

REPORT ON STEAM TURBINE MACHINERY. No. 51256

Received at London Office 25 FEB 1931

pt. 4a.

Date of writing Report 18-2-1931 When handed in at Local Office 20-2-1931 Port of Glasgow
 No. in Survey held at Dalnair Date, First Survey 22-9-30 Last Survey 17-2-1931
 Reg. Book. on the S.S. "Hilary" (Number of Visits 18)
 Built at Birkenhead By whom built Cammell Laird & Co. Yard No. When built
 Engines made at " By whom made " Engine No. 975 When made 1931
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power 1730 Owners Port belonging to
 Nom. Horse Power as per Rule 288 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines *Bauer Mach Installation made by H. W. 30.*

No. of Turbines Ahead 1 Behind 1 No. of primary pinions to each set of reduction gearing 1
 direct coupled to Alternating Current Generator phase periods per second 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							89 m/m	1128 m/m	1			
2ND "							110 "	1170 "	1			
3RD "							131 "	1212 "	1			
4TH "							152 "	1254 "	1			
5TH "		None			None		178 "	1306 "	1		None	
6TH "							206 "	1362 "	1			
7TH "							235 "	1420 "	1			
8TH "												
9TH "												
10TH "												
11TH "												
12TH "												

Shaft Horse Power at each turbine H.P. 1730 I.P. 2750 L.P. 75
 Rotor Shaft diameter at journals H.P. 170 m/m I.P. 170 m/m L.P. 170 m/m
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 12.8846" 1st reduction wheel 67.9152" 2nd pinion 19.4254" main wheel 123.694"

Flexible Pinion Shafts, diameter at bearings 1st 360 m/m 2nd 360 m/m
 Wheel Shafts, diameter at bearings 1st 360 m/m 2nd 360 m/m
 Intermediate Shafts, diameter as per rule as fitted
 Screw Shaft, diameter as per rule as fitted

Thrust Shaft, diameter at collars 175/8"
 Tube Shaft, diameter as per rule as fitted
 Propelling Motor Shaft, diameter at bearings 3025"
 Generator Shaft, diameter at bearings 12.278" 18.653"

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

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
 Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size 2-9" x 10" x 24"

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 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

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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?

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

Spare Gear. State the articles supplied:—

FOR WILLIAM BEARDMORE & CO., LIMITED

The foregoing is a correct description,

G. Langlands *Manufacturer.*

Dates of Survey while building
During progress of work in shops -- 1930 Sep 22 Oct 1 7 14 29 Nov 7 26 Dec 2 9 16 (1931) Jan 13 19 21 26 28 Feb 3 11 17
During erection on board vessel ---
Total No. of visits 18

Dates of Examination of principal parts—Casings 3-2-31. *cl* Rotors 26-1-31. *cl* Blading 3-2-31. *cl* Gearing 13-1-31. *cl*

Wheel shaft 19-1-31. *cl* Thrust shaft 19-1-31. *cl* Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

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-35 Identification Mark 3892

Flexible Pinion Shaft, Material and tensile strength Identification Mark ✓

Pinion shaft, Material and tensile strength h. S. 47.5 to 49. Identification Mark 3892

1st Reduction Wheel Shaft, Material and tensile strength S 38 Identification Mark 3892

Wheel shaft, Material S. Identification Mark 3892 Thrust shaft, Material S. Identification Mark 3892

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 carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This Low Pressure Turbine with Double Reduction Gearing and hydraulic coupling, has been built under special survey in accordance with the approved plans, and the Society's Rules and requirements, the materials and workmanships are good.

The installation has been dispatched to Birtanhead for fitting on board.

The amount of Entry Fee ... £

When applied for,

23 FEB 1931

Special 1/8" of above due 2 foot £ 28-16

Donkey Boiler Fee £ 5-15-0

Travelling Expenses (if any) £

When received,

London Letter to School 11/3/31

Jas. Cairns,
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 FEB 1931

Assigned

Deferred.



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Lloyd's Register
Foundation

Rpt. 5d.

Date of writing

No. in Reg. Book.

3354 on

Master

Engines made

Boilers made

Nominal Horsepower

MULTIPLE

Manufacture

Total Heating Surface

No. and Description

Tested by

Area of Fire

Area of each

In case of damage

Smallest diameter

Smallest diameter

Largest internal

Thickness of

long. seams

Percentage

Percentage

Thickness of

Material

Length of

Dimensions

End plates

How are

Tube plates

Mean pitch

Girders to

at centre

in each

Tensile strength

Pitch of

Working pressure

Thickness

Pitch of

Working pressure

Diameter

Working pressure

Diameter