

REPORT ON MACHINERY.

Port of Middlesbrough-on-Tees

Received at London Office

22 SEP 91

Survey held at Stockton-on-Tees

Date, first Survey

15th May

Last Survey

24th August 1891

(Number of Visits 29)

on the

Screw Steamer "Rowtor"

Gross 2357
Net 1511

J. F. Holman

Built at Hartlepool

By whom built Edw. Witherby & Co.

When built 1891

made at Stockton-on-Tees

By whom made

Blair & Co. Ltd.

when made 1891

made at Stockton-on-Tees

By whom made

Blair & Co. Ltd.

when made 1891

Red Horse Power

200

Owners

J. Holman & Sons

Port belonging to

London

as Rule HP

201

VES, &c.—

ion of Engines

Direct Acting, Triple Expansion, Inverted, & Crank.

No. of Cylinders

Three

Cylinders

21"-33"-54"

Length of Stroke

39"

Rev. per minute

60

Point of Cut off, High Pressure

.5"

Low Pressure

.5"

er of Screw shaft

11 1/2"

Diam. of Tunnel shaft

11"

Diam. of Crank shaft journals

11 1/2"

Diam. of Crank pin

12"

size of Crank webs

4 1/2" x 19"

er of screw

15'-0"

Pitch of screw

15'-0"

No. of blades

4

state whether moveable

No

total surface

61 sq. ft.

Feed pumps

2

diameter of ditto

2 1/2"

Stroke

28"

Can one be overhauled while the other is at work

Yes

Bilge pumps

2

diameter of ditto

4"

Stroke

28"

Can one be overhauled while the other is at work

Yes

do they pump from

Sea Tanks, Fore main & after Holds, Engine room, Tunnel bell & after peak.

Donkey Engines

Two

Size of Pumps

14" x 8"

17 1/2" x 9"

Where do they pump from

Feed - Sea, Hotwell, Tanks & Ballast - all tanks, Fore main & after Holds, Engine room, Tunnel & sea this container.

Are the bilge suction pipes fitted with roses

Yes

Are the roses always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

Yes

Are the pumps worked

By levers from the crosshead of the After Engine.

Are the 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

Are the pipes carried through the bunkers

None

How are they protected

Yes

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times

Yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges

Yes

Were the stern tube, propeller, screw shaft, and all connections examined in dry dock

New vessel.

Is the screw shaft tunnel watertight

Yes

and fitted with a sluice door

Yes

worked from Top platform in Engine room.

BOILERS, &c.—

No. of Boilers

Two

Description

Cylindrical, Single Ended

Material

Steel

Letter (for record)

S

Working Pressure

160 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

24th July 1891. N:298.

Description of superheating apparatus or steam chest

None

Heating surface 2990 sq. ft.

Can each boiler be worked separately

Yes

Can the superheater be shut off and the boiler worked separately

Yes

Area of square feet of fire grate surface in each boiler

34

Description of safety valves

Direct Spring

No. to each boiler

Two

Area of each valve

4' 9"

Are they fitted with easing gear

Yes

No. of safety valves to superheater

Yes

area of each valve

Yes

Are they fitted with easing gear

Yes

Smallest distance between boilers and bunkers or woodwork

15"

Diameter of boilers

12' 9 1/4"

Length of boilers

10' 0"

Description of riveting of shell long. seams 8/8 Strap, Triple circum. seams Lap Double.

Thickness of shell plates

1 1/2"

Diameter of rivet holes

1 1/8"

whether punched or drilled Drilled

pitch of rivets

4 1/2"

Lap of plating 16 1/8" wide

Percentage of strength of longitudinal joint

82.6

working pressure of shell by rules

164.8 lbs.

size of manholes in shell

16" x 12"

Area of compensating rings

28' x 24' x 1 1/2"

No. of Furnaces in each boiler

2

Description of Furnaces

Ribbed

Outside diameter

3' 4"

length

6' 3"

thickness of plates

1 1/2"

description of joint

Welded

if rings are fitted

Yes

Greatest length between rings

Yes

working pressure of furnace by the rules

175 lbs.

combustion chamber plating, thickness, sides 3/8" back 3/8" top 3/8"

Thickness of stays to ditto, sides

1/2" x 1/2"

back

1/2" x 1/2"

top

1/2" x 1/2"

Are stays fitted with nuts or riveted heads

Stubs

working pressure of plating by

rules

172 lbs.

