

Port of Sunderland

Received at London Office MAY 9 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 "Dunbar" (Number of Visits 30)

Master Matthew Payne Built at Sunderland By whom built Mr. James Lang & Co. (Ld) When built 1905

Engines made at Sunderland By whom made George Clark (Lmi) when made 1905

Boilers made at Sunderland By whom made George Clark (Lmi) when made 1905

Registered Horse Power _____ Owners Hilgout & Co. Ld. Port belonging to London

Nom. Horse Power as per Section 28 284 Is Refrigerating Machinery fitted no. Is Electric Light fitted no.

Tons { Gross 2764
Net 1786

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 23-38-64 Length of Stroke 42 Revs. per minute 62 Dia. of Screw shaft 13 Material of Wrought 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 4-4 1/2

Dia. of Tunnel shaft 11-4/9 Dia. of Crank shaft journals 12-0/4 Dia. of Crank pin 12-1/2 Size of Crank webs 1/2 x 8 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 4604

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" imp & one 3 1/2" Centre In Holds, &c. Two in each hold 3" dia; 2 1/2" imp.

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 Is 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 No. and Description of safety valves to each boiler Two, direct spring Area of each valve 8.29 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 BR. long. seams DRS-TR

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

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

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

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

Working pressure of furnace by the rules 182.8 lb Combustion chamber plates: Material steel Thickness: Sides 4/8 Back 2 3/8 x 4/8 Top 2 3/8 Bottom 1 5/8

Pitch of stays to ditto: Sides 9 3/4 x 9 3/4 Back 0 3/8 x 4 1/2 Top — If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 1/2 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 1/2 lb End plates in steam space:

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

Diameter at smallest part 2.9 Area supported by each stay 556 Working pressure by rules 186.5 lb Material of Front plates at bottom steel

Thickness 1 3/8 Material of Lower back plate steel Thickness 3/2 Greatest pitch of stays 1 1/8 Working pressure of plate by rules 183 1/2 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

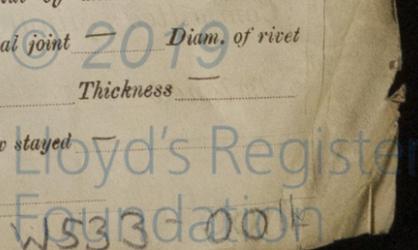
Pitch across wide water spaces 14 1/4 Working pressures by rules 182 lb Girders to Chamber tops: Material steel Depth and thickness of girder at centre 13 1/2 x 1 1/2 Length as per rule — Distance apart — Number and pitch of Stays in each —

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 _____ 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 _____

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



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 *27 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 Rivets *88.7* Thickness of shell *steel* plates *5/32* Rivets of do. *15x16* No. of Stays to do. *four*
 Dia. of stays. *2 1/16* Diameter of furnace Top *2-6* Bottom *9-1* Length of furnace *4 1/2* Thickness of furnace plates *1/2* Description of joint *Welded* Thickness of furnace *steel* plates *7/16* Stays by *9x9 B ends 9* Working pressure of shell by rules *84.9 lb*
 Working pressure of furnace by rules *119 lb*. Diameter of *stays* *3/4 x 1/4 x 1/2* Thickness of *stays* plates *5/8* inch Thickness of *stays* tubes *5/16*

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 unit + bolts.*

The foregoing is a correct description,
 FOR GEORGE CLARK LIMITED.
 James C. Clark, 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.
 During erection on board vessel —
 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

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

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

Committee's Minute **FRI. 12 MAY 1905**
 Assigned + LMC 4.05

