

REPORT ON MACHINERY.

No. 6250

Port of

Belfast

Received at London Office

MON. JAN 14 1907

No. in Survey held at

Belfast

Date, first Survey 1906. May 21

Last Survey 8 Jan 1907

Reg. Book.

on the

S.S. Sierra Leone

(Number of Visits 48)

Master R. Minto

Built at

Belfast

By whom built

Harland & Wolff L^d

Tons

Gross 3730

Net 2327

When built 1907

Engines made at

Belfast

By whom made

Harland & Wolff L^d

when made

1907

Boilers made at

By whom made

when made

Registered Horse Power

Owners Dutch & African S. N. Co. L^d

Port belonging to London

Nom. Horse Power as per Section 28

528

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26-44-74

Length of Stroke

48

Revs. per minute

76

Dia. of Screw shaft

as per rule 14.98

Material of

S. 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

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

If two

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

Yes

Length of stern bush

68

Dia. of Tunnel shaft

as per rule 13.7

as fitted 14.0

Dia. of Crank shaft journals

as per rule 14.38

as fitted 14.75

Dia. of Crank pin

15

Size of Crank webs

21x10 3/4

Dia. of thrust shaft under

collars

14 3/4

Dia. of screw

17-8

Pitch of Screw

18-0

No. of Blades

4

State whether moveable

Yes

Total surface

84 1/2 sq. ft.

No. of Feed pumps

2

Diameter of ditto

4 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

4

SIZES OF PUMPS

1 Waubert 8x10 1/2 x 18

1 Waubert 7 1/2 x 5 x 12

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

In Engine Room 3-3 1/2

1 West 9x12 1/2

In Holds, &c. 4-3 1/2

4-3

No. of Bilge Injections

1

sizes

8

Connected to condenser, or to circulating pump

Pump

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

None

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

Below

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

Fore hold suction

How are they protected

Wood casings

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

7-10-06

of Stern Tube

7-10-06

Screw shaft and Propeller

7-10-06

Is the Screw Shaft Tunnel watertight

Stated due

Is it fitted with a watertight door

Yes

worked from

Upper deck

BOILERS, &c.—(Letter for record 5)

Manufacturers of Steel

W. Colville Sons L^d

Total Heating Surface of Boilers

7395 sq. ft.

Forced Draft fitted

Yes

No. and Description of Boilers

8 Single End. Cylind.

Working Pressure

205 lbs

Tested by hydraulic pressure to

410 lbs

Date of test

19-11-06

No. of Certificate

388

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

57 1/2 sq. ft.

No. and Description of Safety Valves to

each boiler

2-Direct Springs

Area of each valve

8'29 sq. in.

Pressure to which they are adjusted

205 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers and bunkers

on woodwork

Hunt 5 ft

Mean dia. of boilers

14-5

Length

11-9

Material of shell plates

Steel

Thickness

1 1/2

Range of tensile strength

29-32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Lap

Wide

long. seams

Butt

Diameter of rivet holes in long. seams

1 1/2

Pitch of rivets

9 1/2

Top of plates or width of butt straps

22 1/4

Per centages of strength of longitudinal joint

rivets 94.4

plate 84.2

Working pressure of shell by rules

236 lbs

Size of manhole in shell

16 x 12

Size of compensating ring

No. 1

No. and Description of Furnaces in each boiler

3-Brauns

Material

Steel

Outside diameter

46 7/8

Length of plain part

top 9

bottom 9

Thickness of plates

crown 3 1/2

bottom 3 1/2

Description of longitudinal joint

Weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

211 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

19-21

Back

19

Top

19-21

Bottom

2

Pitch of stays to ditto: Sides

7 1/2 x 7 3/8

Back

7 1/2 x 7 3/8

Top

7 1/2 x 7 3/8

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

209 lbs

Material of stays

Steel

Diameter at smallest part

1 3/8 x 1 5/8

Area supported by each stay

5 7/8

Working pressure by rules

232 lbs

Are plates in steam space:

Yes

Material

Steel

Thickness

1 1/8

Pitch of stays

8 1/2 x 15 1/4

How are stays secured

Nuts

Working pressure by rules

238 lbs

Material of stays

Steel

Diameter at smallest part

2 3/8 x 2 3/8

Area supported by each stay

286 3/4

Working pressure by rules

225 lbs

Material of Front plates at bottom

Steel

Thickness

1 5/16

Material of Lower back plate

Steel

Thickness

1 5/16

Greatest pitch of stays

12 3/4

Working pressure of plate by rules

465 lbs

with 15 x 15 x 15

Nuts

Diameter of tubes

2 1/2

Pitch of tubes

3 3/4 x 3 3/4

Material of tube plate

Steel

Thickness: Front

1 5/16

Back

1 3/16

Mean pitch of stays

7 1/2 x 7 1/2

Pitch across wide water spaces

13 3/4

Working pressures by rules

386 lbs

Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 x (8 x 2)

Length as per rule

29 1/2

Distance apart

8 x 9 1/4

Number and pitch of stays in each

3-7 3/8

Working pressure by rules

215 lbs

Superheater or Steam chest; how connected to boiler

Yes

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

holes

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 Safety
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	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— 2 Propeller blades; 14, P. & L. P. slide valve spindles
Pair crank pin bushes; Impeller for Cent. Circ. Pump; air pump
rod & bucket; 20 Condenser tubes; escape valve & spindles; half set
fire bars set 3" & all gear to Lloyd's Rules extra.

The foregoing is a correct description,

Manufacturer.

Harland & Wolff Ltd.
on 10th

Dates of Survey while building
During progress of work in shops— 1906. May 21, 29, 31 June 8, 11, 14, 19, 25 July 6. Aug 3, 9, 14, 24, 30. Sept 7.
During erection on board vessel— 6, 8, 14, 19, 26. Oct 4, 8, 10, 11, 14, 19 Nov 5, 8, 12, 1907
Total No. of visits 48.

Is the approved plan of main boiler forwarded to the Committee with 33. Harris.

Dates of Examination of principal parts—Cylinders 11-6-06 Slides Covers 10-11-06 Pistons Rods
Connecting rods 27-11-06 Crank shaft 8-7-06 Thrust shaft Tunnel shafts Screw shaft 2-11-06 Propeller 30-10-06
Stern tube 26-10-06 Steam pipes tested 15-12-06 Engine and boiler seatings 19-12-06 Engines holding down bolts 19-12-06
Completion of pumping arrangements 13-12-06 Boilers fixed 13-12-06 Engines tried under steam 20-12-06
Main boiler safety valves adjusted 20-12-06 Thickness of adjusting washers 13-14
Material of Crank shaft S. Steel Identification Mark on Do. 440 YDS Material of Thrust shaft do Identification Mark on Do. do
Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. do
Material of Steam Pipes Solid drawn steel Test pressure 640 lbs

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The materials and the workmanship are of good description throughout, and on trial in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 1-07. with notation Forced Draft & Electric Light.

This vessel's machinery is a duplicate of that fitted in the S.S. Harris.

It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 1.07. F.D. ELEC. LIGHT.

The amount of Entry Fee. £ 3 : - : When applied for.
Special .. £ 46 : 8 : 11-1-07
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : : 16-1-07

Committee's Minute

Assigned

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



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MACHINERY CERTIFICATE WRITTEN.

L.M.C. 1.07
F.D. Elec. Light

Certificate (if required) to be sent to the office

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