

Rpt. 4.

REPORT ON MACHINERY.

No. 28066

Received at London Office

FRI. 8 APR. 1921

SUNDERLAND

Date of writing Report 22-3-1921 When handed in at Local Office 6 APR 1921 Port of

No. in Survey held at
Reg. Book.

SUNDERLAND.

Date, First Survey

31 Oct. 1919

Last Survey

12 May 1921

80182 on the *Steel* S.S. LANCASTRIAN PRINCE

(Number of Visits Sides)

Mdb. 22

Gross 3478

Net 1482

Master (red appointed)

Built at Middlesbrough

By whom built Furness Shipbuilding Co. Ltd (N° 23)

When built 1921

Engines made at Sunderland

By whom made

Richardsons, Westgarth & Co. Ltd (N° 2158)

When made 1921

Boilers made at do

By whom made do

do

do

When made 1921

Registered Horse Power

Owners

Prince Line Ltd

Port belonging to

Newcastle

Nom. Horse Power as per Section 28

538

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, 43, 73

Length of Stroke 48

Revs. per minute

70

Dia. of Screw shaft

as per rule 14.4

Material 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

If two

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

Length of stern bush 5-2 1/4

Dia. of Tunnel shaft

as per rule 13.06

Dia. of Crank shaft journals

as per rule 13.7

as fitted 14.1

Dia. of Crank pin

14 1/2

Size of Crank webs

2 1/2 x 9

Dia. of thrust shaft under

collars 14 1/4

Dia. of screw

17-3

Pitch of Screw

18-0

No. of Blades

4

State whether moveable

No

Total surface

95 sq

No. of Feed pumps

2

Diameter of ditto

4 1/2

Stroke

27

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 1/2

Stroke

27

Can one be overhauled while the other is at work

No. of Donkey Engines

2

Sizes of Pumps

8 x 5 1/2 x 8

9 x 11 x 10

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

No. 1 - 2 of 3 1/2

No. 2 - 2 of 3 1/2

No. 3

1 of 2 1/2 in Tunnel Well

Is a separate Donkey Suction fitted in Engine room & size

Yes - 3 1/2

In Engine Room

4 @ 3 1/2

In Holds, &c.

No. 1 - 2 of 3 1/2

No. 2 - 2 of 3 1/2

No. 3

1 of 2 1/2 in Tunnel Well

No. of Bilge Injections

1 size 8

Connected to condenser, or to circulating pump C.P.

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

Yes

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

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

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

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

Yes

worked from

Upper platform

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

John Spencer & Sons, Ltd.

Total Heating Surface of Boilers

8166 sq

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 cylindrical multitubular (S. End)

Working Pressure

180

Tested by hydraulic pressure to

360

Date of test

1-2-21

No. of Certificate

3749

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

64 sq

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

12.5 sq

Pressure to which they are adjusted

185

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1-6

Mean dia. of boilers

15-9

Length

12-0

Material of shell plates

S.

Thickness

19

Range of tensile strength

28 3/4 to 32 3/4

Are the shell plates welded or flanged

long. seams

D.B.S., T.R.

Diameter of rivet holes in long. seams

19

Pitch of rivets

8 3/4

Lap of plates or width of butt straps

1-6 1/4

Descrip. of riveting: cir. seams

T.R.

Per centages of strength of longitudinal joint

plate 85.35

Working pressure of shell by rules

Size of compensating ring

7 and 8 x 19

No. and Description of Furnaces in each boiler

3 Deighton

Material

S.

Outside diameter

4-13 3/4

Length of plain part

top 19

Thickness of plates

bottom 21

Description of longitudinal joint

Working pressure of furnace by the rules

215

Combustion chamber plates: Material

S.

Thickness: Sides

19

Back

19

Top

19

Bottom

27

Working pressure by rules

Pitch of stays to ditto: Sides

8 3/4 x 7 1/2

Back

8 3/4 x 8

Top

8 3/4 x 7 1/2

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

206

End plates in steam space:

Material of stays

S.

Thickness

Area at smallest part

1 7/32

Area supported by each stay

6 1/4

Working pressure by rules

184

Material of stays

S.

Area at smallest part

6 1/32

Area supported by each stay

318

Working pressure by rules

Thickness

7

Material of Lower back plate

S.

