

Rpt. 4.

REPORT ON MACHINERY.

No. 15906

TUE. AUG. 2 1921

Date of writing Report

19

When handed in at Local Office

28th July 1921

Received at London Office

Port of

West Hartlepool

No. in Survey held at

West Hartlepool

Date, First Survey 30th July 1920.Last Survey 22nd July 1921.

Reg. Book.

on the

Steel Screw Steamer "Pencarrow"

(Number of Visits)

Tons

Gross

Net

Master

Built at

West Hartlepool

By whom built

Jennies' & Co. Ltd.

When built

1921

Engines made at

Hartlepool

By whom made

Richardsons, Westgate & Co. Ltd.

when made

1921

Boilers made at

Hartlepool

By whom made

Richardsons, Westgate & Co. Ltd.

when made

1921

Registered Horse Power

Owners

R. B. Chellaw

Port belonging to

Falmouth

Nom. Horse Power as per Section 28

402

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion (Vertical Cyls)

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

25 $\frac{1}{2}$ - 42 - 70

Length of Stroke

48

Revs. per minute

65

Dia. of Screw shaft

as per rule 14 $\frac{1}{2}$ as fitted 14 $\frac{1}{2}$

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

—

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

Length of stern bush

4'-10 $\frac{1}{4}$ "

Dia. of Tunnel shaft

as per rule 12 $\frac{1}{2}$

as fitted 13

Dia. of Crank shaft journals

as per rule 13 $\frac{1}{2}$ as fitted 13 $\frac{1}{2}$

Dia. of Crank pin

14

Size of Crank webs

8 $\frac{1}{2}$ x 20 $\frac{1}{2}$

Dia. of thrust shaft under

collars

14 $\frac{1}{2}$

Dia. of screw

14 $\frac{1}{2}$ x 6

Pitch of Screw

14 $\frac{1}{2}$ x 6

No. of Blades

4

State whether moveable

No

Total surface

93 $\frac{1}{2}$

No. of Feed pumps

Two

Diameter of ditto

3 $\frac{1}{4}$

Stroke

24

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

3 $\frac{3}{4}$

Stroke

24

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Four

Sizes of Pumps

one 6 $\frac{1}{2}$ x 4 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

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one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

one 8 $\frac{1}{2}$ x 6 x 6

one 10 x 11 x 10

In Engine Room

Three 3 $\frac{1}{2}$ " dia.one 2 $\frac{1}{2}$ " main eng direct

In Holds, &c.

Two in each hold 3 $\frac{1}{2}$ " x tunnel 2 $\frac{1}{2}$ "

No. of Bilge Injections

one size 4"

Connected to condenser, or to circulating pump

C.P.

Is a separate Donkey Suction fitted in Engine room & size

Yes 3 $\frac{1}{2}$ "

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

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

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

Yes

Is it fitted with a watertight door

Yes

worked from

Cylinder Grating

BOILERS, &c.—(Letter for record

S)

Manufacturers of Steel

J. Spencer & Sons Ltd. & Leeds Forge Co. Ltd.

Total Heating Surface of Boilers

6656 $\frac{1}{2}$ sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single Ended, Cyl & Mant.

Working Pressure

180 $\frac{1}{2}$ lb

Tested by hydraulic pressure to

360 $\frac{1}{2}$ lb

Date of test

23/12/20

No. of Certificate

3591

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

55.6 sq ft

No. and Description of Safety Valves to

each boiler

Two

Direct spring

Area of each valve

7.07 sq in

Pressure to which they are adjusted

Smallest distance between boilers or uptakes and bunkers or woodwork

24

Mean dia. of boilers

15-3

Length

11-0

Material of shell plates

Steel

Thickness

1 $\frac{1}{2}$ "

Range of tensile strength

28 $\frac{1}{2}$ to 32 $\frac{1}{2}$

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Lap & R.

long. seams

5735-TR

Diameter of rivet holes in long. seams

1 $\frac{1}{2}$ "

Pitch of rivets

8 $\frac{3}{8}$ "

Lap of plates or width of butt straps

1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x 1 $\frac{3}{4}$ 1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x 1 $\frac{3}{4}$

Per centages of strength of longitudinal joint

rivets 84.9

plate 85.45

Working pressure of shell by rules

182 $\frac{1}{2}$ lb

Size of manhole in shell

13 x 16 $\frac{1}{2}$

No. and Description of Furnaces in each boiler

3

Suspension

Material

Steel

Outside diameter

48 $\frac{1}{4}$ "

Length of plain part

top 4 $\frac{1}{2}$ x 1 $\frac{1}{2}$ bottom 4 $\frac{1}{2}$ x 1 $\frac{1}{2}$

Thickness of plates

crown 19

bottom 32

Description of longitudinal joint

Welded

No. of strengthening rings

—

Working pressure of furnace by the rules

193.8 $\frac{1}{2}$ lb

Combustion chamber plates: Material

Steel

Thickness: Sides

19 $\frac{1}{2}$ Back 19 $\frac{1}{2}$

Pitch of stays to ditto: Sides

4 $\frac{1}{2}$ x 8 $\frac{1}{4}$

Back

8 $\frac{1}{4}$ x 8

Top

4 $\frac{1}{2}$ x 8 $\frac{1}{4}$

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

180 $\frac{1}{2}$ lb

End plates in steam space:

Material of stays

Steel

Area at smallest part

13 $\frac{1}{2}$ "

