

REPORT ON STEAM TURBINE MACHINERY. No. 60190

Received at London Office SEP 21 1938

Date of writing Report

19 When handed in at Local Office

20:9:38 Port of Glasgow

No. in Survey held at
Reg. Book.

Date, First Survey

4th Mar 1937

Last Survey

11th Sept

1938

11676 on the

Jin. L. "Canton"

(Number of Visits 129)

Tons

Gross

1578 4

Net

9255

Built at

Glasgow

By whom built

Alexander Stephen & Sons Ltd

Yard No.

554

When built

1938

Engines made at

do

By whom made

do

Engine No.

554

When made

1938

Boilers made at

do

By whom made

do

Boiler No.

554

When made

1938

Shaft Horse Power at Full Power 18500

Owners

P. & O. Steam Navigation Co. Ltd.

Port belonging to

Nom. Horse Power as per Rule 3898

Is Refrigerating Machinery fitted for cargo purposes

Y/N

Is Electric Light fitted

Y/N

Trade for which Vessel is intended

Liner

STEAM TURBINE ENGINES, &c.—Description of Engines

Steam Turbine Single reduction gearing

No. of Turbines

Ahead

6

Direct coupled,
single reduction geared

to

2

propelling shafts.

No. of primary pinions to each set of reduction gearing

1

direct coupled to

Alternating Current Generator

phase

periods per second

rated

Kilowatts

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.

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

0.6"

3'-3.355"

ONE.

1 1/8"

2'-2 3/4"

7.

2 1/4"

4'-2 1/2"

3.

0.9"

3'-3.4"

ONE.

2ND

1.5"

3'-4.495"

ONE.

1 1/2"

2'-3"

7.

3"

4'-4"

3.

2.0"

3'-4.745"

ONE.

3RD

1 1/8"

1'-9 1/2"

14.

2 1/8"

2'-3 3/8"

6.

3 1/8"

4'-5 1/8"

2.

4.0"

3'-7"

ONE.

4TH

1 1/2"

1'-10 1/2"

14.

2 3/8"

2'-5 1/4"

6.

4 1/8"

4'-6 3/8"

2.

1 3/8"

4'-11 1/8"

ONE.

5TH

1 3/8"

1'-11 1/8"

14.

3 1/8"

2'-7 1/2"

6.

5 3/8"

4'-9 3/8"

2.

2 1/8"

5'-0 1/8"

ONE.

6TH

1 1/4"

1'-10 1/4"

14.

2 1/4"

2'-5 1/4"

6.

4 1/4"

4'-6 1/4"

2.

1 1/4"

4'-11 1/4"

ONE.

7TH

1 1/8"

1'-9 1/8"

14.

2 3/8"

2'-5 1/8"

6.

4 3/8"

4'-6 3/8"

2.

1 3/8"

4'-11 3/8"

ONE.

8TH

1 1/2"

1'-10 1/2"

14.

2 3/8"

2'-5 1/4"

6.

4 1/8"

4'-6 3/8"

2.

1 3/8"

4'-11 3/8"

ONE.

9TH

1 1/4"

1'-10 1/4"

14.

2 1/4"

2'-5 1/4"

6.

4 1/4"

4'-6 1/4"

2.

1 1/4"

4'-11 1/4"

ONE.

10TH

1 1/8"

1'-9 1/8"

14.

2 3/8"

2'-5 1/8"

6.

4 3/8"

4'-6 3/8"

2.

1 3/8"

4'-11 3/8"

ONE.

11TH

1 1/2"

1'-10 1/2"

14.

2 3/8"

2'-5 1/4"

6.

4 1/8"

4'-6 3/8"

2.

1 3/8"

4'-11 3/8"

ONE.

12TH

1 1/4"

1'-10 1/4"

14.

2 1/4"

2'-5 1/4"

6.

4 1/4"

4'-6 1/4"

2.

1 1/4"

4'-11 1/4"

ONE.

