

REPORT ON STEAM TURBINE MACHINERY. No. 96297

t. 4a.

Received at London Office MAY 26 1938

Date of writing Report 19 When handed in at Local Office 24/5/38 Port of NEWCASTLE-ON-TYNE
 Date, First Survey 9 March 1937 Last Survey 23/5/1938
 on the Sted Lwin Se. "UMGENI" (Number of Visits) Tons Gross 8180 Net 5082
 Built at Newcastle By whom built Swan Hunter & Wigham Richardson & Co Yard No. 1556 When built 1938-5
 Engines made at do By whom made do Engine No. 1556 When made 1938
 Boilers made at do By whom made do Boiler No. 1556 When made 1938
 Shaft Horse Power at Full Power 6668 Owners Bullard & King & Co Ltd Port belonging to LONDON
 Nom. Horse Power as per Rule 1118 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Trade for which Vessel is intended S. Africa - UK.

STEAM TURBINE ENGINES, &c.—Description of Engines Two L.P. Loh. Stan. (Bauer-Wach Turbines, D.R. Geared and with Hydraulic Couplings.

No. of Turbines Ahead 2 Direct coupled, single reduction geared } to 2 propelling shafts. No. of primary pinions to each set of reduction gearing One
 Astern none double reduction geared }
 Direct coupled to Alternating Current Generator ☒ phase ☒ periods per second ☒
 Direct Current Generator ☒ rated ☒ Kilowatts ☒ Volts at ☒ revolutions per minute;
 Supplying power for driving ☒ Propelling Motors, Type ☒
 Direct coupled, single or double reduction geared to ☒ propelling shafts.

TURBINE LOADING.	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							61 $\frac{1}{2}$	822 $\frac{1}{2}$	1.			
2nd							79.	858.	1.			
3rd							97.	894.	1.			
4th							115.	930.	1.			
5th							137.	974.	1.			
6th							160.	1020.	1.			
7th							185.	1070.	1.			
8th												
9th												
10th												
11th												
12th												
13th												
14th												
15th												

Shaft Horse Power at each turbine { H.P. 1174 }
 { I.P. 1174 }
 { L.P. 1174 }
 Propeller Shaft diameter at journals { H.P. 125 $\frac{1}{2}$ }
 { I.P. 125 $\frac{1}{2}$ }
 { L.P. 125 $\frac{1}{2}$ }
 Pitch Circle Diameter { 1st pinion 271.5281 $\frac{1}{2}$ }
 { 2nd pinion 309.544 $\frac{1}{2}$ }
 { 1st reduction wheel 1330.4877 $\frac{1}{2}$ }
 { main wheel 1911.5518 $\frac{1}{2}$ }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 242.5 & 227.5 $\frac{1}{2}$ }
 { 2nd pinion 390 $\frac{1}{2}$ }
 { 1st reduction wheel 372.5 & 1447.5 $\frac{1}{2}$ }
 { main wheel 480 $\frac{1}{2}$ }

Exible Pinion Shafts, diameter { 1st 100 $\frac{1}{2}$ }
 { 2nd — }
 Pinion Shafts, diameter at bearings { External 1st 115 $\frac{1}{2}$ }
 { Internal 1st — }
 { 2nd 280 $\frac{1}{2}$ }
 { 2nd 230. }
 diameter at bottom of pinion teeth { 1st 256.883 $\frac{1}{2}$ }
 { 2nd 294.896 }

Wheel Shafts, diameter at bearings { 1st 1260 $\frac{1}{2}$ }
 { main 1820 $\frac{1}{2}$ }
 Generator Shaft, diameter at bearings —
 Propelling Motor Shaft, diameter at bearings —

Intermediate Shafts, diameter { as per rule — }
 { as fitted — }
 Thrust Shaft, diameter at collars { as per rule — }
 { as fitted — }

Tube Shaft, diameter { as per rule — }
 { as fitted — }
 Screw Shaft, diameter { as per rule — }
 { as fitted — }
 Is the { tube } shaft fitted with a continuous liner { — }
 { screw }

Copper 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 —
 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 —
 two liners are fitted, is the shaft lapped or protected between the liners —
 If so, state type —

Is an approved Oil Gland or other appliance fitted at the after end of the tube —
 Length of Bearing in Stern Bush — and supporting propeller —
 Total Developed Surface — square feet.

Propeller, diameter — Pitch — No. of Blades — State whether Movable —
 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 —
 Are two independent means arranged for circulating water through the Oil Cooler —
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge —
 In Pump Room —

Holds, &c. —
 Main Water Circulating Pump Direct Bilge Suctions, 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 mud-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 —
 How are they protected —
 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 —

004101-004106-0201

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
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Has the spare gear required by the Rules been supplied

SPARE GEAR.

State the principal additional spare gear supplied

FOR
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

The foregoing is a correct description.

G. J. J. J. J.

Manufacture

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

See Recip. Eng. Report

Dates of Examination of principal parts—Casings 9th 10th 3/38 Rotors 17/2/38 Blading 21st 22nd 3/38 Gearing 17/3/38

Wheel shaft 17/3/38 Thrust shaft 17/3/38 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 ✓ Engines tried under steam ✓

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓

Rotor shaft, Material and tensile strength S.M.F. Steel P 37.4 tons : 5.38.8 tons

Identification Mark P 36526 : 5.652 T.W.B.

Flexible Pinion Shaft, Material and tensile strength S.M.F. Steel 32.0 tons

Identification Mark S.6246 T.W.B.

1st Redn Pinion shaft, Material and tensile strength " 45.2 tons

Identification Mark P 56340 : 5.63

2nd Redn " " " " 44.0 tons

Identification Mark 56804 : 5.68

1st Reduction Wheel Shaft, Material and tensile strength " P 31.2 tons : S.W. 30.8 tons

Identification Mark 56171 : 5.617 T.W.B.

Wheel shaft, Material S.M.F. Steel Identification Mark 9912/561 AEG. Thrust shaft, Material ✓

Identification Mark ✓

Intermediate shafts, Material ✓ Identification Marks

SEE RPT 4 FOR RECIP. ENGS. 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 UMTALI.

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

The Machinery has been constructed under special Survey in accordance with the Rules & approved plan, examined under steam on test bed, afterwards satisfactorily installed on board and tried under full working conditions.

The materials and workmanship are good.

The amount of Entry Fee ... £	✓	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

FRI. 3 JUN 1938

Assigned

See Nuc. J.E. 96297



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