Area supported by each stay

8 $\frac{1}{4}$ x 8

Working pressure by rules

180 $\frac{1}{2}$ lb

Material of stays

Steel

Thickness

F 1 $\frac{1}{2}$ "

Pitch of stays

F 14 x 20 $\frac{1}{4}$

How are stays secured

57N

Working pressure by rules

Area at smallest part

6.66 sq in

Area supported by each stay

14 x 21

Working pressure by rules

194 $\frac{1}{2}$ lb

Material of Front plates at bottom

Steel

Thickness

4 $\frac{1}{2}$ "

Material of Lower back plate

Steel

Thickness

2 $\frac{1}{2}$ "

Greatest pitch of stays

14 x 8

Working pressure of plate by rules

Diameter of tubes

3 $\frac{1}{2}$ "

Pitch of tubes

4 $\frac{1}{2}$ x 4 $\frac{1}{2}$

Material of tube plates

Steel

Thickness: Front

17 $\frac{1}{8}$ "

Back

25 $\frac{1}{2}$ "

Mean pitch of stays

11 $\frac{1}{2}$ x 9 $\frac{3}{8}$

Pitch across wide water spaces

14 $\frac{1}{2}$ "

Working pressures

IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

2 con rod top end bolts & nuts, 2 con rod bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set coupling bolts & nuts, 2 feed & 2 large pump valves, 1 set piston rings for HP cylinder & 24 spring lines, 120 assorted bolts & nuts, 6 iron bars assorted, 1 cast iron propeller, 1 main & 1 donkey check valve, 6 boiler tubes, 6 condenser tubes 12 ferrules, 1 ton fire bars, assorted studs, 6 gauge glasses 12 rings, Crank Shaft gauge.

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

L. S. Hingle

GENERAL MANAGER
(HARTLEPOOL WORKS)

Manufacturer: ☒

Dates of Survey while building: During progress of work in shops - - 1920. July 30. Aug. 12, 13, 17, 18, 20, 21. Sept. 8, 20, 23, 27, 28, 29. Oct. 4, 6, 11, 14, 15, 18, 21. Nov. 2, 4, 5, 9, 22, 23, 24, 25, 30. Dec. 1, 7, 8, 10, 13. During erection on board vessel - - 16, 20, 22, 24, 29. 1921. Jan. 10, 13, 14, 17, 19, 20, 27, 31. Feb. 1, 2, 4, 7, 11, 14, 16, 18, 21, 22, 24, 28. Mar. 7, 8, 9, 10, 14, 16, 17, 22, 30. Apr. 1, 5, 6, 11, 15. Total No. of visits 79.

Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 6/10/20 Slides 3/12/20 Covers 24/2/21 Pistons 18/8/20 Rods 30/7/20 Connecting rods 14/1/20 Crank shaft 13/1/20 Thrust shaft 17/1/20 Tunnel shafts 20/1/20 Screw shaft 14/1/21 Propeller 7/3/21 Stern tube 14/2/21 Steam pipes tested 5-4-21 Engine and boiler seatings 22-3-21 Engines holding down bolts 22-3-21 Completion of pumping arrangements 22-4-21 Boilers fixed 22-3-21 Engines tried under steam 6-4-21 Completion of fitting sea connections 6-4-21 Stern tube 9-3-21 Screw shaft and propeller 22-3-21 Main boiler safety valves adjusted 6-4-21 Thickness of adjusting washers Port Boiler P 3/2" S 3/8" Centre " P 3/2" S 7/16" Star " P 7/16" S 3/4" Material of Crank shaft steel Identification Mark on D. (L. 4. 11/20 6. 21/8 2. 24/11/20 R. 6. 5 S. 64 N. W. C.) Material of Thrust shaft steel Identification Mark on D. (L. 4. 11/20 6. 21/8 2. 24/11/20 R. 6. 5 S. 64 N. W. C.) Material of Tunnel shafts steel Identification Marks on D. (L. 4. 11/20 6. 21/8 2. 24/11/20 R. 6. 5 S. 64 N. W. C.) Material of Screw shafts steel Identification Marks on D. (L. 4. 11/20 6. 21/8 2. 24/11/20 R. 6. 5 S. 64 N. W. C.) Material of Steam Pipes Main Steam Steel, Aux Steam Copper Test pressure 540 lbs per sq in (main) 360 lbs aux. Is an installation fitted for burning oil fuel No 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

Is this machinery duplicate of a previous case Yes. If so, state name of vessel "Pengreep"
General Remarks (State quality of workmanship, opinions as to class, &c. An evaporator fitted, the shell of which was tested to 50 lbs, and the coils to 400 lbs per square inch by hydraulic pressure. This vessel's machinery has been built and installed under Special Survey and in accordance with the Rules. The materials and workmanship are good. On completion it was tested under full steam, found satisfactory, and is eligible in my opinion to have notation of L.M.C. 7.21.

It is submitted that
this vessel is eligible for
THE RECORD, + L.M.C. 7.21 C.L.

ReM
9/8/21

9/8/21

The amount of Entry Fee ... £ 5 : 0 : 0 When applied for, 29/7/21
Special ... £ 85 : 6 : 0
Donkey Boiler Fee ... £ : : 6-8-21
Travelling Expenses (if any) £ : : 9/6/21

Alfred & Robert Rae Miller
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 11th AUG. 1921
Assigned + L.M.C. 7.21 C.L.

MACHINERY CERT
WRITTEN



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Foundation