

REPORT ON STEAM TURBINE MACHINERY. No. 96820

Received at London Office Oct 27 1938

Date of writing Report 19 When handed in at Local Office 25/10/38 Port of NEWCASTLE-ON-TYNE
No. in Survey held at Newcastle on Tyne Date, First Survey 13 May Last Survey 19/10/1938
Reg. Book. on the S/S "LIDA" (Number of Visits —) Tons } Gross 1387
Net 771

Built at Newcastle By whom built Swan Hunter & Wigham Yard No. 1602 When built 1938
Engines made at do. By whom made do. Richardson & Co Engine No. 1602 When made 1938
Boilers made at do. By whom made do. L.P. Turbine No. 1602 When made 1938

Shaft Horse Power at Full Power 379 Owners Polish-British S/S Co Ltd Port belonging to DANZIG
Nom. Horse Power as per Rule 152 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which Vessel is intended Ocean going

STEAM TURBINE ENGINES, &c.—Description of Engines Exh. Ste. Turbine with D/R. Gearing & hydraulic couplings in conjunction with 2 Cylr Compound Recip. Eng.

No. of Turbine One Direct coupled, single reduction geared } to One propelling shaft. No. of primary pinions to each set of reduction gearing one
direct coupled to } Alternating Current Generator } phase } periods per second } rated } Kilowatts } Volts at } revolutions per minute;
for supplying power for driving } Direct Current Generator }
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							26	452	1			
2ND							37	474	1			
3RD							48	496	1			
4TH							60	520	1			
5TH							72	544	1			
6TH							84	568	1			
7TH							98	596	1			
8TH							112	624	1			
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at the turbine } H.P. } 1st reduction wheel 648
} I.P. } main shaft 110
} L.P. 379 } L.P. 5962

Rotor Shaft diameter at journals } H.P. } Pitch Circle } 1st pinion 130.649 } 1st reduction wheel 1201.970 } Width of }
} I.P. } Diameter } 2nd pinion 227.1369 } main wheel 1290.802 } Face }
} L.P. 100 } } } } } }
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings } 1st pinion 122 } OVERHUNG } 1st reduction wheel 223.5 } At 2.15
} 2nd pinion 290 } } main wheel 290 } At 2.75

Flexible Pinion Shafts, diameter } 1st } Pinion Shafts, diameter at bearings } External } 1st } 100 } 2nd } 200 } diameter at bottom of pinion teeth } 1st 128.602
} 2nd } } Internal } 2nd } } } } 2nd 212.492

Wheel Shafts, diameter at bearings } 1st 259.75 } diameter at wheel shroud, } 1st 1134 } Generator Shaft, diameter at bearings }
} main 240 } } } main 1194 } Propelling Motor Shaft, diameter at bearings }
Intermediate Shafts, diameter } as per rule 8.42 } Thrust Shaft, diameter at collars } as per rule 8.84
} as fitted } See Rpt. 4. on Recip. Eng. } as fitted 240

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

Bronze Liners, thickness in way of bushes } as per rule } Thickness between bushes } as per rule } Is the after end of the liner made watertight in the }
} as fitted } as fitted } as fitted } as fitted } 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 a 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 }
shaft } If so, state type. } Length of bearing in Stern Bush next to and supporting propeller }
Propeller, diameter } Pitch } No. of Blades } State whether Movable } Total Developed Surface } square feet. }

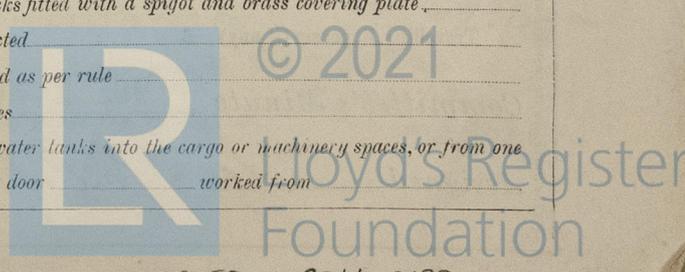
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine } Can the H.P. or I.P. Turbine exhaust direct to the }
Condenser } No. of Turbines fitted with astern wheels } Feed Pumps } No. and size } How driven }

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 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 }
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 }

SEE ALSO RECIP. ENGINES ON MACHINERY



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} _{an Auxiliary} 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} 17/2/38 Main Boilers Auxiliary Boilers Donkey Boilers
 (If not state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

See Report 4 on Recip. Engine.
 SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes

State the principal additional spare gear supplied
One bearing of each size fitted
one set of pads for main thrust block.
one " " " for 2nd redn pinion thrust block
one " " " for turbine thrust block
one spring & one set of washers for turbine
emergency trip governor, etc

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

G. J. Deedy DIRECTOR Manufacturer.

The foregoing is a correct description,

Dates of Survey while building ^{During progress of work in shops --} Recip. See Machinery Report
^{During erection on board vessel ---}
 Total No. of visits _____

Dates of Examination of principal parts—Casings 7/9/38 Rotors 14/7/38 Blading 13/9/38 Gearing 13/9/38

Wheel shaft combined with Thrust shaft 13/9/38 Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings See Rpt 4 for Recip Engine. 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. Forged Steel 37.5 tons (Y.P. 24.1 tons) Identification Mark 13238 J.L.

1st Redn Pinion Shaft, Material and tensile strength S.M. Forged Nickel Steel Identification Mark 1481 HK

2nd Redn Pinion shaft, Material and tensile strength " " Nickel " 43.9 tons (Y.P. 32.4 tons) Identification Mark 1480 HK

1st Reduction Wheel Shaft, Material and tensile strength (combined with 2nd Redn Pinion) " " Nickel " Identification Mark 1480 HK

Wheel shaft, Material main Wheel shaft combined with Thrust shaft Identification Mark S.M. Forged Steel Identification Mark 3340 HB.

Intermediate shafts, Material Identification Marks See Rpt 4 on Recip Engine 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 Yes, See Rpt 4 on Recip Eng.

Is this machinery a duplicate of a previous case Yes If so, state name of vessel Puck

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

The machinery has been constructed under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good.

This 1st sh. stem turbine with its D.R. gear has been fitted on the Combined Bedplate of the main engine (see Rpt 4), fitted on board and satisfactorily tested under working conditions.

The amount of Entry Fee	£	<input checked="" type="checkbox"/>	When applied for,
Special	£	<u>See Rpt 4</u>	19
Donkey Boiler Fee	£		When received,
Travelling Expenses (if any)	£		19

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

Committee's Minute TUE 1 NOV 1938

Assigned See F.C. Rpt.



Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Is a Report also sent on the Hull of the Ship?

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