

REPORT ON MACHINERY.

No. 15854

Received at London Office

FRI. 10 DEC. 1920

of writing Report

19

When handed in at Local Office

9/12/

1920. Port of

WEST HARTLEPOOL

in Survey held at

West Hartlepool

Date, First Survey

21st Augt/19

Last Survey

2nd Dec^r

1920

Book.

on the

S.S. "City of Adelaide" (No 939)

(Number of Visits)

Tons

Gross

Net

ster

Built at

Dunderland

By whom built

Wear Shipyard of Wm Gray

When built

ines made at

West Hartlepool

By whom made

Central Marine Eng. Works

When made

1920

lers made at

ditto

By whom made

ditto

when made

1920

istered Horse Power

720

Owners

not for Reg Book

Port belonging to

ft Horse Power at Full Power

3500

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

BINE ENGINES, &c.—Description of Engines

Double reduction geared turbines

No. of Turbines

2

eter of Rotor Shaft Journals, H.P.

4 1/2"

L.P.

5 1/2"

Diameter of Pinion Shaft

Primary H.P. 6"

Secondary L.P. 13 1/2"

eter of Journals

Prim 4 1/2"

Sec 10 1/2"

Distance between Centres of Bearings

Primary 2-2 1/2"

Secondary 6-1 1/2"

Diameter of Pitch Circle

Prim H.P. 7.481"

Sec. 16.62"

eter of Wheel Shaft

15 1/2"

Distance between Centres of Bearings

6-7"

Diameter of Pitch Circle of Wheel

Prim 56.688"

Sec 84.579"

h of Face

Prim 15"

Sec 38 1/2"

Diameter of Thrust Shaft under Collars

15 1/2"

f Screw Shafts

one

Diameter of same

as per rule

15.1"

f Blades

4

State whether Moveable

yes

Total Surface

114 sq. ft.

Diameter of Rotor Drum, H.P.

L.P.

astern

ness at Bottom of Groove, H.P.

L.P.

Astern

Revs. per Minute at Full Power, Turbine

H.P. 3417

L.P. 2441

Propeller

88

Particulars of Blading.

EXPANSION	H.P. (Impulse)			L.P. Reaction			ASTERN.		
	Effective. HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1	1 1/4"	2-7 1/2"	2-8 1/2"	2 3/8"	2'-8.17"	4	1 1/4"	2'-7 1/8"	1 impulse
"	1 1/2"	2'-8 7/16"	1	3 7/16"	2'-9.545"	4	1 1/2"	2'-8 1/2"	"
"	1 3/4"	2'-8 7/16"	1	4"	2'-11.41"	4	1 3/8"	3'-7 1/8"	1
"	1 5/8"	2'-8 7/16"	1	2 3/4"	8'-9.9"	2	2 3/8"	3'-8 3/8"	1
"	1 7/8"	2'-8 1/2"	1	3 1/2"	3'-11.39"	2	1 7/8"	2'-11.025"	1 reaction
"	2 1/2"	2'-8 1/2"	1	4"	4'-0.38"	1	1 5/8"	3'-0.11"	1
"				4 3/4"	4'-1.87"	1	2 5/8"	3'-1.55"	1
"				5 3/8"	4'-3.61"	1	2 5/8"	3'-1.55"	1
"				6 3/4"	4'-5.84"	1	2 5/8"	3'-1.55"	1
"				6 3/4"	4'-5.84"	1	2 5/8"	3'-1.55"	1

and size of Feed pumps

See list of pumps

and size of Bilge pumps

attached.

and size of Bilge suction in Engine Room

Five of 3 1/2"

One of 3 1/2" in each cofferdam. Two of 2" in oil wells.

In Holds, &c. Two of 3 1/2" in each hold. one of 3" in

tunnel.

f Bilge Injections

1 sizes 11"

Connected to condenser, or to circulating pump

C.P.

a separate Donkey Suction fitted in Engine Room & size 3 1/2"

All the bilge suction pipes fitted with roses

yes

Are the roses in Engine room always accessible

yes

All connections with the sea direct on the skin of the ship

yes

Are they Valves or Cocks

both

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

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

Pipes are carried through the bunkers

none

How are they protected

yes

All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

yes

The Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

yes

Screw Shaft Tunnel watertight

see ship report

Is it fitted with a watertight door

yes

worked from upper grating

Boilers, &c.—(Letter for record

S)

Manufacturers of Steel

J. Spencer & Sons Ltd.

Heating Surface of Boilers

8946 sq. ft.

Is Forced Draft fitted

yes

No. and Description of Boilers

Three single ended

Working Pressure

225 lbs

Tested by hydraulic pressure to

450 lbs

Date of test

30.3.20

No. of Certificate

3569

Each boiler be worked separately

yes

Area of fire grate in each boiler

76.85 sq. ft.

No. and Description of Safety Valves to

Boiler

2 direct spring

Area of each valve

11.04 sq. in.

