

Port of SunderlandReceived at London Office 10th MAY 1905

No. in Survey held at Sunderland Date, first Survey 9th June, 1904 Last Survey 14th April, 1905
 Reg. Book. on the Steel Screw Steamer "Drake" (Number of Visits 30)
 Master Matthew Lorne Built at Sunderland By whom built Mr. James Lorne & Co. (Ld) When built 1905
 Engines made at Sunderland By whom made George Clark (Lm) when made 1905
 Boilers made at Sunderland By whom made George Clark (Lm) when made 1905
 Registered Horse Power 284 Owners Hilgout & Co. Ltd. Port belonging to London
 Nom. Horse Power as per Section 28 284 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines

Triple ExpansionNo. of Cylinders ThreeNo. of Cranks Three

Dia. of Cylinders 23-38-64 Length of Stroke 42 Revs. per minute 62 Dia. of Screw shaft as per rule 13 Material of cast steel
 as fitted 13 1/4 screw shaft

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 4-4 1/2

Dia. of Tunnel shaft as per rule 11 1/2 Dia. of Crank shaft journals as per rule 12 1/4 Dia. of Crank pin 12 1/2 Size of Crank webs 1 1/2 x 8 1/2 Dia. of thrust shaft under

collars 12 1/2 Dia. of screw 16-0 Pitch of screw 16-8 No. of blades four State whether moveable no Total surface 46 sq ft

No. of Feed pumps Two Diameter of ditto 3 Stroke 26 Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 4 1/4 Stroke 26 Can one be overhauled while the other is at work yes

No. of Donkey Engines Three Sizes of Pumps 8x8x8-6x4x6-5 1/2 x 3 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 3" m.p. & one 3 1/2" Centre In Holds, &c. Two in each hold 3" dia. & 2 1/2" m.p.

No. of bilge injections one sizes 5 Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size yes 5" dia.

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 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock — Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—

(Letter for record S)Total Heating Surface of Boilers 4304 sq ftIs forced draft fitted no

No. and Description of Boilers Two single ended, mult. Working Pressure 180 lb Tested by hydraulic pressure to 360

Date of test 24/3/05 Can each boiler be worked separately yes Area of fire grate in each boiler 61.3 sq ft No. and Description of safety valves to

each boiler Two, direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 180 lb Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15-6" Length 10-6" Material of shell plates steel

Thickness 1 1/4" Range of tensile strength 28 1/2 to 32 ton Are they welded or flanged no Descrip. of riveting: cir. seams Lap 5R. long. seams 5RBS-TR

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 91.6 plate 85.16 Working pressure of shell by rules 182.6 lb Size of manhole in shell end 16 x 13

Size of compensating ring flanged No. and Description of Furnaces in each boiler Three, Ribbed Material steel Outside diameter 45 1/2"

Length of plain part top 3" bottom 3" Thickness of plates crown 3 3/4" bottom 3 1/4" Description of longitudinal joint weld. No. of strengthening rings —

Working pressure of furnace by the rules 185.8 lb Combustion chamber plates: Material steel Thickness: Sides 4/16" Back 2 3/16" x 4/16" Top 2 3/16" Bottom 1 5/16"

Pitch of stays to ditto: Sides 9 3/4" x 9 3/4" Back 0 3/8" x 9 3/4" Top — If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lb

Material of stays steel Diameter at smallest part 1 1/8" Area supported by each stay 13 1/2 x 98 Working pressure by rules 184 lb End plates in steam space:

Material steel Thickness 1 1/2" Pitch of stays 21 x 14 How are stays secured DN Working pressure by rules 182.8 lb Material of stays steel

Diameter at smallest part 2.9" Area supported by each stay 55.6 Working pressure by rules 186.5 lb Material of Front plates at bottom steel

Thickness 1 3/16" Material of Lower back plate steel Thickness 3/16" Greatest pitch of stays 1 1/8" Working pressure of plate by rules 183 lb

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

Pitch across wide water spaces 14 1/4" Working pressures by rules 182 lb Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 13 1/2 x 14 1/2 x 1 1/2" 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 2019 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 —

DONKEY BOILER— No. *one* Description *Cyl. Horiz. Mult.*
 Made at *Stockton* By whom made *J. Hudson & Co. (Ld)* When made *1904* Where fixed *on deck*
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb*. No. of Certificate *3353* Fire grate area *25 1/2* Description of safety valves *direct opening*
 No. of safety valves *one* Area of each *12 1/2* Pressure to which they are adjusted *80 lb* If fitted with easing gear *yes*. If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *8-6* Length *9-6* Material of shell plates *steel* Thickness *5/32* Range of tensile strength *24 1/2* Descrip. of riveting long. seams *lap lapped riveted* Dia. of rivet holes *13/16* Whether punched or drilled *drilled* Pitch of rivets *4 1/4*
 Lap of plating *6 1/4* Per centage of strength of joint *88 1/2* Rivets *88 1/2* Thickness of shell *steel* plates *5/32* Plates of do. *5 x 16* No. of Stays to do. *four*
 Dia. of stays. *2 1/8* Diameter of furnace *Top 2-6 Bottom 9-1* Length of furnace *4-6 1/2* Thickness of furnace plates *1/2* Description of joint *welded* Thickness of *furnace* plates *7/8* Stays by *9 x 9 B side 9* Working pressure of shell by rules *84 1/2 lb*
 Working pressure of furnace by rules *119 lb* Diameter of *stays* *3/4 x 1 1/4 x 1/2* Thickness of *stays* plates *5/8* Thickness of *stays* tubes *5/8*

SPARE GEAR. State the articles supplied:— *one set of coupling bolts, two each top end, bottom end + main bearing bolts + nuts, one set each feed + helge pump valves one propeller, mounted arm + bolts.*

The foregoing is a correct description,

James C. Clark FOR GEORGE CLARK LIMITED.
 Manufacturers of main engines & boilers only

Dates of Survey while building { During progress of work in shops— 1904:— June 9, July 12, 22, Oct: 7, 15, Nov: 30, Dec: 15, 20. —1905:— Jan: 14, 31, Feb: 6, 9, 14, 17, 20, 22, Mar: 7, 9, 13, 14, 17, 20, 21, 22, 24, 29, Apr: 5, 6, 12, 14.
 Total No. of visits *30* Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

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

The Machinery of this Vessel has been built under Special Survey the Boilers & steam pipes have been tested as required by the Rules, the materials & workmanship sound & good, the Machinery worked well & the safety valves of the main & donkey Boilers have been adjusted under steam to their working pressure & easing gear fitted.

This Vessel is Eligible in my opinion to have the Notation of LMC 4.05 in the Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD L.M.C. 4.05

The amount of Entry Fee.. £ 2: :
 Special .. £ 34: 4: :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 8.5.05
 When received, 10.5.05

Ed. Em. S.
 9.5.05 9.5.05
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 12 MAY 1905

Assigned

+ LMC 4.05

MACHINERY CERTIFICATE
 WRITTEN.



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