

## REPORT ON MACHINERY.

No. 12843

Port of West Hartlepool

IMUK. 1 MAR 1906

Received at London Office

No. in Survey held at West Hartlepool Date, first Survey 11th Sept. 1905 Last Survey 20th Feby. 1906

Reg. Book.

Shipped on the

Steel screw steamer Harperley(Number of Visits 8)Gross 3990.0Net 2565.95When built 1906

Master

J. Holman

Built at

West Hartlepool

By whom built

W. Gray & Co. Ltd

Engines made at

West Hartlepool

By whom made

General Marine & Works

when made

1906

Boilers made at

West Hartlepool

By whom made

General Marine & Works

when made

1906

Registered Horse Power

Owners

J. H. Harrison & Co.

Port belonging to

London

Nom. Horse Power as per Section 28

318

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

NoENGINES, &c.—Description of Engines Triple CompoundNo. of Cylinders ThreeNo. of Cranks ThreeDia. of Cylinders 26" 42" 70" Length of Stroke 45 Revs. per minute 65

Dia. of Screw shaft

as per rule 14.4Material of Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Yes

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

Yes

If two

liners are fitted, is the shaft lapped or protected between the liners

YesLength of stern bush 62"

Dia. of Tunnel shaft

as per rule 13.7

Dia. of Crank shaft journals

as per rule 13.3

Dia. of Crank pin

14"

Size of Crank webs

2 1/4" x 8"

Dia. of thrust shaft under

collars 14"

Dia. of screw

17.9"

Pitch of screw

16:6No. of blades 4

State whether moveable

No

Total surface

98 sq ft

No. of Feed pumps

Two

Diameter of ditto

3 1/2"

Stroke

28"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

4 1/2"

Stroke

28"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

12" x 10" & 6" x 5"

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

Light 3 1/2" & Heavy 3 1/2"

In Engine Room

Iron 3 1/2"

In Holds, &amp;c.

Light 3 1/2" & Heavy 3 1/2"

No. of bilge injections

Two

sizes

6 1/2"

Connected to condenser, or to circulating pump

Yes

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

Yes 3 1/2"

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

Yes

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

Yes

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

Yes

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

None

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

Yes

Is the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top Platform

OILERS, &amp;c.—

(Letter for record R)

Total Heating Surface of Boilers

5542

Is forced draft fitted

No

No. and Description of Boilers

Two 4 cyl Indirect Cyl. Boilers

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

20/1/06

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

67.74 sq ft

No. and Description of safety valves to

each boiler

Two Spring

Area of each valve

9.62 sq ft

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

17"

Mean dia. of boilers

16.6"

Length

11'0"

Material of shell plates

Steel

Thickness

1/2"

Range of tensile strength

27,500

Are they welded or flanged

both

Descrip. of riveting: cir. seams

stitching

Diameter of rivet holes in long. seams

10 1/2"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

20 1/2"

Per centages of strength of longitudinal joint

88.4

Size of compensating ring

Flanged

No. and Description of Furnaces in each boiler

Three Bunsen

Material

Steel

Outside diameter

48 1/2"

Length of plain part

top 1'0"

Thickness of plates

10 1/2"

Description of longitudinal joint

welded

No. of strengthening rings

stitching

Working pressure of furnace by the rules

191 lb

Combustion chamber plates: Material

Steel

Thickness: Sides

10 1/2"

Back

10 1/2"

Pitch of stays to ditto: Sides

8 1/2" x 8"

Back

9 1/2" x 8"

Top

9 1/2" x 8"

If stays are fitted with nuts or riveted heads

Yes

Working pressure by rules

185 lb

Material of stays

Iron

Diameter at smallest part

1 1/2"

Area supported by each stay

9.8 sq ft

Working pressure by rules

185 lb

End plates in steam space:

Yes

Material

Steel

Thickness

1 1/2"

Pitch of stays

23" x 19 1/2"

How are stays secured

stitching

Working pressure by rules

185 lb

Material of stays

Steel

Diameter at smallest part

3 3/4"

Area supported by each stay

23" x 19 1/2"

Working pressure by rules

185 lb

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

1"

Greatest pitch of stays

17 1/2"

Working pressure of plate by rules

180 lb

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/2"

Material of tube plates

Steel

Thickness: Front

1"

Back

1 1/2"

Mean pitch of stays

9"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

185 lb

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9" x 1 1/2"

Length as per rule

31 1/2"

Distance apart

9"

Number and pitch of Stays in each

Three 8"

Working pressure by rules

185 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

Pitch of rivets

Working pressure of shell by rulesDiameter of flueMaterial of flue platesThicknessstiffened with ringsDistance between ringsWorking pressure by rulesEnd plates: ThicknessHow stayedWorking pressure of end platesArea of safety valves to superheaterAre they fitted with easing gearYesYesYesYesYesYesYesYesYesYesYes



DONKEY BOILER— No. *one* Description *Cylindrical*  
Made at *Stockton* By whom made *J. Ludman & Co.* When made *1906* Where fixed *Blackpool*  
Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *2592* Fire grate area *32 sq ft* Description of safety valves *Two lifting*  
No. of safety valves *2* Area of each *8.29* Pressure to which they are adjusted *90 lb* If fitted with easing gear *No* If steam from main boilers  
enter the donkey boiler *No* Dia. of donkey boiler Length Material of shell plates Thickness Range of te  
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 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  
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:— *The top end bolts. The bottom end bolts. The main beam*  
*bolts. One set coupling bolts. One set feed pump valves one set safety pump valves*  
*one set of pressure piston springs. Piston rods. Bolts nuts etc*

FOR THE CENTRAL MARINE ENGINE WORKS.

(W. & Co. 3d.)

The foregoing is a correct description,

*Wm. S. Porswance*

Manufacturer.

MANAGER.

Dates During progress of work in shops— 1905. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 1906. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31.  
of Survey During erection on board vessel— 1905. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 1906. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31.  
while building Total No. of visits 86

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

“ “ “ donkey “ “ “ *Yes*

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

*The Copper Main Steam pipes have been tested to 1450 lb*  
*and with bend tests found good.*

*The Machinery and Boilers of this steamer have*  
*been constructed under Special Survey and placed on board*  
*in accordance with the Society's Rules. They are now in my*  
*opinion in safe working condition and the case is respectfully*  
*submitted for the certification + L.N.C. 2. 06. in the Register*  
*Book*

It is submitted that  
this vessel is eligible for  
THE RECORD L.N.C. 2. 06

*Wm. S. Porswance*  
1. 3. 06

*Wm. S. Porswance*  
1. 3. 06

The amount of Entry Fee. £ 3 :  
Special ... .. £ 37 : 18  
Donkey Boiler Fee ... .. £ :  
Travelling Expenses (if any) £ :  
When applied for, 28. 2. 06  
When received, 28. 2. 06

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

Committee's Minute

FRI. 2 MAR 1906

Assigned *+ L.N.C. 2. 06.*

MACHINERY CERTIFICATE  
WRITTEN.



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Foundation