Pressure to which they are adjusted

230 lbs

Are they fitted with easing gear

yes

Least distance between boilers or uptakes and bunkers or woodwork

10 1/2"

Mean dia. of boilers

16-4 1/2"

Length

12-6

Material of shell plates

Steel

Tensile strength

28/30

Range of tensile strength

28/30

Are the shell plates welded or flanged

yes

Descrip. of riveting: cir. seams

J.R. lap

Lap of plates or width of butt straps

23 1/4"

Seams

J.R. 2BS

Diameter of rivet holes in long. seams

1 5/8"

Pitch of rivets

10 1/2"

Rivets

90.4

Working pressure of shell by rules

227 lbs

Size of manhole in shell

16 1/2" x 20 1/2"

Compensating ring

2-9 x 3-1 x 1 1/8"

No. and Description of Furnaces in each Boiler

4

Daghtons

Material

Steel

Outside diameter

3'-9 1/2"

Thicknes of plates

21"

Description of longitudinal joint

welded

No. of strengthening rings

11

Working pressure of furnace by the rules

235 lbs

Material

Steel

Thickness: Sides

23"

Back

23"

Top

23"

Bottom

11"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

226

Area supported by each stay

12 7/16 x 7 1/4"

Working pressure by rules

225 lbs

Material of stays

Steel

Thicknes of plates

1 1/4"

Material of Front plates at bottom

Steel

Working pressure of plate by rules

236 lbs

Pitch of stays

19 x 16"

Material of tube plates

Steel

Thickness: Front

1 3/2"

Back

1 3/2"

Mean pitch of stays

11 1/4 x 4 1/2"

Depth and

Number and pitch of stays in each

Three 9"

Working pressures by rules

234 lbs

Girders to Chamber tops: Material

Steel

Depth and

Distance apart

8 1/2"

Number and pitch of stays in each

Three 9"

Steam dome: description of joint to shell

none

10 of strength of joint

Diameter

Material

Steel

Description of longitudinal joint

welded

Diameter of rivet holes

1 5/8"

Pitch of rivets

10 1/2"

Crown plates: Thickness

1 1/2"

How stayed

yes

Working pressure of shell by rules

230 lbs

Material

Steel

Description of longitudinal joint

welded

Crown plates: Thickness

1 1/2"

How stayed

yes

Working pressure of shell by rules

230 lbs

Material

Steel

Description of longitudinal joint

welded

Crown plates: Thickness

1 1/2"

How stayed

yes

Working pressure of shell by rules

230 lbs

Material

Steel

Description of longitudinal joint

welded

Crown plates: Thickness

1 1/2"

How stayed

yes

SUPERHEATER. Type *Schmidt's* Date of Approval of Plan

Manchester report.

Tested by Hydraulic Pressure to

Date of Test *Manchester report.*

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

Diameter of Safety Valve *2"*

Pressure to which each is adjusted *235 lbs*

Is Easing Gear fitted *yes*

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded? *✓*

SPARE GEAR.

State the articles supplied:— *2 studs & nuts for each size of rotor bearings, for main gear wheel bearing & for pinion bearing. 10 gear wheel shaft coupling bolts & nuts 9, propeller shaft coupling bolts & nuts. Assorted bolts, studs and nuts. 2 halves bearing bushes for main gear wheel shafts. 8 ditto for rotor shafts. 6 ditto for pinion shafts. 1/2 set packing segments for rotor glands. 24 pads for rotors & Mitchell thrust blocks. 8 adjusting liners for same. 1 HP pinion 1 L.P. pinion. 2 propeller blades. 4 feed check valves. One set of valves for feed & bilge pumps. Various spare parts for other pumps & circ. & fan engines.*

The foregoing is a correct description,

FOR THE CENTRAL MARINE ENGINE WORKS,
(Ed. & Co. (1918) 38.)

On-site

Manufacturer.

MANAGING DIRECTOR, R.M.E.W.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits *16th.*

Is the approved plan of main boiler forwarded herewith *yes.*

Please return for duplicate

Dates of Examination of principal parts—Casings *8.12.19* to *5.3.20* Rotors *31.10.19* to *16.4.20* Blading *21.11.19* to *2.7.20* Gearing *19.7.20*
Rotor shaft *16.4.20* Thrust shaft *26.7.20* Tunnel shafts *19.7.20* Screw shaft *21.7.20* Propeller *29.7.20*
Stern tube *28.6.20* Steam pipes tested *27.20* to *11.11.20* Engine and boiler seatings *16.8.20* Engines holding down bolts *21.9.20*

Completion of pumping arrangements *1.12.20* Boilers fixed *27.9.20* Engines tried under steam *2.12.20*

Main boiler safety valves adjusted *25.11.20*

Thickness of adjusting washers *P 15" S 32" C S 7/16 S 3/16 Superheaters P 11" C 11" S 11"*

Material and tensile strength of Rotor shaft *S.M. Ingot Steel 34/38 tons*

Identification Mark on Do. *6183*

Material and tensile strength of Pinion shaft *Primary Nickel Stl. 40/45. Secondary 34/38 tons*

Identification Mark on Do. *6183*

Material of Wheel shaft *Ingot Stl.* Identification Mark on Do. *6183*

Material of Thrust shaft *Ingot Stl.* Identification Mark on Do. *6183*

Material of Tunnel shafts *Ingot Stl.* Identification Marks on Do. *6183*

Material of Screw shafts *Ingot Stl.* Identification Marks on Do. *6183*

Material of Steam Pipes *Lap welded steel*

Test pressure *675 lbs*

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*

Is this machinery a duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks

(State quality of workmanship, opinions as to class, &c.) *This vessel's machinery has been built and installed under Special Survey. The materials and workmanship are good. On completion it was satisfactorily tried under full steam at sea, and in my opinion is eligible to have the notation L.M.C. 12.20.*

The oil fuel installation was tried on one boiler and then disconnected, and she went away burning coal.

Is submitted that

this vessel is eligible for

THE RECORD. + LMC 12.20 F.D.

2 STEAM TURBINES GEARED TO 1 SCREW SHAFT.

FITTED FOR OIL FUEL. 12.20. FP ABOVE 150°F.

The amount of Entry Fee ... £ *3 : 0* When applied for.

Special ... £ *56 : 0* When received.

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When received.

28.12.20

Committee's Minute

Assigned

+ L.M.C. 12.20. F.D.

*Ltd for oil fuel 12.20
F.O. above 150°F*

CERTIFICATE WRITTEN



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