Shaft Horse Power at each turbine

H.P. 3006

I.P. 2960

L.P. 3290

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

H.P. 2347

I.P. 2147

L.P. 1707

1st reduction wheel

main shaft

125

Rotor Shaft diameter at journals

H.P. 6"

I.P. 6"

L.P. 9 1/2"

Pitch Circle

Diameter

HP MP 8.54"

LP pinion 11.78"

1st reduction wheel

main wheel

160.9"

Width of

Face

1st reduction wheel

main wheel

38"

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

1st pinion

15"

1st reduction wheel

main wheel

35 1/2"

Flexible Pinion

1st

2nd

Pinion Shafts, diameter at bearings

External

Internal

HP 6 1/2"

LP 7 1/2"

MP 6 1/2"

diameter at bottom of pinion teeth

HP MP 8.4339"

LP 11.6376"

Wheel Shafts, diameter at bearings

1st

main

19"

16.79"

17.5"

18.24"

19.4"

63"

3"

4"

diameter at wheel shroud,

1st

main

12.11 1/2"

Generator Shaft, diameter at bearings

Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter

as per rule

as fitted

18.24"

19.4"

63"

3"

4"

Thrust Shaft, diameter at collars

as per rule

17.60"

as fitted

19"

Tube Shaft, diameter

as per rule

as fitted

Screw Shaft, diameter

as per rule

as fitted

18.24"

19.4"

63"

3"

4"

Is the

tube

screw

shaft fitted with a continuous liner

Y/N

Bronze Liners, thickness in way of bushes

as per rule

as fitted

8.6"

1"

Thickness between bushes

as per rule

as fitted

18.24"

19.4"

63"

3"

4"

Is the after end of the liner made watertight in the propeller boss

Y/N

If the liner is in more than one length are the junctions

made by fusion through the whole thickness of the liner

Y/N

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

Y/N

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

Y/N

Is an approved Oil Gland

or

Spare Gear. *State the articles supplied:—*

FOR
ALEXANDER STEPHEN & SONS LIMITED

Miss Maclellan

Director Manufacturer.

Dates	{ During progress of work in shops --	1937 Mar.: 4-15-17 May: 5 June: 9-18-22 July: 6-13-30 Aug.: 4-30 Sep: 13-17-21 Oct.: 1-4-11-18-26-29
of Survey while building	{ During erection on board vessel --	Nov.: 2-5-8-9-15-23-25-30 Dec.: 6-10-16-20-22-28-1938 Jan.: 6-11-14-17-20-21-24-28 Feb.: 1-4-7-8-10-14-15-16-18-21-23-24-25-28-30 Apr.: 1-4-5-8-11-13-21-22-25-27-29 May: 2-5-6-9-10-11-13-16-23-25-30-31 June: 1-6-7-8-10-14-15-17-21-22-24-28 July: 1-5-8-11-13-27 Aug.: 5-8-9-10-12-16-17-19-27-29 Sep.: 1-4
	Total No. of visits	129

Dates of Examination of principal parts—Casings 8.2.38.
 Wheel shaft 8.3.38. Thrust shaft 2.3.38. Intermediate shafts 7.6.38. Tube shaft — Screw shaft 2.3.38.

Completion of pumping arrangements 11-9-38. Boilers fixed 5-5-38. Engines tried under steam 11-9-38.

Rotor shaft. Material and tensile strength *1. In Ingot Steel 34-36 Tons* Identification Mark *4394/S. 4750*

Pinion shaft, Material and tensile strength *Ripal Steel 46.6 - 50.4 Tons* Identification Mark *4293 - 4291*

Wheel shaft, Material S. M. High Speed Identification Mark 420150-20 Thrust shaft, Material SAE 52100 Identification Mark 420150-20

do. Identification Mark 3621-3634-HAI-54 Tube shaft, Material - Identification Marks -

Screw shaft, Material do. Identification Marks 3635, 847 HHL Steam Pipes, Material do. 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*

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

The Machinery of this vessel has been built under special survey and

Rem. Specialty secured in position and afterwards tried under full work.

14. Mr. Brewster of this State is eligible in my opinion to succeed

in the Register Book with notation of + Lmo 9.58.

The amount of Entry Fee ... £ 6 : - : } When applied for, 20/10/38

Donkey Boiler Fee ... £ : : When received,

RECEIVED: 20 SEP 1988

1 - 2 38 48

Fitted for one fuel G. 38 F.T. above 1300

