

REPORT ON STEAM TURBINE MACHINERY

Sld. N^o 3185993812
29 MAY 1936

Date of writing Report

19

When handed in at Local Office

28/5/36 Port of

NEWCASTLE-ON-TYNE

Received at London Office

No. in Survey held at Newcastle on Tyne

Date, First Survey 2nd March.

Last Survey

13/5/1936

Reg. Book.

on the S/S. "ST ATHAN" "ST. HELENA" (See letter)

(Number of Visits 8)

Tons Gross 4313
Net 2605

Built at Sunderland

By whom built J.L. Thompson & Co. Ltd

Yard No. 573

When built 1936

Engines made at Newcastle (Helling)

By whom made White's Marine Engg Co. Ltd

Engine No. 4.C.

When made 1936

Engines made at Newcastle (St Peter's)

By whom made R.W. Hawthorn, Leslie & Co. Ltd

Turbine

When made 1936

Shaft Horse Power at Full Power 640

Owners ST. QUENTIN SHIPPING CO. LD. CARDIFF

Port belonging to

Nom. Horse Power as per Rule 304

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which Vessel is intended

See Note No. 12-6-36

STEAM TURBINE ENGINES, &c.—Description of Engines

4 CYCLIC COMPOUND RECIPROCATING ENGINES WITH ONE SCREEN SHAFT.
LP TURBINE WITH DR GEARING TO ONE SCREEN SHAFT.

No. of Turbines

ONE propelling shaft

No. of primary pinions to each set of reduction gearing

direct coupled to Alternating Current Generator

phase periods per second

Direct Current Generator

rated

Volts at revolutions per minute

for supplying power for driving

Propelling Motors, Type

rated

Kilowatts

Volts at

revolutions per minute

Direct coupled, single or double reduction geared to

propelling shafts.

TURBINE BLADING.

H.P. HEIGHT OF DIAMETER NO. OF

I.P. HEIGHT OF DIAMETER NO. OF

L.P. HEIGHT OF DIAMETER NO. OF

ASTERN. HEIGHT OF DIAMETER NO. OF

1ST EXPANSION

2ND

3RD

4TH

5TH

6TH

7TH

8TH

9TH

10TH

11TH

12TH

Shaft Horse Power at each turbine

H.P. —

I.P. —

L.P. 640

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

H.P. —

I.P. —

L.P. 3500

1st reduction wheel

main shaft

Rotor Shaft diameter at journals

H.P. —

I.P. —

L.P. 4"

Pitch Circle

1st pinion

1st reduction wheel

Width of

1st reduction wheel

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

H.P. —

I.P. —

L.P. —

Pitch Circle

2nd pinion

main wheel

Face

main wheel

Flexible Pinion

1st

Pinion Shafts, diameter at bearings

External

1st

2nd

diameter at bottom of pinion teeth

1st

2nd

Wheel Shafts, diameter at bearings

1st

main

diameter at wheel shroud

1st

Generator Shaft, diameter at bearings

main

Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter

as per rule

as fitted

Thrust Shaft, diameter at collar

as per rule

as fitted

Tube Shaft, diameter

as per rule

as fitted

Screw Shaft, diameter

as per rule

as fitted

Is the screw shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes

as per rule

as fitted

Thickness between bushes

as per rule

as fitted

Is the after end of the liner made watertight in the

propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with plastic material insoluble in water and non-corrosive

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

Is an approved Oil Gland or other appliance fitted at the after end of the tube

If so, state type

Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter

Pitch

No. of Blades

State whether Moveable

Total Developed Surface

square feet.

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine

Can the H.P. or I.P. Turbine exhaust direct to the

Condenser

No. of Turbines fitted with astern wheels

Feed Pumps

No. and size

How driven

Pumps connected to the Main Bilge Line

No. and size

How driven

Ballast Pumps, No. and size

Lubricating Oil Pumps, including Spare Pump, No. and size

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

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room

In Pump Room

In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size

Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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

Are all Sea Connections fitted direct on the skin of the ship

Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers

How are they protected

What pipes pass through the deep tanks

Have they been tested as per rule

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

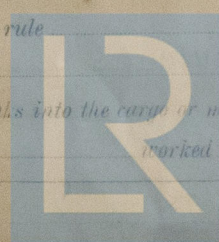
Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

compartment to another

Is the Shaft Tunnel watertight

Is it fitted with a watertight door

worked from



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Lloyd's Register
Foundation

W1153-0062

BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

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

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes.

State the principal additional spare gear supplied

VIZ: 2 Main Bearing Bushes; One Complete Carbon Ring for Glands;
One Set Michell Thrust Pads; One Set Liners for forward side of Thrust Block;
2 Springs for Carbon Rings; One Relief Valve Spring; One Spring for Governor;
2 Studs + Nuts for Bearing Keeps; One Stud, One Bolt + one fitted Bolt (each with nut) for Cylinder
horizontal joint.

The foregoing is a correct description,

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

1936. March 2, 11, 16, 25, 31; Apr 2; May 8, 13.

8 visits.

Dates of Examination of principal parts—Casings 11-3-36 Rotor 16-3-36 Blading 2-4-36 Gearing ✓

Wheel shaft ✓ Thrust shaft ✓ Intermediate shafts ✓ Tube shaft ✓ Screw shaft ✓

Propeller ✓ Stern tube ✓ Engine and boiler seatings ✓ Engine holding down bolts ✓

Completion of fitting sea connections ✓ Completion of pumping arrangements ✓ Boilers fired ✓ L.P. Turbine in Shop. Engine tried under steam 31-3-36

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓ LLOYDS N° 4498

Rotor shaft, Material and tensile strength S.M. Steel 56.5 x 55.9 Kgs/cm. Identification Mark G.A. 20-12-35

Yield point 39.0 x 40.9 Kgs/cm. Identification Mark A.W. 2-4-36

Flexible Pinion Shaft, Material and tensile strength ✓ Identification Mark ✓

Pinion shaft, Material and tensile strength ✓ Identification Mark ✓

1st Reduction Wheel Shaft, Material and tensile strength ✓ Identification Mark ✓

Wheel shaft, Material ✓ Identification Mark Thrust shaft, Material ✓ Identification Mark

Intermediate shafts, Material ✓ Identification Marks Tube shaft, Material ✓ Identification Marks

Screw shaft, Material ✓ Identification Marks Steam Pipes, Material ✓ Test pressure

Date of test ✓ Is an installation fitted for burning oil fuel

Is the flash point of the oil to be used over 150° F. ✓ Have the requirements of the Rules for the use of oil as fuel been complied with

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ If so, have the requirements of the Rules been complied with

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with ✓

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 L.P. Turbine has been constructed under special survey and the materials & workmanship are good. It was run under steam in the Shop afterwards opened up, examined and found in good condition. The Turbine was set up & fitted to its D.R. Gearing in the Shop and has now been dispatched to Sunderland to be installed in J.L. Thompson & Co's Ship No 573 (S/S STATHAN)

The amount of Entry Fee ... £ See Receipt by Rpt When applied for,
Special ... £ : : 19.
Donkey Boiler Fee ... £ ✓ : : When received,
Travelling Expenses (if any) £ ✓ : : 19.

A Watt
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned
See J. E. Machy Rpt.

FRI. 24 JUL 1936