

REPORT ON MACHINERY.

No. 15203.

TUES. 24 SEP 1907

Port of Greenock

Received at London Office

19

No. in Survey held at Greenock
Reg. Book.Date, first Survey 28th Dec^r 1906 Last Survey 12th Sept^r 1907(Number of Visits 49)on the SCREW STEAMER DILDORCH.Master P. M. Pearson Built at Greenock By whom built Scotts' S.B. & Eng. Co. Ltd. When built 1904Engines made at Greenock By whom made Scotts' S.B. & Eng. Co. Ltd. when made 1904Boilers made at Greenock By whom made Scotts' S.B. & Eng. Co. Ltd. when made 1904Registered Horse Power _____ Owners J. Reid Campbell & Mr. Hobart Campbell Port belonging to GlasgowNom. Horse Power as per Section 28 471 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YesENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 26 $\frac{1}{2}$ " - 44" - 72" Length of Stroke 48" Revs. per minute 72 Dia. of Screw shaft 14 $\frac{1}{2}$ " Material of screw shaft SteelIs 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 60"Dia. of Tunnel shaft 13 $\frac{1}{2}$ " Dia. of Crank shaft journals 13 $\frac{1}{2}$ " Dia. of Crank pin 14 $\frac{1}{2}$ " Size of Crank webs 26 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " Dia. of thrust shaft under collars 14 $\frac{1}{2}$ " Dia. of screw 14 $\frac{1}{2}$ " Pitch of Screw 14 $\frac{1}{2}$ " No. of Blades 4 State whether moveable No Total surface 9259 sq. ft.No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes WEIRS FEED PUMPSNo. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work YesNo. of Donkey Engines 3 Sizes of Pumps 4 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " (5 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ ") No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Four - 3 $\frac{1}{2}$ " dia. In Holds, &c. No. 1 Hold: 2-3 $\frac{1}{2}$ " dia. No. 2 Hold: 2-3 $\frac{1}{2}$ " dia.No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump C. P. Is a separate Donkey Suction fitted in Engine room & size Yes: 3 $\frac{1}{2}$ "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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 AboveAre 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 YesWhat pipes are carried through the bunkers None How are they protected YesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 13th Aug of Stern Tube Yes Screw shaft and Propeller Yes Letter attachedIs the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platformBOILERS, &c.—(Letter for record R.) Manufacturers of Steel Stewart & Lloyd'sTotal Heating Surface of Boilers 6694 sq. ft. As Forced Draft fitted Yes No. and Description of Boilers 2: Cylind^r mult^r Single endedWorking Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 3/4/07 No. of Certificate 839Can each boiler be worked separately Yes Area of fire grate in each boiler 6059 sq. ft. No. and Description of Safety Valves to each boiler 2: Direct Spring Area of each valve 9.62 sq. in. Pressure to which they are adjusted 185 lb Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork about 15" Mean dia. of boilers 16.5" Length 12'0" Material of shell plates SteelThickness 1 $\frac{5}{16}$ " Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Doublelong. seams Double Strap Diameter of rivet holes in long. seams 1 $\frac{5}{16}$ " Pitch of rivets 8 $\frac{1}{2}$ " Lap of plates or width of butt straps 19 $\frac{1}{2}$ "Per centages of strength of longitudinal joint 86.3 Working pressure of shell by rules 181 lb Size of manhole in shell 16" x 12"Size of compensating ring 38 x 30 x 1 $\frac{5}{16}$ " No. and Description of Furnaces in each boiler 3: Monson's Material Steel Outside diameter 51"Length of plain part 4.9 Thickness of plates 8 Description of longitudinal joint Weld No. of strengthening rings NoneWorking pressure of furnace by the rules 194 lb Combustion chamber plates: Material Steel Thickness: Sides 3 $\frac{1}{2}$ " Back 5" Top 3 $\frac{1}{2}$ " Bottom 2 $\frac{1}{2}$ "Pitch of stays to ditto Sides 7 $\frac{1}{8}$ " x 7 $\frac{1}{8}$ " Back 7 $\frac{1}{8}$ " x 7 $\frac{1}{8}$ " Top 7 $\frac{1}{8}$ " x 7 $\frac{1}{8}$ " Bottom 7 $\frac{1}{8}$ " x 7 $\frac{1}{8}$ " If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 223 lbMaterial of stays Iron Diameter at smallest part 1 $\frac{5}{8}$ " Area supported by each stay 62 sq. in. Working pressure by rules 244 lb End plates in steam space:Material Steel Thickness 1 $\frac{1}{8}$ " Pitch of stays 19 $\frac{1}{8}$ " x 15 $\frac{1}{8}$ " How are stays secured Double nuts & washers Working pressure by rules 185 lb Material of stays SteelDiameter at smallest part 3 $\frac{1}{2}$ " Area supported by each stay 315 sq. in. Working pressure by rules 213 lb Material of Front plates at bottom SteelThickness 1 $\frac{1}{16}$ " Material of Lower back plate Steel Thickness 1 $\frac{1}{16}$ " Greatest pitch of stays 13 $\frac{1}{2}$ " Working pressure of plate by rules 186 lbDiameter of tubes 2 $\frac{1}{2}$ " Pitch of tubes 3 $\frac{1}{8}$ " x 3 $\frac{1}{8}$ " Material of tube plates Steel Thickness: Front 1 $\frac{1}{8}$ " Back 1 $\frac{1}{8}$ " Mean pitch of stays 4 $\frac{1}{8}$ "Pitch across wide water spaces 14" Working pressures by rules 232 lb 352 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x 1 $\frac{1}{2}$ " Length as per rule 34" Distance apart 7 $\frac{1}{8}$ " Number and pitch of stays in each 3: 7 $\frac{1}{8}$ "Working pressure by rules 213 lb Superheater or Steam chest; how connected to boiler None 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 _____ Are they fitted with easing gear _____

