

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office

TUES. JAN 1 1907

No. in Survey held at Paisley
Reg. Book. Thames Conservancy Hopper 2^o 5.

Date, first Survey 20th March Last Survey 14th Nov 1906

Master Thames Conservancy Hopper 2^o 5. By whom built Fleming & Ferguson When built 1906

Engines made at Paisley By whom made Fleming & Ferguson when made 1906

Boilers made at do By whom made do when made 1906

Registered Horse Power 158 Owners Thames Conservancy Port belonging to London

Nom. Horse Power as per Section 28 158 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 18. 29. 48 Length of Stroke 30 Revs. per minute — Dia. of Screw shaft 9.2 as per rule 9.2 as fitted 9.2 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 — 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 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 48"
 Dia. of Tunnel shaft 8.337 as per rule 8.337 as fitted 8.337 Dia. of Crank shaft journals 8.774 as per rule 8.774 as fitted 8.774 Dia. of Crank pin 9.2 Size of Crank webs 6.172 Dia. of thrust shaft under collars 9.2 Dia. of screw 11.0 Pitch of Screw 12.6 No. of Blades 4 State whether moveable No Total surface 47
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 15 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 Stroke 15 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 6x4x6, 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumps —
 In Engine Room 2 - 2.2" In Holds, &c. 5 - 2.2"

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Pump 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 —
 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 For Suctions How are they protected Wood covering
 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 — of Stern Tube — Screw shaft and Propeller 18/10/06
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Mit C^o of Scotland.
 Total Heating Surface of Boilers 2841 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended
 Working Pressure 150 lbs Tested by hydraulic pressure to 350 lbs Date of test 18.10.06 No. of Certificate 8391
 Can each boiler be worked separately Yes Area of fire grate in each boiler 59 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 5.94 Pressure to which they are adjusted 160 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork Stokehold Mean dia. of boilers 13.0 Length 10.0 Material of shell plates Steel
 Thickness 1.3/16 Range of tensile strength 27.5-632 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.L. long. seams D.B.S. Diameter of rivet holes in long. seams 1.4 Pitch of rivets 8.3/4 Lap of plates or width of butt straps 18.3/8
 Per centages of strength of longitudinal joint rivets 87.8 plate 85.7 Working pressure of shell by rules 200 lbs Size of manhole in shell 16x12
 Size of compensating ring 2.6x2.2x1.3 No. and Description of Furnaces in each boiler 3 Fox's Material Steel Outside diameter 3.76
 Length of plain part top — bottom — Thickness of plates crown 1.7 bottom 1.32 Description of longitudinal joint weld No. of strengthening rings —
 Working pressure of furnace by the rules 180 Combustion chamber plates: Material Steel Thickness: Sides 2.1/32 Back 9/16 Top 2.1/32 Bottom 2.7/32
 Pitch of stays to ditto: Sides 9.3/4 x 8 Back 7.2 x 8.4 Top 9 x 9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs
 Material of stays Steel Diameter at smallest part 1.73 Area supported by each stay 7.0 Working pressure by rules 187 End plates in steam space: Material Steel Thickness 1.7/8 Pitch of stays 17.2 x 17.4 How are stays secured D. Nuts Working pressure by rules 180 lbs Material of stays Steel
 Diameter at smallest part 6.1 Area supported by each stay 310 Working pressure by rules 197 Material of Front plates at bottom Steel
 Thickness 1.3/16 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 14.3 Working pressure of plate by rules —
 Diameter of tubes 3.1/4 Pitch of tubes 4.3 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 9"
 Pitch across wide water spaces 14.2 Working pressures by rules 250 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7.3/4 x 1.3 x 2 Length as per rule 27.3 Distance apart 9" Number and pitch of stays in each 2 - 9"
 Working pressure by rules 177 lbs (Superheater or Steam chest; how connected to boiler None 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



VERTICAL DONKEY BOILER—Manufacturers of Steel

No. _____ Description Iron When made _____ Where fixed _____
 Made at _____ By whom made _____
 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 _____ 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 _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Two top end bolts, 2 bottom end bolts, set of coupling bolts, two main bearing bolts, assorted iron, fud & bridge valves, etc.

The foregoing is a correct description,

Manufacturer.

For Fleming & Ferguson, Ltd.
R. W. Bell
 Secretary.

Dates	During progress of work in shops—	1906: Mar 20 Apr 24 May 9 15 June 19 July 12 21 Aug 24 30 Sep 10
of Survey while building	During erection on board vessel—	19 27 Oct 1 18 19 Nov 1 10 12 14
	Total No. of visits	19

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—

Cylinder	24/8/06	Slides	24/8/06	Covers	24/8/06	Pistons	24/8/06	Rods	24/8/06
Connecting rods	24/8/06	Crank shaft	20/3/06	Thrust shaft	9/5/06	Tunnel shafts	—	Screw shaft	1/10/06
Stern tube	1/10/06	Steam pipes tested	6/11/06	Engine and boiler seatings	1/11/06	Engines holding down bolts	12/11/06		
Completion of pumping arrangements	14/11/06	Boilers fixed	14/11/06	Engines tried under steam	14/11/06				
Main boiler safety valves adjusted	14/11/06	Thickness of adjusting washers	1/4 Bl. F 5/16, A 1/4, Pt. Bl. F 3/16 A 1/8						
Material of Crank shaft	slut	Identification Mark on Do.	(HGS)	Material of Thrust shaft	slut	Identification Mark on Do.	(HGS)		
Material of Tunnel shafts	—	Identification Marks on Do.	(HGS)	Material of Screw shafts	slut	Identification Marks on Do.	(HGS)		
Material of Steam Pipes	Copper			Test pressure	350 lb				

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

These engines & boilers have been constructed under special survey & are of good materials & workmanship. They have been satisfactorily fitted on board.

This vessel is in my opinion eligible for notation L.M.C. 11.06 in the Register Book.

The boilers are designed for a working pressure of 175 lb but are only to be used for 160 lb. The N.H.P. & the rule sizes of shafting given above are based on 160 lb pressure.

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 11.06

J.S.M. 1/10/07

Note WP 160 lb

The amount of Entry Fee...	£ 2 : : :	When applied for,	31 DEC 1906
Special	£ 23 : 14 :	When received,	4.1.07
Donkey Boiler Fee	£ : : :		
Travelling Expenses (if any) £	: : :		

Committee's Minute

Assigned

Glasgow 31 DEC 1906
 + L.M.C. 11.06

H. Gardner-Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE WRITTEN 1-1-07



© 2020

Lloyd's Register Foundation