

REPORT ON STEAM TURBINE MACHINERY. No. 95155

Std. No 32139

Received at London Office JUN 18 1937

Date of writing Report

19

When handed in at Local Office

17/6/37 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle on Tyne

Date, First Survey 8 Jan

Last Survey

15 June 1937

Reg. Book.

on the S/S BIDDLESTONE.

(Number of Visits 10.)

Gross 4910  
Net 2953

Built at Sunderland

By whom built Short Bros

Yard No. 450

When built 1937

Engines made at Newcastle on Tyne

By whom made R+W. Hawthorn Leslie & Co

Engine No. 9934.

When made 1937.

Boilers made at

By whom made See Rpt on Recip. Engines

No.

When made

Shaft Horse Power at Full Power 640

Owners 930 HP x 9 = 840

Port belonging to

Nom. Horse Power as per Rule

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which Vessel is intended

TEAM TURBINE ENGINES, &c.—Description of Engines Comp. 4 Cyl. Recip. Eng. S/R Geared, and L.P. Turbine D/R Geared to screw shaft.

No. of Turbines Ahead ONE COMBINED Direct coupled to 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 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 LADING.

1ST EXPANSION .....			2 ROWS PARALLEL, THUS:			3 ROW IMPULSE WHEEL
2ND .....			1" 22" 2.			MEAN DIA. BLADES 22 <sup>1</sup> / <sub>4</sub> "
3RD .....			8 ROWS IN TAPER:-			BLADE HEIGHTS 1 <sup>1</sup> / <sub>4</sub> " TO 2"
4TH .....			1" TO 2 <sup>1</sup> / <sub>8</sub> " 22" TO 25 <sup>3</sup> / <sub>4</sub> " 8.			
5TH .....			6 ROWS IN TAPER:-			
6TH .....			2 <sup>3</sup> / <sub>8</sub> " TO 5 <sup>5</sup> / <sub>16</sub> " 25 <sup>1</sup> / <sub>4</sub> " TO 30 <sup>5</sup> / <sub>8</sub> " 6.			
7TH .....						
8TH .....			ROTOR PARALLEL 20" DIA			
9TH .....						
10TH .....						
11TH .....						
12TH .....						

Shaft Horse Power at each turbine H.P. I.P. L.P. 640

Rotor Shaft diameter at journals H.P. I.P. L.P. 4"

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

Flexible Pinion Shafts, diameter 1st 2nd

Wheel Shafts, diameter at bearings 1st main 2nd

Intermediate Shafts, diameter as per rule as fitted

Tube Shaft, diameter as per rule as fitted

Bronze Liners, thickness in way of bushes as per rule as fitted

Propeller, diameter Pitch No. of Blades

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

Condenser No. of Turbines fitted with astern wheels

Pumps connected to the Main Bilge Line No. and size How driven

Ballast Pumps, No. and size

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

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

In Holds, &c.

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

Bilges, No. and size



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? ✓  
{ an Auxiliary }

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 ✓ Main Boilers ✓ Auxiliary Boilers ✓ Donkey Boilers ✓  
(If not state date of approval)

Superheaters ✓ General Pumping Arrangements ✓ Oil Fuel Burning Arrangements ✓

#### SPARE GEAR.

Has the spare gear required by the Rules been supplied ✓

State the principal additional spare gear supplied

2. main Bearing Bushes  
1 complete Carbon Ring for Islands.  
1 set Michell Thrust Pads.  
1 set Liners for forward side of Thrust Block.  
2 springs for Carbon Rings.  
1 Relief valve spring.  
1 Spring for Governor  
2 Studs + nuts for Bearing Keeps; 1 stud, 1 bolt +  
1 fitted bolt (each with nut) for Cylinder Horizontal Joint.

The foregoing is a correct description, HAWTHORN, LEAVE & CO., LIMITED  
R.B. Johnson. DIRECTOR

Dates of Survey while building { During progress of work in shops - - 1937 Jan 8. 12. Apr. 12. 26. May 5. 11. 14. 25. June 7. 15.  
{ During erection on board vessel - - -  
Total No. of visits 10.

Dates of Examination of principal parts—Casings 8/1/37 Rotors 12/4/37 Blading 7/6/37 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 fixed ✓ LP Turbine on Test Bench 4/6/37

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓

Rotor shaft, Material and tensile strength S.M. Steel 56.5 & 55.9 Kg/mm<sup>2</sup>. Identification Mark LLOYDS NO 458 AM. 12-4

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 Yes If so, state name of vessel 9/s

General Remarks (State quality of workmanship, opinions as to class, &c.) This L.P. Turbine has been constructed in special survey in accordance with the Rules. The materials & workmanship are good. The Turbine was satisfactorily "steamed" in the Shop (no load), set up on its DR/5R Gear and afterwards dispatched to Sunderland for installation with its Reciprocating Engine on board the vessel.

The amount of Entry Fee ... £ See Report 4 (Receipts) When applied for, 19  
Special ... £ : : When received, 19  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : : 19

Committee's Minute

TUE 20 JUL 1937

Assigned See Sea 32139

A. Watt.

Engineer Surveyor to Lloyd's Register of Shipping.



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