. Book. 314 on the S.S. "WAR DIRK" (Number of Visits 56.) Tons { Gross 2335.51 Net 1016.57.

Master Built at Dundee By whom built Laidon S.B. & Co. Ld (260) When built 1918

Engines made at Dundee By whom made Laidon S.B. & Co. Ld (No 460) when made 1918

Boilers made at Dundee By whom made Laidon S.B. & Co. Ld. when made 1918

Registered Horse Power Owners (The Shipping Controller, Portman, Arbuckle & Mackinnon, Ld) Port belonging to

Nom. Horse Power as per Section 28 411.410 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion, Surface Condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25" 41" 68" Length of Stroke 45" Revs. per minute 80 Dia. of Screw shaft as per rule 13.4" Material of screw shaft as fitted 14.5" 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

on 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 Yes Length of stern bush 5'-0"

Dia. of Tunnel shaft as per rule 12.41" as fitted 12.5" Dia. of Crank shaft journals as per rule 13.03" as fitted 13.4" Dia. of Crank pin 1 3/4" Size of Crank webs 48 1/2 x 8 3/8" Dia. of thrust shaft under

collars 1 3/4" Dia. of screw 15'-6" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable No Total surface 45 sq. ft.

No. of Feed pumps Two Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps { 1 - 9 1/2" 7" 18" - Feed Wtg. 1 - 9 1/2" 7" 18" - General 1 - 10 1/2" 14" 18" - Ballast No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three, @ 3" In Holds, &c. F.A.T. 1 @ 4" A.P.T. 1 @ 4" Tunnel 1 @ 2 1/2"

No. 1 Hold 2 @ 3" No. 2 Hold 2 @ 3" No. 3 Hold 2 @ 3" No. 4 Hold 1 @ 3" Bunkers - 2 @ 3"

No. of Bilge Injections 1 sizes 1 1/2" Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes, 3"

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

Are all connections with the sea direct on the skin of the ship Yes, in engine room 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 Below

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 Bilge & ballast pipes. How are they protected Strong 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

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel THE STEEL COMPANY OF SCOTLAND, D. COLVILLE & SONS, THE ETRIA I. & S. Co. LD. THE MOTHERWELL I & S. Co. LD. H. BEARDMORE & CO. THE LANARKSHIRE STEEL Co.

Total Heating Surface of Boilers 5882 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers Two, single ended marine

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 13.9.18 No. of Certificate 945

Can each boiler be worked separately Yes Area of fire grate in each boiler 74 sq. ft. No. and Description of Safety Valves to

each boiler 2, Spring loaded Area of each valve 12.56 sq. in. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers on woodwork 4'-9" Mean dia. of boilers 16'-4 1/2" Length 11'-9" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28 1/4 - 33 Tons Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams B.R.

long. seams T.R. D.B.S. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 1'-8 1/2"

Per centages of strength of longitudinal joint rivets 90 plate 85 Working pressure of shell by rules 185 Size of manhole in shell 16" x 12"

Size of compensating ring in end flange No. and Description of Furnaces in each boiler 4, Sights, Material Steel Outside diameter 3'-8 1/2"

Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates crown 9" bottom 9" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 197 Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 1/16" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 8 3/4" x 10 3/8" Back 8 3/4" x 10 3/8" Top 8 3/4" x 10 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 - sides 200 - back

Material of stays Steel Area at smallest part 2.08 Min. Area supported by each stay 94 Working pressure by rules 188 End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 24" x 22" Max. How are stays secured Riv. & W. Working pressure by rules 185 Material of stays Steel

Area at smallest part 9.62 sq. in. Area supported by each stay 528 sq. in. Working pressure by rules 189 Material of Front plates at bottom Steel

Thickness 15/16" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 16" x 9" Working pressure of plate by rules 183

Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 3/8" Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 12" x 4 3/4"

Pitch across wide water spaces 13 3/4" Working pressures by rules 200 + 190 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10" x 7 1/8" (2) Length as per rule 3'-1" Distance apart 10 1/8" Number and pitch of stays in each three, 8 3/4"

Working pressure by rules 202 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