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 easing 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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:—Propeller and shaft Slide Spindles 1 pair 2nd Bushes 1 pair 2nd Bushes, 2 Crosshead Bolts, 2 Crank pin Bolts, 2 Main Bearing Bolts, 6 Coupling Bolts, 2 Eccentric Strap Bolts, 12 Joint Ring Bolts, 12 Boiler tubes, 24 Condenser Valves, 1 Set feed pump valves, 1 Set Bilge pump valves, 1 Set Circulating pump valves, 1 Set pump valves, 4 Bars White metal, 2 Safety valve springs.

The foregoing is a correct description, one main and one oil pump, 1 feed escape valve spring & the

SCOTT'S SHIPBUILDING & ENGINEERING COMPANY LIMITED.
Manufacturer.

Dates of Survey while building { During progress of work in shops - 1906. Dec. 28. 1907. Jan. 10. 16. 19. 24. 28. Feb. 1. 11. 15. 19. 26. Mar. 6. 14. 19. 25. 30. April 3. 11. 15. 20. 24. 26
During erection on board vessel - May. 3. 8. 15. 17. 21. 28. 31. June 4. 7. 11. 18. 20. July 3. 18. 24. 27. 31. Aug. 6. 7. 13. 21. 26. 29. 30. Sep. 4. 11. 12.
Total No. of visits 4. 11. 12.

Is the approved plan of main boiler forwarded herewith Yes. Copy
" " " donkey " " " with report on 4/10/07

Dates of Examination of principal parts—Cylinders 12/9/07 Slides 31/1/07 Covers 12/9/07 Pistons 31/5/07 Rods 19/3/07.
Connecting rods 19/3/07 Crank shaft 4/1/07 Thrust shaft 4/6/07 Tunnel shafts 4/6/07 Screw shaft 4/6/07 Propeller 13/8/07.
Stern tube 13/8/07 Steam pipes tested 21/8/07 Engine and boiler seatings 21/8/07 Engines holding down bolts 24/8/07.
Completion of pumping arrangements 29/8/07 Boilers fixed 29/8/07 Engines tried under steam 12/9/07.
Main boiler safety valves adjusted 29/8/07 Thickness of adjusting washers Port Boiler 3/4" S.L. 3/4" Star Boiler 3/4" S.L. 3/4" Main Boiler 3/4" S.L. 3/4"
Material of Crank shaft Steel Identification Mark on Do. 485 Material of Thrust shaft Steel Identification Mark on Do. 486
Material of Tunnel shafts Steel Identification Marks on Do. 486 & 491 Material of Screw shafts Steel Identification Marks on Do. 492
Material of Steam Pipes Copper Test pressure 400 lbs. sq. in.

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

The Engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good. When completed they were examined under steam while running full power trials in the Firth and found to work satisfactorily.

The Machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC 9.07** marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD

F.D.

LMC 9.07 ELEC LIGHT.

The amount of Entry Fee. £ 3 : : : When applied for, 19/9/1907
Special £ 43 : 11 : :
Donkey Boiler Fee £ : : : When received, 20/9/1907
Travelling Expenses (if any) £

Committee's Minute

Assigned

+ LMC 9.07

MACHINERY CERTIFICATE

WRITTEN 24.9.07

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

Glasgow 23 SEP 1907