

REPORT ON STEAM TURBINE MACHINERY.

Received at London Office.....17 FEB 1926

Date of writing Report.....19 When handed in at Local Office

14/2/1926 Port of Newcastle-on-Tyne

No. in Survey held at Newcastle-on-Tyne

Date, First Survey 16 May 1925 Last Survey 3 Feb 1926

Reg. Book.

(Number of Visits 78.)

38496 on the

CITY OF LYONS

Tons { Gross
Net

Built at Newcastle-on-Tyne

By whom built Swan Hunter, Wigham Richardson & Co. No. 1287

When built 1926

Engines made at Newcastle

By whom made Hall & Shipway Engineering Co. Ltd. Engine No. 861

When made 1926

Boilers made at Newcastle

By whom made Hall & Shipway Engineering Co. Ltd. Boiler No. 861

When made 1926

Shaft Horse Power at Full Power 3150

Owners Ellerman Lines, Ltd. (Shell Mica Ltd. Mgrs)

Port belonging to Liverpool

Nom. Horse Power as per Rule 709

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

STEAM TURBINE ENGINES, &c.—Description of Engines Parsons Impulse-Reaction

No. of Turbines

Ahead 3
Aster 2

Direct coupled, single or double reduction geared to

One propelling shaft

No. of primary pinions to each set of reduction gearing 3

direct coupled to

phase

periods per second, Alternating Current Generator rated

Kilowatts

Volts at

revolutions per minute; for supplying power for driving

Propelling Motors.

Propelling Motors, Type

rated

Kilowatts

Volts at

revolutions per minute.

Direct coupled, single or double reduction geared to

propelling shafts.

PARTICULARS OF TURBINE BLADING.

	H. P.			I. P.			L. P.			ASTERN.		
	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.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	1 1/16"	23 3/8"	12	1 9/16"	21 3/8"	8	2 3/8"	31 8 3/4"	3	1 1/2"	21 11"	2
2ND	1 1/4"	23 1/2"	10	2"	21 1/4"	8	3 1/4"	31 10 1/2"	3	2 3/8"	31 0 1/4"	2
3RD	1 1/2"	24"	10	2 3/8"	21 1/4"	8	3 3/8"	31 11 5/8"	2	3"	31 2"	2
4TH	1 3/4"	24 1/2"	10	3 1/8"	21 6 1/4"	8	4 3/16"	41 1 1/8"	2	3"	31 2"	2
5TH	Impulse wheel before 1st expansion			4 1/16"	21 8 1/8"	8	4 3/4"	41 1 1/2"	1	3"	31 2"	2
6TH	3 1/2"	31 7 3/16"	1	HP ASTERN { 1 3/8"	31 7 3/8"	1	5 5/8"	41 3 3/4"	1	ONE IMPULSE WHEEL BEFORE 1st EXPANSION	31 7 3/8"	1
7TH	1 1/16"	31 5 1/16"	1	2 3/8"	31 9 3/8"	1	6 1/2"	41 5"	1	1 1/2"	31 5 3/8"	1
8TH	1 5/16"	31 8 1/4"	1	3 3/8"	31 3 3/4"	1	6 1/2"	41 5"	1	1 3/8"	31 8 3/8"	1

Shaft Horse Power at each turbine

Revolutions per minute, at full power, of each Turbine Shaft 1997

1st reduction wheel

main shaft

80

Pitch Circle Diameter, 1st pinion

6.2512

2nd pinion

—

1st reduction wheel

—

main wheel 156.0479"

Width of Face, 1st reduction wheel

main wheel

28"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings,

1st pinion 11 1/2" END BEARINGS

2nd pinion

1st reduction wheel

—

main wheel 18 3/8"

Flexible Pinion Shafts, diameter 1st 5" 2nd —

Pinion Shafts, diameter at bearings

External

1st

5"

2nd

—

diameter at bottom of teeth of pinion 1st

5.6746"

2nd

—

Wheel Shafts, diameter at bearings, 1st

—

main

15 1/2"

diameter at wheel shroud, 1st

—

main

12' 6 1/2" INT. DIA.

Generator Shafts, diameter at bearings

—

Propelling Motor Shafts, diameter at bearings

—

Main Shafting, diameter of Tunnel Shafting

as per rule

13.75"

as fitted

14.1"

diameter of Thrust Shafting

as per rule

14.4375"

as fitted

14.7"

diameter of Screw Shaft

as per rule

15.2922"

as fitted

16 1/2"

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 watertight in the propeller boss Yes

If the liner is in more than one length are the joints burned

One length

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

Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently

lubricated

No

Length of Stern Bush

5' 9 1/4"

Diameter of Propeller

18' 6"

Pitch of Propeller

16' 0"

No. of Blades

4

State whether Moveable

Yes

Total Surface

116

square feet.

If Single Screw, are

arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser

Yes

No. of Turbines fitted with astern wheels

Two

Total number of power driven Main and Auxiliary Pumps 10

No. and size of Feed Pumps

One pair 9" x 12" x 24"

How driven

Steam

No. and size of Pumps connected to the Main Bilge Line

Two 6 3/4" x 14"

ONE 14" x 10 1/2" x 24"

How driven ONE STEAM

No. and size of Ballast Pumps

ONE

14" x 10 1/2" x 24"

No. and size of Lubricating Oil Pumps, including

Spare Pump

THREE 5" x 6" (ELECTRIC)

Are two independent means arranged for circulating water through the Oil Cooler

YES

No. and size of suction

Nº 1 = 2-3", Nº 2 = 2-3", Nº 3 = 2-2 1/2", Nº 4 = 2-3", Nº 5 = 2-3" DEEPTANK 2-2 1/2"

connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room

FIVE 3"

FOUR 2 1/2" and in Holds, &c.

