

REPORT ON MACHINERY.

No. 46834 (New)
No. 21718 (Old)

FRI, 22 APR 1904

Port of Sunderland

Received at London Office 10

No. in Survey held at Sunderland Date, first Survey 26 Aug 03 Last Survey 2 Mar 1904

Reg. Book. 19 on the Steel Screw Steamer "ALEXANDRA" (Number of Visits 12)

Master N. Shields Built at N. Shields By whom built Smith's Dock Co. Ld. When built 1904

Engines made at Sunderland By whom made MacColl & Pollock, Ld. when made 1904

Boilers made at Sunderland By whom made MacColl & Pollock, Ld. when made 1904

Registered Horse Power 59 1/2 Owners J. Thomas Port belonging to Miford

Nom. Horse Power as per Section 28 59 1/2 Is Refrigerating Machinery fitted no Is Electric Light fitted no

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

Dia. of Cylinders 12-19-32 Length of Stroke 22 1/2 Revs. per minute 110 Dia. of Screw shaft 7 1/2 Material of screw shaft cast steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 no

If two liners are fitted, is the shaft lapped or protected between the liners brayed + lapped + caulked Length of stern bush 2-6

Dia. of Tunnel shaft 6 1/2 Dia. of Crank shaft journals 6 1/2 Dia. of Crank pin 6 1/2 Size of Crank webs 4 3/8 x 10 Dia. of thrust shaft under collars 6 1/2

Dia. of screw 8-8 Pitch of screw 11-6 No. of blades four State whether moveable no Total surface 30.4 sq

No. of Feed pumps one Diameter of ditto 2 1/4 Stroke 11 1/2 Can one be overhauled while the other is at work —

No. of Bilge pumps one Diameter of ditto 2 1/4 Stroke 11 1/2 Can one be overhauled while the other is at work —

No. of Donkey Engines one Sizes of Pumps 5 1/4 x 3 1/2 x 5 duplex No. and size of Suctions connected to both Bilge and Donkey pumps —

In Engine Room one 2" Centre, one 2 1/2" ejector In Holds, &c. 2" fishroom & 2" slushwell

No. of bilge injections one sizes 2 1/2 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size 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 sludge well + hold systems How are they protected wood casing

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 no Is the screw shaft tunnel watertight —

Is it fitted with a watertight door — worked from Machinery aft

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 987 Is forced draft fitted no

No. and Description of Boilers one single ended tri. Mult. cyl. Working Pressure 180 lb Tested by hydraulic pressure to 360 lb

Date of test 11/12/03 Can each boiler be worked separately — Area of fire grate in each boiler 32 sq No. and Description of safety valves to each boiler two direct spring

Area of each valve 3.98 sq 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 6 ft 2 in Rule Mean dia. of boilers 11-6 Length 9-6 Material of shell plates steel

Thickness 3/32 Range of tensile strength 29 to 32 tons Are they welded or flanged no Descrip. of riveting: cir. seams Lap 5R long. seams DRB-DR

Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 6.58 1/2 Lap of plates or width of butt straps 12

Per centages of strength of longitudinal joint rivets 81.14 plate 81.11 Working pressure of shell by rules 180 lb Size of manhole in shell 16 x 12

Size of compensating ring 4 x 3 1/2 No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 40

Length of plain part top 4 1/2 bottom 4 1/2 Thickness of plates crown 3 3/32 bottom 3 3/32 Description of longitudinal joint Welded No. of strengthening rings one

Working pressure of furnace by the rules 180 lb Combustion chamber plates: Material steel Thickness: Sides 7/8 Back 5/8 Top 7/8 Bottom 1 1/16

Pitch of stays to ditto: Sides 4 1/2 x 8 1/4 Back 4 3/4 x 6 7/8 Top 8 1/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 lb

Material of stays steel Diameter at smallest part 1 1/2 - 1 3/8 Area supported by each stay 40 - 50 Working pressure by rules 225 lb End plates in steam space:

Material steel Thickness 3/32 Pitch of stays 15 1/4 x 15 1/4 How are stays secured 5R Working pressure by rules 182 lb Material of stays steel

Diameter at smallest part 2.29 Area supported by each stay 228 Working pressure by rules 180 lb Material of Front plates at bottom steel

Thickness 13/16 Material of Lower back plate steel Thickness 1/2 Greatest pitch of stays 12 Working pressure of plate by rules 260 lb

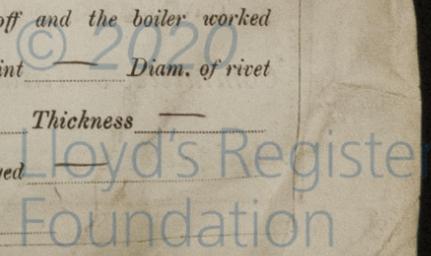
Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 5/8 Material of tube plates steel Thickness: Front 13/16 Back 13/16 Mean pitch of stays 11-4

Pitch across wide water spaces 14 1/4 Working pressures by rules 200 lb Girders to Chamber tops: Material steel Depth and thickness of girder at centre 4 7 1/2 Length as per rule 22 Distance apart 8 1/8 Number and pitch of Stays in each one

Working pressure by rules 245 lb 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 —

W1370-0150



DONKEY BOILER— No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted 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 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

Thickness of furnace crown plates Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

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

The foregoing is a correct description,
MAC COLL & POLLOCK, LTD.

James MacColl Manufacturer.

Managing Director. 1903- Aug 26 Sep 21 Nov 19. 25 Dec 1. 10. 11

1904- Jan 15 Feb 17. 23. 24 Mar 2

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - -

Total No. of s **12**

Is the approved plan of main boiler forwarded herewith **Yes**

" " " donkey " " "

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

The Machinery of this vessel has been built under special survey, the Material and workmanship sound and good the Boilers and steam pipe have been tested by hydraulic pressure according to Rule & the machinery worked satisfactorily & the safety valves have been adjusted to the working pressure & easing gear fitted —

*This vessel is eligible in my opinion to have the Notation of * L M C 3.04*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 3.04.

J.S. Girdler
 22.4.04 22.4.04

The amount of Entry Fee. . . £ 1 : - : : When applied for,

Special £ 8 : 17 : : 12.3.19.04

Donkey Boiler Fee £ : : : When received, 22.4.04

Travelling Expenses (if any) £ : : : 13/4/04

W. J. G. Girdler
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 26 APR 1904

Assigned *+ L M C 3.04*

MACHINERY CERTIFICATE



Dunbarland

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)