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Rpt. 4a

REPORT ON STEAM TURBINE MACHINERY. No. 103731

Received at London Office... 29 OCT 1946

Date of writing Report 10 When handed in at Local Office 30/5/46 Port of NEWCASTLE-ON-TYNE
No. in Survey held at Newcastle on Tyne Date, First Survey (1946) April 9th Last Survey May 16th 1946
Reg. Book. JOHN HOLT. (Number of Visits 8)

Built at Birkenhead By whom built Cammell Laird & Co Yard No. 1171 Tons Gross Net 1946
Engines made at Birkenhead By whom made Cammell Laird & Co Engine No. 1171 When made 1946
Shaft Horse Power at Full Power 732 Owners Swan Hunter, Wigham & Carter No. B.W. 157 When made 1946
Nom. Horse Power as per Rule 122 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which Vessel is intended Off & 1HP 1750 Rep. 2 Total 1HP 2500

STEAM TURBINE ENGINES, &c.—Description of Engines BAUERWACHL P. TURBINE WITH D.R. GEARING & VULCAN COMP. BLIND

No. of Turbines Ahead ONE Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing ONE
Astern ✓ double reduction geared }
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												
2ND							64"	728"	1			
3RD							79"	758"	1			
4TH							94"	788"	1			
5TH							109"	818"	1			
6TH							126"	852"	1			
7TH							144"	888"	1			
8TH							160"	920"	1			
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. ✓ I.P. ✓ L.P. 732 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. ✓ I.P. ✓ L.P. 4073 } 1st reduction wheel 438 main shaft 45
Rotor Shaft diameter at journals { H.P. ✓ I.P. ✓ L.P. 125" } Pitch Circle Diameter { 1st pinion 162.9169" 1st reduction wheel 1515.1269" 2nd pinion 352.5093" main wheel 1984.4966" } Width of Face { 1st reduction wheel 260" main wheel 560" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 225" 2nd pinion 422.5" } 1st reduction wheel 260" main wheel 525"

Flexible Pinion Shafts, diameter { 1st ✓ 2nd ✓ } Pinion Shafts, diameter at bearings External 1st 125" 2nd 320" Internal 1st 125" 2nd 250" diameter at bottom of pinion teeth { 1st 148.2715" 2nd 320.465" }

Wheel Shafts, diameter at bearings { 1st 260" For 2nd 500" } diameter at wheel shroud, { 1st 1445" 2nd 1908" } 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 13.08 as fitted 255" - 13.48

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 { ✓ }

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 shaft. If so, state type. Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Blades State whether Moveable 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 } Lubricating Oil Pumps, including Spare Pump, No. and size Two - 9x8x18
Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room In Pump Room

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

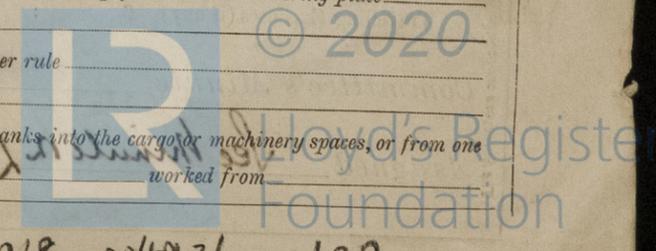
What pipes pass through the bunkers How are they protected
What pipes pass through the deep tanks Have they been tested as per rule

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

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004918 - 004926 - 0109

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? 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

One bearing for each size fitted
 " set of thrust pads for each thrust bearing
 " spring one set of washers for emergency governor
 " coupling bolt nut for 1st reduction pinion shaft
 " " " " 2nd " wheel "

The foregoing is a correct description,

SWAN, HUNTER, & WIGHAM RICHARDSON LTD. P.L. Lang Manufacturer.

Dates of Survey while building { During progress of work in shops -- (1946) Apr. 9, 12, 29 May 2, 6, 8, 9, 16
 { During erection on board vessel ---
 Total No. of visits 8

Dates of Examination of principal parts—Casings 4-5-46 Rotors 16-5-46 Blading 16-5-46 Gearing 16-5-46

Wheel shaft 16-5-46 Thrust shaft 16-5-46 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 O.H. Steel 39.4 Tons Identification Mark 14692 T 806

Pinion Shaft, Material and tensile strength O.H. Steel 42.0 Tons Identification Mark 14692 T 4476

Pinion shaft, Material and tensile strength O.H. Steel 47.0 Tons Identification Mark 14692 T F 7447

1st Reduction Wheel Shaft, Material and tensile strength O.H. Steel 30.6 Tons Identification Mark 14692 T 811

2nd " " " " " " O.H. Steel 31.6 Tons Identification Mark 14692 T 813
 Wheel shaft, Material Identification Mark Thrust shaft, Material O.H. Steel Identification Mark 14692 T 811

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 If so, state name of vessel

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

This machinery has been constructed under special survey in accordance with rule requirements & approved plans.
 Materials & workmanship are good.
 The machinery has been sent to Messrs Bammell Laird & Co. Ltd. Birkenhead.
 This machinery has been installed in the JOHN HOLT, tried under full power conditions found satisfactory.

W. Hunter 30/9/46

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £ 12 : 4	:	:	31 MAY 1946
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19

J. H. Matthews
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL - 8 OCT 1946
 Assigned See Minute re Liverpool S.E. Machinery Report.

