

REPORT ON MACHINERY.

No. 46834. (Nav)
No. 21718 (Std)

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.

79 Sup. on the

Steel Screw Steamer "ALEXANDRA"

(Number of Visits 12)

Gross 182

Tons

Net 34

When built 1904

Master

Built at

N. Shields

By whom built

Smith's Dock Co. Ltd.

Engines made at

Sunderland

By whom made

MacColl & Pollock, Ltd.

when made

1904

Boilers made at

Sunderland

By whom made

MacColl & Pollock, Ltd.

when made

1904

Registered Horse Power

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

as per rule

7 1/2

Material of

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

painted + lapped + caulked

Length of stern bush

2-6

Dia. of Tunnel shaft

as per rule

—

Dia. of Crank shaft journals

as per rule

6-3

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

size

2 1/2

Connected to condenser, or to circulating pump

pump

Is a separate donkey suction fitted in Engine room & size

yes 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

none

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 suction

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

98 1/2

Is forced draft fitted

no

No. and Description of Boilers

one single ended tri. Mult. 2 1/2"

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 1/2

Range of tensile strength

29 ton

Are they welded or flanged

no

Descrip. of riveting: cir. seams

Lap 5R.

long. seams

DBS-DR.

Diameter of rivet holes in long. seams

1 1/2

Pitch of rivets

6.28 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

7 x 3 1/2

No. and Description of Furnaces in each boiler

Two plain

Material

steel

Outside diameter

40

Length of plain part

top 7 1/2

bottom 7 1/2

Thickness of plates

crown 3 1/2

bottom 3 1/2

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 1/2

Pitch of stays to ditto: Sides

4 1/2 x 8 1/4

Back

7 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

4 1/2 - 5 1/2

Working pressure by rules

225 lb

End plates in steam space:

Material

steel

Thickness

3 1/2

Pitch of stays

5 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 sq

Working pressure by rules

180 lb

Material of Front plates at bottom

steel

Thickness

13/16

Material of Lower back plate

steel

Thickness

4 1/8

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 7/8 x 1 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

| 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 |
| strength | Descrip. of riveting long. seams | Dia. of donkey boiler | Length | Material of shell plates |
| | | Thicknes | Range of tensile | |
| Lap of plating | Per centage of strength of joint | Rivets | Thicknes of shell crown plates | Radius of do. |
| | | Plates | No. of Stays to do. | |
| Dia. of stays. | Diameter of furnace Top | Bottom | Length of furnace | Thicknes of furnace plates |
| joint | Thicknes of furnace crown plates | Stayed by | Working pressure of shell by rules | |
| Working pressure of furnace by rules | Diameter of uptake | Thicknes of uptake plates | Thicknes 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.

Manufacturer.

Managing Director. *James MacColl*

| Dates | During progress of work in shops— | During erection on board vessel— | Total No. of |
|-------|--|----------------------------------|--------------|
| 1903- | Aug 26 Sep 21 Nov 19. 25 Dec 1. 10. 11 | | |
| 1904- | Jan 15 Feb 17. 23. 24 Mar 2 | | |

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 LMC 3.04

It is submitted that
this vessel is eligible for
THE RECORD LMC.3.04.

| The amount of Entry Fee.. | £ | When applied for, |
|------------------------------|--------|-------------------|
| Special | 8 : 17 | 12.3.19.04 |
| Donkey Boiler Fee | : | When received, |
| Travelling Expenses (if any) | : | 13/4/04 |

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

Committee's Minute

TUES. 26 APR 1904

Assigned

MACHINERY CERTIFICATE
NOTED.



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Foundation