

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 6 - MAR 1916 When handed in at Local Office 6 - MAR 1916 Port of DUNDEE TUE. 7 - MAR. 1916

No. in Survey held at Dundee Date, First Survey 24th Sept. 1915 Last Survey 4th March 1916
Reg. Book. 24 on the MACHINERY OF THE STEEL S.C. ST. "LADY DOROTHY" (Number of Visits 14)

Master COLIN CAMPBELL Built at Dundee By whom built Dundee S.P. Co., Ld. (N:274) When built 1916
Engines made at Coatbridge By whom made Wm. Beardmore & Co., Ld. (N:460) when made 1916
Boilers made at Glasgow By whom made D. Rowan & Co., Ld. (N:235) when made 1916

Registered Horse Power _____ Owners Hotels' Explorers Co., Ld. Port belonging to Glasgow
Nom. Horse Power as per Section 28 81 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion Inpex condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 13, 21 & 35" Length of Stroke 24" Revs. per minute 101 Dia. of Screw shaft as per rule Material of Steel
as fitted 8 1/4" screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner fitted 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 yes Length of stern bush 3'-4"

Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule Dia. of Crank pin 7" Size of Crank webs 1 3/4" x 4 1/2" Dia. of thrust shaft under collars 7 Dia. of screw 9'-6" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable solid Total surface 34 \$

No. of Feed pumps 2 Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6" GAL. BALLAST DUNKY No. and size of Suctions connected to both Bilge and Donkey pumps 1" GAL. FEED DUNKY

In Engine Room 3 @ 2" In Holds, &c. Fore peak 1 @ 2 1/2", For hold 3 @ 2"
After hold 2 @ 2" and After peak 1 @ 2 1/2"

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

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 no

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 11-10-15 of Stern Tube 11-10-15 Screw shaft and Propeller 11-10-15 21-10-15

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform in Eng. Room

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel

Total Heating Surface of Boilers 1485 \$ Is Forced Draft fitted no No. and Description of Boilers 1 S.E. Cylindrical Multitubular

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 29-9-15 No. of Certificate 13253

Can each boiler be worked separately yes Area of fire grate in each boiler 51.2 \$ No. and Description of Safety Valves to each boiler 2 - direct spring loaded Area of each valve 5.94 \$ 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 9" Mean dia. of boilers 13'-0" Length 10'-3" 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 plain part top _____ Thickness of plates crown _____ Description of longitudinal joint: 35496 _____ No. of strengthening rings _____

Working pressure of furnace by the rules _____ Combustion chamber plates: Material REPORT Thickness: Sides _____ Back _____ Top _____ Bottom _____

Pitch of stays to ditto: Sides _____ Back _____ Top _____ 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 _____

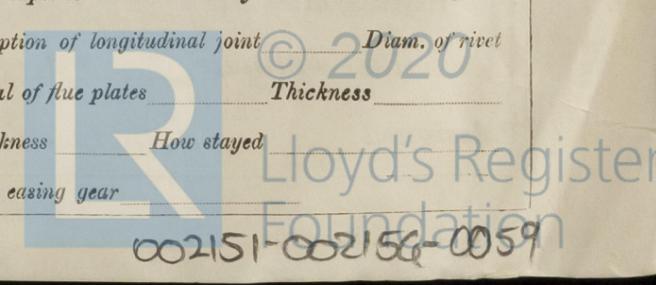
Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____

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 _____

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 _____



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VERTICAL DONKEY BOILER— Manufacturers of Steel

No. One Description Vertical Cross Tube
 Made at Goodmouth By whom made Geo. Black & Sons When made 1916 Where fixed Starboard wing of Steamer
 Working pressure 100 lbs tested by hydraulic pressure to 200 lbs Date of test 31-3-15 No. of Certificate 728 Fire grate area 16 sq ft Description of Safety Valves And Spring Loaded No. of Safety Valves 1 Area of each 8.27 sq in Pressure to which they are adjusted 100 lbs Date of adjustment 2-3-16
 If fitted with casing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 5'-6" Length 10'-9"
 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 plates 14 696 Per centage of strength of joint _____ Rivets _____ Plates _____
 Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of ab. _____ 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 and 2 bottom end bolts and nuts; 2 main bearing bolts & nuts; 1 set coupling bolts; 1 set feed and take pump valves; assorted bolts and nuts; iron various sizes.

The foregoing is a correct description,
WILLIAM BEARDMORE & CO., LIMITED. Manufacturer. W. J. Wilson

Dates of Survey while building { During progress of work in shops - - 1915
 { During erection on board vessel - - 1916
 Total No. of visits 14 Is the approved plan of main boiler forwarded herewith yes
 " " " donkey " " " yes

Dates of Examination of principal parts—Cylinders _____ Slides _____ Covers _____ Pistons _____ Rods _____
 Connecting rods _____ Crank shaft _____ Thrust shaft _____ Tunnel shafts _____ Screw shaft _____ Propeller _____
 Stern tube _____ Steam pipes tested 19-1-16 Engine and boiler seatings 11-10-15 Engines holding down bolts 23-12-15
 Completion of pumping arrangements 2-3-16 Boilers fixed 12-1-16 Engines tried under steam 2-3-16
 Main boiler safety valves adjusted 1-3-16 Thickness of adjusting washers Port 5/16" Starboard 5/16"
 Material of Crank shaft Steel Identification Mark on Do. FAE 29-1-15 Material of Thrust shaft Steel Identification Mark on Do. 7719
 Material of Tunnel shafts Steel Identification Marks on Do. 3070 Material of Screw shafts Steel Identification Marks on Do. FAE 11-10-15
 Material of Steam Pipes Steamless Copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery of this vessel has now been fitted on board in accordance with the Society's Rules, examined under full working conditions and found satisfactory; and eligible, in my opinion, to have record of + LMC 3.16.

Note: For full particulars of engines and boilers see Glasgow Report Nos. 35613 and 35496, and Litch Report No. 14696.

It is submitted that this vessel is eligible for **THE RECORD + LMC 3.16.**

Report on Electric Lighting Installation will follow at an early date. J.W.D. J.M. 8/3/16

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

James Cunningham
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute _____
 Assigned + L.M.C. 3.16

MACHINERY CERTIFICATE
WRITTEN.



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