Thickness

13

Greatest pitch of stays

13 1/2 x 8

Working pressure of plate by rules

185.5

Diameter of tubes

2 1/2

Pitch of tubes

Pitch across wide water spaces

13 1/2

Working pressures by rules

185

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre

9 x 1 1/2

Length as per rule

2-6 25/32

Distance apart

8 3/4

Number and pitch of stays in each

Working pressure by rules

216

Steam dome: description of joint to shell

%

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

SUPERHEATER. Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Date of Test

Is Easing Gear fitted

Diameter of Safety Valve

Pressure to which each is adjusted

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IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two Connecting rod top and bottom end bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts and nuts, one set of feed and bilge pump valves, bolts, nuts, and iron of various sizes, one propeller shaft, one propeller.

The foregoing is a correct description,
FOR RICHARDSONS, WESTGARTH & CO., LTD.

Richard Russell

ASSISTANT MANAGER

Manufacturer.

Dates of Survey while building
During progress of work in shops -- 1919. Oct 31. 1920. May 14. 21 Jun 14 Jul 9 19. 30 Aug 13 16 Sept 3 Oct 5. 20. 22. 29 Nov. 12. 16.
During erection on board vessel -- 25. 26 Dec. 1. 7. 8. 15. 17. 20. 23 24. 31 Jan 4. 13. 14. 17. 27 Feb. 15. 16. 17. 23 Mar. 5. 8. 11. 15. 17. 21. (4)
Total No. of visits 65
Mdb. 1920. Nov. 8. 16. 24. 26 Dec. 6. 15. 21. Jan. 5. 11. 17. 24. 25. 31. Feb. 3. Mar. 31. Apr. 7. 12. 19. 26. May 6. 12.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 11-1-21 Slides 13-12-20 Covers 13-12-20 Pistons 8-12-20 Rods 5-10-20

Connecting rods 8-12-20 Crank shaft 7-6-20 Thrust shaft 26-11-20 Tunnel shafts 8-2-21 Screw shaft 17-1-21 Propeller 5-2-21

Stern tube 5-2-21 Steam pipes tested 13-7-20, 5-3-21 Engine and boiler seatings 24-11-21 Engines holding down bolts 5-3-21

Completion of pumping arrangements 12-5-21 Boilers fixed 23-2-21 Engines tried under steam 15-3-21

Completion of fitting sea connections 24-11-21 Stern tube 9-2-21 Screw shaft and propeller 10-2-21

Main boiler safety valves adjusted 15-3-21 Thickness of adjusting washers P. boiler - P. 5, S. 13/32, C. boiler - P. 7, S. 5/16, S. boiler - P. 1/2, S. 5/16

Material of Crank shaft Inf. Steel Identification Mark on Do. 6163 A B Material of Thrust shaft Inf. Steel Identification Mark on Do. 2158 E W.

Material of Tunnel shafts Iron Identification Marks on Do. 6220 A B Material of Screw shafts Iron Identification Marks on Do. 6220 A.

Material of Steam Pipes L.W. wrought iron Test pressure 540 lbs. sq. in.

Is an installation fitted for burning oil fuel Yes. Is the flash point of the oil to be used over 150° F. Yes.

Have the requirements of Section 49 of the Rules been complied with Yes, as approved.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel S.S. Delaware + Louisiana

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

The Machinery has been built and installed under Special Survey. The Materials and workmanship are good.

The vessel has returned to the Builders' yard for completion. To complete the survey, the Hold pumping connections and the Electric light installation to be examined.

Upon completion of Survey, this vessel's machinery is eligible in my opinion for Classification and the Record + LMC with date 5.21 in the Register Book

Pumping arrangement and Electric light installation satisfactorily completed

It is submitted that
this vessel is eligible for
THE RECORD. + LMC. 5.21 F.D. C.L.

FITTED FOR O.I. FUEL 5.21. F.P. ABOVE 150° F.

The amount of Entry Fee ... £ 6 :
Special ... £ 101 : 18 :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
When applied for, - 6 APR 1921
When received, 30 May 1921

Committee's Minute 10E JUN. 14 1921

Assigned + L.M.C. 5.21

CERTIFICATE WRITTEN

Lies for oil fuel 5.21. F. Above 150° F.



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