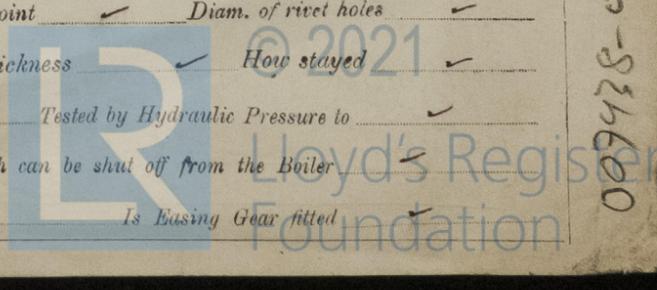
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

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 Basing Gear fitted

007928-007946-0221



IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end bolts + nuts. Two bottom end bolts + nuts. Two main bearing bolts + nuts. See set coupling bolts + nuts. Set of valves for fuel + bilge pumps. 3 main fuel + 3 donkey fuel check valves. 24 assorted bolts + nuts. 6 cyls cover studs + nuts. 6 steam chest cover studs + nuts. 2 junk ring studs + nuts. Assorted round + flat bars of iron (20 lbs specification). See propeller.*

The foregoing is a correct description,

FOR THE CALEDON SHIPBUILDING & ENGINEERING CO. LIMITED

J. D. Duncanson SECRETARY

Manufacturer.

Dates of Survey while building { During progress of work in shops -- *1914* SEP. 18. OCT. 11. NOV. 8. DEC. 5. 14. 19. 1918 JAN. 4. 21. 28. FEB. 12. MAR. 8. 15. 22. APR. 11. 19. 23. 25. 30. MAY 3. 13. 21. 24. 31. JUNE 7. 10. 14. 25. JULY 3. 5. 10. 11. 16. AUG. 1. 2. 12. 13. 19. 30. During erection on board vessel -- *1918* SEP. 3. 6. 10. 13. 14. 20. 25. OCT. 4. 14. 22. 29. NOV. 4. 13. 14. 20. 21. Total No. of visits *256* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *H.P. 31.5.18 M.P. 31.5.18 L.P. 21.5.18* Slides *10.4.18* Covers *H.P. 31.5.18 M.P. 31.5.18 L.P. 21.5.18* Pistons *10.4.18* Rods *3.4.18* Connecting rods *10.4.18* Crank shaft *10.6.18* Thrust shaft *28.6.18* Tunnel shafts *3.4.18* Screw shaft *12.8.18* Propeller *12.8.18* Stern tube *12.8.18* Steam pipes tested *GLASGOW* Engine and boiler seatings *16.8.18* Engines holding down bolts *17.9.18* Completion of pumping arrangements *21.11.18* Boilers fixed *4.10.18* Engines tried under steam *21.11.18* Completion of fitting sea connections *28.8.18* Stern tube *28.8.18* Screw shaft and propeller *28.8.18* Main boiler safety valves adjusted *14.11.18* Thickness of adjusting washers *P.P. 3/32 5 7/16 S.P. 15/32 5 13/32* Material of Crank shaft *Steel* Identification Mark on Do. *838 J.H.M.* Material of Thrust shaft *Steel* Identification Mark on Do. *838 J.H.M.* Material of Tunnel shafts *Steel* Identification Marks on Do. *838 J.H.M.* Material of Screw shafts *Steel* Identification Marks on Do. *838 J.H.M.* Material of Steam Pipes *Best Iron* Test pressure *540 lbs sq. in. tested in Glasgow* Is an installation fitted for burning oil fuel *Yes* 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

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines boilers of this vessel have been built under special survey, & in accordance with the plans and specification. The materials & workmanship are sound & good. The main & auxiliary machinery have been examined under full working conditions & found in good order. The machinery is eligible in my opinion to have record of L.M.C. 11.18. This vessel is a "D" type standard ship.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 11.18. F.D.

J.W.D. 28/11/18 *J.R.R.*

The amount of Entry Fee ... £ : : When applied for, Special ... *£ 51 : 18/3* 26-11-1918 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 14.12.1918

John Mackirdy Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 3 DEC. 1918 Assigned *+ L.M.C. 11.18 F.D.*



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