Diameter of stays at smallest part

1 1/8"

working pressure of ditto by rules

178 lbs.

end plates in steam space, thickness

1 1/2"

Thickness of stays to ditto

1 1/2" x 1 1/2"

how stays are secured

Double stub

working pressure by rules

161 lbs.

diameter of stays at

smallest part

2 1/8"

working pressure by rules

166 lbs.

Front plates at bottom, thickness

1"

Back plates, thickness

1"

Greatest pitch of stays

12 1/2"

working pressure by rules

163.8 lbs.

Diameter of tubes

3 1/4"

pitch of tubes

4' 8" x 4' 8"

Thickness of plates, front

1"

back

3/8"

how stayed

Stay tubes

pitch of stays

14 1/2" x 9 1/2"

width of water spaces

1 3/8" x 5"

Diameter of Superheater or Steam chest

2'

length

6'

thickness of plates

1"

description of longitudinal joint

Welded

diam. of rivet holes

1 1/8"

Pitch of rivets

Yes

working pressure of shell by rules

Yes

diameter of flue

Yes

thickness of plates

Yes

If stiffened with rings

Yes

Distance between rings

Yes

working pressure by rules

Yes

2 Steel.

DONKEY BOILERS

Description

Vertical with 3 cross water tubes.

Made at 24.4.90

by whom made

T. Hudson 16.4.11

when made 24.4.90 where fixed In Works

Working pressure 80 lbs

tested by hydraulic pressure to 160 lbs

No. of Certificate 299

fire grate area 1709 ft

description of

valves Spring

No. of safety valves One

area of each 8.3 sq. in.

if fitted with easing gear yes if steam from main boilers can

enter the donkey boiler 40

diameter of donkey boiler 5' 6"

length 12' 6"

description of riveting Vert. Lap Doub.

Thickness of shell plates 3/8"

diameter of rivet holes 13/16"

whether punched or drilled punched

pitch of rivets 2 3/4"

lap of plating 4"

per centage of strength of joint 40.4

thickness of crown plates 1/2"

stayed by Five stays 1 1/2" dia.

iron

Diameter of furnace, top 4' 3 1/2"

bottom 4' 10 1/2"

length of furnace 5' 5 1/2"

thickness of plates 9/16"

description of joint Lap Surge

Thickness of furnace crown plates 9/16"

stayed by Same as shell crown plate

working pressure of shell by rules 80

Working pressure of furnace by rules 81.8 lbs

diameter of uptake 12"

thickness of plates 3/8"

thickness of water tubes 3/8"

SPARE GEAR

State the articles supplied:—

1 Propeller, 2 Main Bearing Bolt Nuts, 2 Cr. pin Bolt Nuts, 2 Cr. crosshead Bolt Nuts, 1 set Coupling Bolt Nuts, 1 set Feed & Bilge pump valves, 1 set Piston Springs, Iron of various sizes Bolt Nuts assorted sizes.

The foregoing is a correct description,

Robt. Blair & Co. Ltd.

Manufacturers of Marine Engines & Boilers.

General Remarks

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

The Engines and Boilers have been constructed under special survey, and the materials and workmanship are of good quality. The main steam pipes were examined under hydraulic pressure of 120 lbs per sq. inch and found sound. When tried the Engines worked satisfactorily, and the Main Boilers on examination under steam were found tight.

The Machinery is in good and efficient condition and will be eligible in my opinion to have the record of L.M.C. 9.91 marked in the Register Book when the following work has been completed, viz: Suction pipes to be completed as per approved pumping plan; Donkey Boilers to be secured in place, mountings fitted and safety valves set under steam; sluices and watertight doors on Engine room Bulkheads to be completed.

The engine suction pipes have not been fitted in the gutters of the hold, and the additional suction at the sides of the engine room ballast tanks have not been fitted. The donkey boilers have been made secure, fitted with mountings, and tested under steam, the safety valves working satisfactorily. The sluices and watertight doors on Engine room Bulkheads have been completed in a satisfactory manner.

J. E. Stoddart

The amount of Entry Fee .. £ 2 : : : received by me,
Special .. £ 30 : : :
Donkey Boiler Fee .. £ : : :
Certificate (if required) .. £ : : :
To be sent as per margin.

(Travelling Expenses, if any, £) TUES. 29 SEP 1891

Committee's Minute

+ L.M.C. 9.91

His submission that this vessel is eligible to have L.M.C. 9.91 recorded.

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

Lloyd's Register Foundation