

REPORT ON MACHINERY.

No. 59555

Received at London Office

SAT. 7 JAN 1911

Date of writing Report

19

When handed in at Local Office JAN 6 1911

Port of Newcastle on Tyne

To. in Survey held at

Newcastle on Tyne

Date, First Survey

5th April 1911

Reg. Book.

on the

S.S. "Harmattan"

(Number of Visits 55)

Gross 4791
Net 3046

Master

Built at

Walker

By whom built

Swan Hunter & Wigham Richardson

When built

1911

Engines made at

Walker

By whom made

Swan Hunter & Wigham Richardson

when made

1911

Boilers made at

Walker

By whom made

ditto

when made

Registered Horse Power

Owners

J. & C. Harrison Ltd

Port belonging to

London

Nom. Horse Power as per Section 28

421

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Inverted triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26", 42 1/2", 70"

Length of Stroke

48"

Revs. per minute

65

Dia. of Screw shaft

as per rule 14.66

Material of screw shaft

steel

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

Yes

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

Length of stern bush

5' 0"

Dia. of Tunnelshaft

as per rule 12.98

as fitted 13 1/2"

Dia. of Crank shaft journals

as per rule 13.6

as fitted 13 1/2"

Dia. of Crank pin

13 1/2"

Size of Crank webs

2 1/2 x 5 1/2"

Dia. of thrust shaft under

collars

14 1/2"

Dia. of screw

18" 0"

Pitch of Screw

17" 0"

No. of Blades

4

State whether moveable

no

Total surface

102 sq

No. of Feed pumps

2

Diameter of ditto

3 1/2"

Stroke

28"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

28"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3

Sizes of Pumps 9x11x10; 7x5x8; 6x4x6

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

In Engine Room

4 of 3 1/2" + 1 of 2 1/2" tunnel well

In Holds, &c.

2 of 3 1/2" to each

No. of Bilge Injections

1

size

5"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & 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

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

nil

How are they protected

Yes

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

Dates of examination of completion of fitting of Sea Connections

7.9.10

of Stern Tube

7.9.10

Screw shaft and Propeller

9.9.10

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from top platform

BOILERS, &c.—(Letter for record)

7

Manufacturers of Steel

J. Spencer & Sons

Total Heating Surface of Boilers

5774 sq

Is Forced Draft fitted

Yes

No. and Description of Boilers

2 S.E. Cyl^l Mult^m

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

27.10.10

No. of Certificate

8051

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.5 sq

No. and Description of Safety Valves to

each boiler

2 Spring Patent

Area of each valve

12.56 sq

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

15.9 3/8"

Length

12' 0"

Material of shell plates

steel

Thickness

1 3/32"

Range of tensile strength

28 3/4/32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d x lap

long. seams

L & d. r. s.

Diameter of rivet holes in long. seams

1 7/16"

Pitch of rivets

9 5/8"

Lap of plates or width of butt straps

2 1/2"

Per centages of strength of longitudinal joint

rivets 89.01

plate 85

Working pressure of shell by rules

207.7 lbs

Size of manhole in shell

16 x 12

Size of compensating ring

9 x 1 13/32"

No. and Description of Furnaces in each boiler

3 Morrison

Material

steel

Outside diameter

49 3/4"

Length of plain part

top

bottom

Thickness of plates

crowns 39 1/16"

bottom 36 1/16"

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

202 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

2 1/32"

Back

5 1/16"

Top

2 1/32"

Bottom

1 5/16"

Pitch of stays to ditto: Sides

7 1/2 x 7 1/2"

Back

7 1/2 x 7 1/2"

Top

7 1/2 x 7 1/2"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

245 lbs

Material of stays

Iron

Diameter at smallest part

2-03"

Area supported by each stay

62.0 sq

Working pressure by rules

245 lbs

End plates in steam space:

Material

steel

Thickness

1"

Pitch of stays

17 x 15 1/2"

How are stays secured

d x w.

Working pressure by rules

193.5 lbs

Material of stays

steel

Diameter at smallest part

5.56"

Area supported by each stay

263.5 sq

Working pressure by rules

220 lbs

Material of Front plates at bottom

steel

Thickness

3/32"

Greatest pitch of stays

12 1/2 x 7 1/2"

Thickness

3/32"

Material of Lower back plate

steel

Thickness

7/8"

Working pressure of plate by rules

256.4 lbs

Mean pitch of stays

11 1/4 x 7 1/2"

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4 x 3 3/4"

Material of tube plates

steel

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safe _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile 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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end, 2 Main bearing and one set of coupling bolts, 1 set feed and bilge pump valves, 1 set feed and ballast donkey valves, 6 Piston bolts & nuts, 1 Propeller, 1 set piston springs for 1 P.M.P. pistons, 1 P piston slide Valve, bolts & nuts assorted and iron of sizes*

FOR The foregoing is a correct description,
 SWAN, HUNTER & WIGLEY RICHARDSON, LTD.
 Manufacturer.

Dates of Survey while building

During progress of work in shops	At 5.18.21.25. May 3.12.19.25.30. Jun 3.6.9.15.16.17.29. Jul 5.11.14.19.20.25.29. Aug 2.10.15.17.19.23.30. Sep 1.15.15. Oct 6.19.21.27. Nov 2.11.18.19.29.30. Dec 2.6.8.12.14.16.21.24.29. Jan 1911
During erection on board vessel	
Total No. of visits	55

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

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *16.6.10* Slides *14.7.10* Covers *20.7.10* Pistons *14.7.10* Rods *14.7.10*

Connecting rods *14.7.10* Crank shaft *28.6.10* Thrust shaft *28.7.10* Tunnel shafts *5.7.10* Screw shaft *28.7.10* Propeller *29.7.10*

Stern tube *28.7.10* Steam pipes tested *16.12.10* Engine and boiler seatings *7.9.10* Engines holding down bolts *6.12.10*

Completion of pumping arrangements *28.12.10* Boilers fixed *6.12.10* Engines tried under steam *5.1.11*

Main boiler safety valves adjusted *28.12.10* Thickness of adjusting washers *P.P 5/16, P.S 1/4, S.P 9/32, S.S 5/16*

Material of Crank shaft *steel* Identification Mark on Do. *5318KH* Material of Thrust shaft *steel* Identification Mark on Do. *3705P*

Material of Tunnel shafts *steel* Identification Marks on Do. *Rnc. 5/16* Material of Screw shafts *steel* Identification Marks on Do. *3706P*

Material of Steam Pipes *steel* Test pressure *500 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery of this vessel has been constructed under special survey the workmanship and materials used are both of good quality, the Engines have been tried under steam ahead & astern and worked satisfactorily*

The owners representative decided to have the safety valves adjusted to 185 for 180 lbs, instead of 190 lbs as we subsequently approved of by the Committee for these Boilers

I beg to recommend that this vessel is eligible in my opinion to have the record **L.M.C. 1.11** in the Register Book

It is submitted that this vessel is eligible for THE RECORD + LMC 1.11
 F.D.

J.W.D. 9/11
 F.D.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, JAN 6 1911

Special .. £ 41 : 1 : 0

Donkey Boiler Fee .. £ 2 : 2 : 0 When received, 9.1.1911

Travelling Expenses (if any) £ : : : TUE. 10 JAN 1911

Committee's Minute
 Assigned + L.M.C. 1.11
 F.D.

