

## REPORT ON STEAM TURBINE MACHINERY. No. 96820

Received at London Office... 27.10.1938

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)

Gross 1387  
Net 771

Built at Newcastle

By whom built Swan Hunter &amp; Wigham

Yard No. 1602

When built 1938

Engines made at

By whom made do.

Richardson &amp; Co.

Engine No. 1602

When made 1938

Boilers made at

By whom made do.

L.P. TURBINE

Boiler 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, &amp;c.—Description of Engines

Exh. Steam Turbine with D/R. Bearing &amp; Hydraulic Coupling in conjunction with 2 Cyln Compound Recip. Eng.

No. of Turbine Ahead 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 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 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. 379 L.P. 5962. 1st reduction wheel 648. main shaft 110.

Rotor Shaft diameter at journals H.P. 100 Pitch Circle Diameter 130.649 1st pinion 1201.970 1st reduction wheel 130 main wheel 370 2nd pinion 227.1369 main wheel 1290.802 2nd reduction wheel 223.5 main wheel 290

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 122 2nd pinion 290 1st reduction wheel 223.5 2nd reduction wheel 290

Flexible Pinion Shafts, diameter 1st 259.75 2nd 240 Pinion Shafts, diameter at bearings External 1st 100 2nd 200 Internal 1st 1134 2nd 1194 Generator Shaft, diameter at bearings 1st 128.602 2nd 212.492

Wheel Shafts, diameter at bearings 1st 259.75 2nd 240 main 240 diameter at wheel shroud, main 1194 Propelling Motor Shaft, diameter at bearings 8.84

Intermediate Shafts, diameter as per rule 8.84 as fitted 240 Thrust Shaft, diameter at collars as per rule 8.84 as fitted 240

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted Is the tube 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 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 Length of bearing in Stern Bush next to and supporting propeller shaft If so, state type

Propeller, diameter Pitch No. of Blades Stationary or Movable Total Developed Surface square feet. Can the H.P. or I.P. Turbine exhaust direct to the Condenser No. of Turbines fitted with astern wheels

Pumps connected to the Main Bilge Line No. and size How driven Lubricating Oil Pumps, including Spare Pump, No. and size Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge In Pump Room

Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Oil Cooler 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 the Overboard Discharges above or below the deep water line Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

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

What pipes pass through the bunkers Have they been tested as per rule What pipes pass through the deep tanks 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



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 (If not state date of approval)

Shafting 17/2/38

Main Boilers

Auxiliary Boilers

Donkey Boilers

See Report 4 on Recip. Engine.

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

Yes. One bearing of each size fitted  
one set of pads for main thrust block.  
one " " " for 2<sup>nd</sup> 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.

The foregoing is a correct description,

DIRECTOR

Manufacturer.

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

Recip. See Machinery Report

Dates of Examination of principal parts—Casings

7/9/38

Rotors

14/7/38

Blading

13/9/38

Gearing

13/9/38

main

Wheel shaft combined with Thrust shaft

13/9/38

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. Forged Steel 37.5 tons (Y.P. 24.1 tons)

Identification Mark 13238 J.L.

1<sup>st</sup> Redn

Pinion shaft, Material and tensile strength

S.M. Forged Nickel Steel

Identification Mark 1481 HK

2<sup>nd</sup> Redn

Pinion shaft, Material and tensile strength

" " Nickel " 43.9 tons (Y.P. 32.4 tons)

Identification Mark 1480 HK

(combined with 2<sup>nd</sup> Redn Pinion) " " Nickel "

Identification Mark 1480 HK

1st Reduction Wheel Shaft

main Wheel shaft combined with Thrust shaft

S.M. Forged Steel

Identification Mark 3340 HB

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

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 1<sup>st</sup> s.t.m. 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

£

When applied for,

Special

£ See Rpt 4

19

Donkey Boiler Fee

£

When received,

Travelling Expenses (if any)

£

19

Committee's Minute

TUE 1 NOV 1938

Assigned

See F.C. Rpt.

A. Watt.

Engineer Surveyor to Lloyd's Register of Shipping.



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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?

[Form 3.35.—Copyable Ink.]