No. and size of Main Water Circulating Pump Bilge Suctions

ONE

12"

No. and size of Donkey Pump Direct Suctions

to the Engine Room Bilges

ONE

5"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-bones

YES

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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 stokenhold 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

BILGE SUCTIONS

How are they protected

WOOD CASED

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

YES

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

compartment to another

YES

Is the Screw Shaft Tunnel watertight

YES

Is it fitted with a watertight door

YES

worked from UPPER DECK

BOILERS, &c.—(Letter for record 5)

Total Heating Surface of Boilers

9225 sq

Is Forced Draft fitted

YES

No. and Description of Boilers

3

SE

CYL. MULT.

Working Pressure 240 LBS

002853-002857-0119

Is a Report on Main Boilers now forwarded? **YES**

Is a Donkey Boiler fitted? **YES**

If so, is a report now forwarded? **YES**

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Main Boilers **Yes**

Auxiliary Boilers **Yes**

Donkey Boilers **Yes**

Spare Gear. State the articles supplied:— **To rule requirements - see enclosed list.**

The foregoing is a correct description,

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED

Manufacturer.

A. King
DIRECTOR

1925
Dates of Survey while building { During progress of work in shops - - 16.12.25.26.28. Jan. 4.9.10.12.15.16.18.19.30. July 6.10.13.14.22.23.24.27.28.29. Aug. 4.6.12.19.25.26.28.31. Sep. 2.7.9.11. 1926 Jan. 6.
During erection on board vessel - - 7.13.14.16.19.21.25.28. Feb. 2.3.
Total No. of visits **78.**

Dates of Examination of principal parts—Casings 5.10.25 to 26.10.25 Rotors 29.10.25 to 31.11.25 Blading 12.10.25 Gearing 7.12.25
Wheel shaft 25.9.25 Thrust shaft 25.9.25 Tunnel shafts 12.10.25 Screw shaft 31.8.25 Propeller 12.10.25
Stern tube 28.10.25 Engine and boiler seatings 25.11.1925 Engines holding down bolts 14.1.1926
Completion of pumping arrangements 19.1.1926 Boilers fired 14.1.1926 Engines tried under steam 25.1.1926
Main boiler safety valves adjusted 19.1.1926 Thickness of adjusting washers Port Valve F 1 3/32" A 3/32" Centre Valve F 1 3/32" A 3/32" Star Valve F 1 3/32" A 1 3/32"
Material and tensile strength of Rotor shaft S.M. Steel 3 5/16" 20000 lb Identification Mark on Do. 1788 AL 1789 AL 1790 AL
Material and tensile strength of Flexible Pinion Shaft Coupling S.M. Steel 2 1/2" 20000 lb Identification Mark on Do. 1794 AL 1795 AL 1806 AL 1808 AL
Material and tensile strength of Pinion shaft Nickel Steel 4 1/2" 20000 lb Identification Mark on Do. 1807 AL 1808 AL
Material and tensile strength of 1st Reduction Wheel Shaft S.M. Ingot Steel 3 1/35" 20000 lb Identification Mark on Do. 183A 735 J.P. M.R. 25.9.25
Material of Wheel shaft S.M. Ingot Steel Identification Mark on Do. 735 J.P. Material of Thrust shaft S.M. Ingot Steel Identification Mark on Do. 16 H.J.
Material of Tunnel shafts S.M. Ingot Steel Identification Marks on Do. 2 H.J. 37 H.J. 18 H.J. 17 H.J. 38 H.J. 36 H.J. Material of Screw shafts S.M. Ingot Steel Identification Marks on Do. 19 H.J.
Material of Steam Pipes S.W. Steel + S.D. Steel ✓ Test pressure 720 lbs Date of test 22.3.25
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 the Rules for carrying and burning oil fuel 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.) **The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good. The main and auxiliary engines have been efficiently installed in the vessel and held out under steam with satisfactory results. The oil fuel burning plant & its connections have been installed & tested by hydraulic pressure in accordance with the rules. In my opinion the vessel is now eligible for notation in the Society's Register Book + L.M.C. 2.26 C.L. Fitted for OIL FUEL 2.26 F.P. above 150°F**

It is submitted that

this vessel is eligible for

THE RECORD. + LMC 2.26. CL.

3 Steam turbines S.A. geared to 1 Screw shaft.

Fitted for oil fuel 2.26. F.P. above 150°F.

The amount of Entry Fee ... £ 6 : —
Special ... £ 110 : 9
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 4 FEB. 1926
When received, 13/2/26

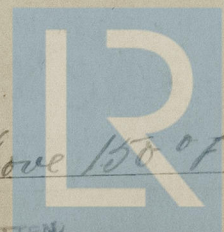
R. Lee
Engineer Surveyor to Lloyd's Register of Shipping.
18/2/26

Committee's Minute

FRI. 19 FEB 1926

Assigned

+ L.M.C. 2.26 C.L.
Fitted for Oil Fuel 2.26, F.P. above 150°F



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