

## REPORT ON MACHINERY.

58606

Port of London.

Received at London Office

MAR 13 1897

No. in Survey held at  
Reg. Book.

Lynn.

Date, first Survey 18<sup>th</sup> Jan'y/97 Last Survey March 6 1897.

(Number of Visits 6)

on the

Wood Screw Steam Fishing vessel "Emerald"

Tons { Gross 47  
Net 26.

Master

Built at

Leith

By whom built

Marr Bros.

When built 1889. 2

Engines made at

H. Shields.

By whom made

J. O. Spence

when made 1889.

Boilers made at

Lynn.

By whom made

A. Dodman.

when made 1897.

Registered Horse Power

18.

Owners

R. McCowan Sons

Port belonging to

Ivakee.

Nom. Horse Power as per Section 28

Is Electric Light fitted

No.

## ENGINES, &amp;c.—Description of Engines

Compound surface condenser

No. of Cylinders

Two

No. of Cranks

Two

Diameter of Cylinders

9 1/2 x 20

Length of Stroke

14

Revolutions per minute

Diameter of Screw shaft

as per rule

as fitted 4

Diameter of Tunnel shaft

as per rule

Diameter of Crank shaft journals

4

Diameter of Crank pin

4

Size of Crank webs

5 x 2 1/2

Diameter of screw

5-11"

Pitch of screw

8.3

No. of blades

3

State whether moveable

No

Total surface

No. of Feed pumps

one

Diameter of ditto

2

Stroke

6 7/8

Can one be overhauled while the other is at work

✓

No. of Bilge pumps

one

Diameter of ditto

2

Stroke

6 7/8

Can one be overhauled while the other is at work

✓

No. of Donkey Engines

one

Sizes of Pumps

5 x 2 7/8

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &amp;c.

No. of bilge injections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

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

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

none

Is it fitted with a watertight door

worked from

These particulars are taken from the 1<sup>st</sup> entry report which the surveyor states are correct.

## BOILERS, &amp;c.—

(Letter for record

S.)

Total Heating Surface of Boilers

126 Sq feet

Is forced draft fitted

No.

No. and Description of Boilers

One Multitubular Marine

Working Pressure

120 lbs

Tested by hydraulic pressure to

240 lbs

Date of test

22.2.97

Can each boiler be worked separately

✓

Area of fire grate in each boiler

8 Sq feet

No. and Description of safety valves to

each boiler

Two Spring loaded

Area of each valve

4.9 sq"

Pressure to which they are adjusted

115 lbs.

Are they fitted

with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

10"

Mean diameter of boilers

7' 6"

Length

8' 0"

Material of shell plates

Steel

Thickness

5/8

Description of riveting: circum. seams

Double riveted

long. seams

Quadruple Lap.

Diameter of rivet holes in long. seams

15/16

Pitch of rivets

4"

Lap of plates on width of butt straps

7 1/4"

Per centages of strength of longitudinal joint

rivets

94.0%

plate

76.5%

Working pressure of shell by rules

127 lbs.

Size of manhole in shell

15" x 12"

Size of compensating ring

4" x 3 1/4"

No. and Description of Furnaces in each boiler

Two plain

Material

Steel

Outside diameter

2' 3"

Length of plain part

top

5' 0"

Thickness of plates

crown

7/16

Description of longitudinal joint

Riveted

No. of strengthening rings

None.

Working pressure of furnace by the rules

127 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

1/2"

Back

1/2"

Top

1/2"

Bottom

1/2"

Pitch of stays to ditto: Sides

8" x 8"

Back

8" x 8"

Top

8" x 7"

If stays are fitted with nuts or riveted heads

Nuts.

Working pressure by rules

120 lbs.

Material of stays

Steel

Diameter

at smallest part

1 1/4"

Area supported by each stay

64 sq"

Working pressure by rules

142 lbs

End plates in steam space:

Material

Steel

Thickness

5/8 (Double)

Pitch of stays

13 1/2" x 11"

How are stays secured

Double nuts.

Working pressure by rules

173 lbs

Material of stays

Steel

Diameter

at smallest part

292 sq"

Area supported by each stay

1485 sq"

Working pressure by rules

178 lbs

Material of Front plates at bottom

Steel

Thickness

5/8

Material of Lower back plate

Steel

Thickness

5/8

Greatest pitch of stays

8"

Working pressure of plate by rules

210 lbs

Diameter of tubes

3"

Pitch of tubes

4 1/4" x 4"

Material of tube plates

Steel

Thickness: Front

5/8"

Back

5/8"

Mean pitch of stays

8 1/4"

Pitch across wide water spaces

11 1/2"

Working pressures by rules

128 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

5" x 1"

Length as per rule

1' 9"

Distance apart

7"

Working pressure by rules

129 lbs

Superheater on

Steam chest; how connected to boiler

Riveted

Can the superheater be shut off and the boiler worked

separately

No

Diameter

2' 3"

Length

2' 3"

Thickness of shell plates

3/8"

Material

Steel

Description of longitudinal joint

Lap

Diam. of rivet

holes

15/16"

Pitch of rivets

2"

Working pressure of shell by rules

192 lbs

If stiffened with rings

✓

Distance between rings

✓

Working pressure by rules

✓

End plates: Thickness

1/2"

How stayed

1 Stay 2" dia

Working pressure of end plates

✓

Area of safety valves to superheater

✓

Are they fitted with easing gear

✓

Lloyd's Register

Foundation

2019

LON 512 - 0107



58606 Lon

DONKEY BOILER—

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 \_\_\_\_\_  
 Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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:—

According to Rule.

The foregoing is a correct description,

A. Dodman

Manufacturer.

Dates \_\_\_\_\_  
 of Survey \_\_\_\_\_  
 while \_\_\_\_\_  
 building \_\_\_\_\_  
 During progress of work in shops - - -  
 During erection on board vessel - - -  
 Total No. of visits \_\_\_\_\_

General Remarks

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

This Boiler has been built under Special Survey & in accordance with the approved plan. The workmanship is good. The Boiler was tested by hydraulic pressure to 240 lbs, with satisfactory results.

The cylinders, pistons, valves, pumps & condenser, sea & bilge connections, cranks, thrust & propeller shafts have been examined, also propeller & stem bush. A liner has been fitted in the H. P. cylinder reducing the diameter to 9 1/2". For further particulars of Engines see First Entry report. Repairs due to wear & tear. Stem bush & neck bush of stem gland renewed.

This vessel's Machinery is now in good condition & in my opinion the vessel is eligible for her original record L.M.C. 3. 97. For the record N.B 3. 97.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3, 97 + N.B. 3, 97

J.S.

17/3/97

17.3.97

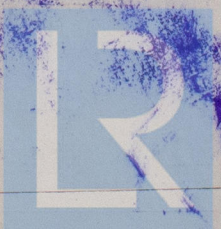
The amount of Entry Fee... £ 4 : 4 : 0 When applied for,  
 Special L.M.C. £ 1 : 7 : 0  
 Donkey Boiler Fee £ 1 : 10 : 0  
 Travelling Expenses (if any) £ 8 : 13 : 4

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

Committee's Minute FRI, MAR 19 1897

Assigned

+ L.M.C. 3, 97 + N.B. 3, 97



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