

## REPORT ON MACHINERY.

Port of WEST HARTLEPOOL.

WED. 19 JUL 1900

Received at London Office 18

No. in Survey held at

H. Hartlepool

Date, first Survey

17<sup>th</sup> June

Last Survey

30<sup>th</sup> May 1900

(Number of Visits)

16

31 on the

S.S. "Malaga"

ster J.B. Res

Built at H. Hartlepool

By whom built R. Gray &amp; Co.

Gross 1614

Net 1024

When built 1876

ines made at

Stockton

By whom made

Blair &amp; Co. Ltd.

when made

1876

lers made at

H. Hartlepool

By whom made

Central Marine Engine Works, Ltd.

when made

1900

istered Horse Power

Owners

D. Hall Junr &amp; Co

Port belonging to

London

n. Horse Power as per Section 28

160

Is Electric Light fitted

✓

INES, &amp;c.—Description of Engines

No. of Cylinders

No. of Cranks

meter of Cylinders 32 and 38 3/4

Length of Stroke 39

Revolutions per minute

Diameter of Screw shaft as per rule

meter of Tunnel shaft

as per rule

Diameter of Crank shaft journals

Diameter of Crank pin

Size of Crank webs

meter of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

of Donkey Engines

Sizes of Pumps

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

Engine Room

In Holds, &amp;c.

of bilge injections

sizes

Connected to condenser, or to circulating pump

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

all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

they each fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

at pipes are carried through the bunkers

How are they protected

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

the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

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

Is the screw shaft tunnel watertight

fitted with a watertight door

worked from

LERS, &amp;c.—

(Letter for record (S))

Total Heating Surface of Boilers

2476

Is forced draft fitted

No

and Description of Boilers

Two Simple ended Steel

Working Pressure

80 lb

Tested by hydraulic pressure to

160 lb

of test

25.5.00

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

350

No. and Description of safety valves to

boiler

Two Spring

Area of each valve

9.62

Pressure to which they are adjusted

84 lb

Are they fitted

easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

14"

Mean diameter of boilers

13.0"

th 9.6

Material of shell plates

Steel

Thickness

3/4

Description of riveting: circum. seams

None

long. seams

B.B. Straps

eter of rivet holes in long. seams

3/8

Pitch of rivets

3 3/8

Lap of plates or width of butt straps

9 1/2

centages of strength of longitudinal joint

rivets

70.6

Working pressure of shell by rules

90 lb

Size of manhole in shell

16 x 12

of compensating ring

Flanged

No. and Description of Furnaces in each boiler

3 Plain

Material

Steel

Outside diameter

3.0

th of plain part

top

6.0

Thickness of plates

crown

15/32

Description of longitudinal joint

B.B. Straps

No. of strengthening rings

4 1/2

king pressure of furnace by the rules

92

Combustion chamber plates: Material

Steel

Thickness: Sides

1/2

Back

1/2

Top

1/2

Bottom

15 3/32

i of stays to ditto

Sides

10 1/4

Back

10

Top

10 1/2

If stays are fitted with nuts or riveted heads

None

Working pressure by rules

80

erial of stays

Steel

Diameter at smallest part

1.38

Area supported by each stay

95"

Working pressure by rule

126 lb

End plates in steam space:

erial

Steel

Thickness

15/16

Pitch of stays

19.20 1/2

How are stays secured

B.B. Straps

Working pressure by rules

106

Material of stay

Steel

eter at smallest part

2.41

Area supported by each stay

389

Working pressure by rules

105 lb

Material of Front plates at bottom

Steel

kness

2 1/2

Material of Lower back plate

Steel

Thickness

5/8

Greatest pitch of stays

14 3/4

Working pressure of plate by rules

87

eter of tubes

3 1/4

Pitch of tubes

4 1/2

Material of tube plates

Steel

Thickness: Front

2 1/32

Back

5/8

Mean pitch of stays

9

h across wide water spaces

14 1/4

Working pressures by rules

81

Girders to Chamber tops: Material

Steel

Depth and

ness of girder at centre

7 x 1"

Length as per rule

2.5"

Distance apart

10 1/2

Number and pitch of Stays in each

Two

9"

king pressure by rules

86

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

ately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

fined with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None

None

None

None

None

None

None

None

None

None

None

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None

None

None

None

None

None

None

None

None

None

None

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None

None

None

None

None

None

None

None

None

None

None

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None

None

None

None

None

None

None

None

None

None

None

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None

None

None

None

None

None

None

None

None

None

None

king pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

None

None

None



**DONKEY BOILER—** Description *Vertical with cross tubes.*  
 Made at *Stockton* By whom made *Riley Bros.* When made *23/6/0* Where fixed *Stoke hold.*  
 Working pressure *80 lbs.* Tested by hydraulic pressure to *160 lbs.* No. of Certificate *2226* Fire grate area *280* Description of safety valves *Spring direct*  
 No. of safety valves *2* Area of each *4.92* Pressure to which they are adjusted *80 lbs.* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6'-6"* Length *13'-6"* Material of shell plates *steel* Thickness *7/16"*  
 Description of riveting long. seams *D. riv. lap.* Diameter of rivet holes *13/16"* Whether punched or drilled *punched* Pitch of rivets *2 1/2"*  
 Lap of plating *4 1/2"* Per centage of strength of joint *54.8* Thickness of shell crown plates *9/16"* Radius of do. *5 ft* No. of Stays to do. *7*  
 Dia. of stays. *1 1/2"* Diameter of furnace Top *4'-11"* Bottom *5'-6 1/2"* Length of furnace *5'-0"* Thickness of furnace plates *1 1/2"* Description of joint *lap single* Thickness of furnace crown plates *19/32"* Stayed by *as above* Working pressure of shell by rules *84 lbs*  
 Working pressure of furnace by rules *99 lbs.* Diameter of uptake *16"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

*Wm B. Borrowman*  
MANAGER.

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

*1900. Jan. 12. 17. 18. Feb. 16. Mar. 16. 21. Apr. 3. 10. 11. 23. May 1. 3. 9. 17. 25. 30.*  
*16*

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

**ENGINES**—Length of stern bush \_\_\_\_\_ Diameter of crank shaft journals *as per rule* \_\_\_\_\_ Diameter of thrust shaft under collars *as fitted* \_\_\_\_\_

**BOILERS**—Range of tensile strength *26-30* Are they welded or flanged *both.* **DONKEY BOILERS**—No. *one* Range of tensile strength *24-32*

Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *No.*

*The main boilers have been specially surveyed during construction. The material and workmanship good and when finished were tested to 160 lbs hydraulic pressure and found satisfactory.*

The amount of Entry Fee. . . £ : : When applied for, *17-7-1900*  
 Special . . . . . £ *8* : :  
 Donkey Boiler Fee . . . . £ : : When received, *11/8/00*  
 Travelling Expenses (if any) £ : : *11/8/00*

Committee's Minute

Assigned

FRI. 20 JUL 1900

*Richard H. Smith*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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*Screw shaft examined: Stern bush renewed.*

Certificate (if required) to be sent to

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