

REPORT ON STEAM TURBINE MACHINERY.

-4 MAR 1925

Received at London Office TUE. 23 OCT. 1923

Date of writing Report 19 When handed in at Local Office Oct. 22nd 1923 Port of MANCHESTER
 No. in Survey held at Manchester Date, First Survey May 2nd 1923 Last Survey Oct 10th 1923
 Reg. Book. on the Turbine Rotating Parts, Nozzle Boxes & Diaphragms for Rowans Contract No 671. (Number of Visits) Tons { Gross 8729
 Net 5501
 Built at Port Glasgow By whom built W. Hamilton & Co. Ltd. Yard No. 323 When built 1925
 Engines made at Glasgow By whom made D. Rowan & Co. Ltd. Engine No. 8/864/5 When made
 Boilers made at _____ By whom made _____ Boiler No. _____ When made
 Shaft Horse Power at Full Power 5500 Owners _____ Port belonging to _____
 Horse Power as per Rule _____ Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

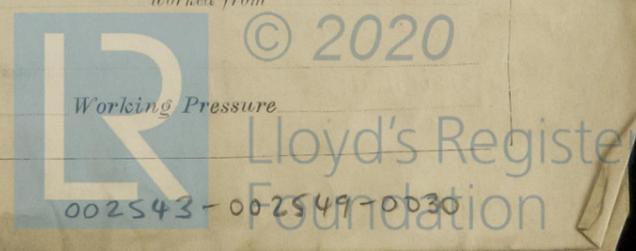
AM TURBINE ENGINES, &c.—Description of Engines Rateau Impulse No. of Turbines Ahead 2
 Astern 2
 Coupled, single or double reduction geared to _____ propelling shafts. No. of primary pinions to each set of reduction gearing _____, direct coupled to _____ phase
 periods per second, Alternating Current Generator rated _____ Kilowatts _____ Volts at _____ revolutions per minute; for supplying power for driving
 Propelling Motors. Propelling Motors, Type _____
 Kilowatts _____ Volts at _____ revolutions per minute. Direct coupled, single or double reduction geared to _____ propelling shafts.

DETAILS OF TURBINE BLADING.

EXPANSION	H. P.			L. P.			L. P. (Continued)			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.
	9 1/16"	4 6 3/16"	2	2 7/16"	4 8 7/16"	1	9 1/2"	5 3 1/2"	1	H. P.		
	7 3/8"	4 6 7/8"	1	2 1/16"	4 8 11/16"	1	10 1/2"	5 4 5/8"	1	1 1/8"	4 7 3/8"	2
	1 1/16"	4 7 1/16"	1	3 1/4"	4 9 1/4"	1	11 1/2"	5 6"	1	L. P.		
	7 3/8"	4 6 7/8"	1	3 5/16"	4 9 5/16"	1				1 2"	4 8"	1
	1 1/16"	4 7 1/16"	1	4 5/8"	4 10 5/8"	1				2 4 3/4"	4 4 3/4"	1
	1 3/16"	4 7 3/16"	1	5 13/16"	4 11 13/16"	1						
	1 7/16"	4 7 7/16"	1	6 3/4"	5 0 3/4"	1						
	2 5/16"	4 8 5/16"	1	8 1/8"	5 2 1/8"	1						

Shaft Horse Power at each turbine 2750 Revolutions per minute, at full power, of each Turbine Shaft 1350 1st reduction wheel
 Pitch Circle Diameter, 1st pinion _____ 2nd pinion _____ 1st reduction wheel _____ main wheel _____
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings,
 1st pinion _____ 2nd pinion _____ 1st reduction wheel _____ main wheel _____ Flexible Pinion Shafts, diameter 1st _____ 2nd _____
 Pinion Shafts, diameter at bearings External 1st _____ 2nd _____ diameter at bottom of teeth of pinion 1st _____ 2nd _____
 Internal _____
 Wheel Shafts, diameter at bearings, 1st _____ main _____ diameter at wheel shroud, 1st _____ main _____
 Propelling Motor Shafts, diameter at bearings _____
 Tunnel Shafting _____ as per rule _____ diameter of Thrust Shafting _____ as per rule _____
 as fitted _____ Is the screw shaft fitted with a continuous liner the whole length of the stern tube _____ Is the after end of the liner
 Is the after end of the liner _____ If the liner does not fit tightly at the
 Is the space charged with a plastic material insoluble in water and non-corrosive _____ If two liners are fitted, is the
 Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently
 Length of Stern Bush _____ Diameter of Propeller _____
 No. of Blades _____ State whether Moveable _____ Total Surface _____ square feet. If Single Screw, are
 arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser
 No. of Turbines fitted with astern wheels 2 Total number of power driven Main and Auxiliary Pumps _____
 and size of Feed Pumps _____ How driven _____ No. and size of Pumps connected to the Main Bilge Line _____
 No. and size of Ballast Pumps _____ No. and size of Lubricating Oil Pumps, including
 Are two independent means arranged for circulating water through the Oil Cooler _____ No. and size of suctions
 connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room _____ and in Holds, &c.
 and size of Main Water Circulating Pump Bilge Suctions _____ No. and size of Donkey Pump Direct Suctions _____
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes _____
 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 they Valves or Cocks _____
 Are the Discharge Pipes above or below the deep water line _____
 Are the Blow Off Cocks fitted with a spigot and brass covering plate _____
 How are they protected _____
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 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
 Is the Screw Shaft Tunnel watertight _____ Is it fitted with a watertight door _____ worked from _____

Boilers, &c.—(Letter for record _____) Total Heating Surface of Boilers _____
 Forced Draft fitted _____ No. and Description of Boilers _____



Is a Report on Main Boilers now forwarded?

Is a Donkey Boiler fitted?

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

Spare Gear. State the articles supplied:—

The foregoing is a correct description,

METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Manufacturer.

Juniper, Mech. Eng.

Dates of Survey while building: During progress of work in shops -- 1923. May 2, 10, 13, 17. June, 4, 13, 20, 22, 29. July, 6, 12, 19. Aug, 7, 8, 14, 20, 25. Sept. 3, 12, 29. Oct. 6, 13, 20, 27. During erection on board vessel --- Total No. of visits

Dates of Examination of principal parts—Casings. Rotors 3rd Sept 10th Oct, Blading 8th Aug, 20th Aug, 2nd Oct, bearing

Wheel shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material and tensile strength of Rotor shaft *Mild Steel. H.P. 36.8 tons/in². L.P. 36 tons/in².* Identification Mark on Do. *H.P. 3043. W.L. 558*

Material and tensile strength of Flexible Pinion Shaft Identification Mark on Do.

Material and tensile strength of Pinion shaft Identification Mark on Do.

Material and tensile strength of 1st Reduction Wheel Shaft Identification Mark on Do.

Material of Wheel shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes 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 If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *These rotors, nozzle boxes and diaphragms have been constructed under special survey and the materials listed in accordance with Society's Rules. The materials and workmanship so far as could be seen are good and good. These parts have been forwarded to Messrs D. Rowan & Co. Ltd, Glasgow for assembling in turbines for this Engine No. 671*

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

The amount of Entry Fee ... £ : : When applied for. per ltr. to Mr. L. W. Lane, Engineer Surveyors to Lloyd's Register of Shipping.
Special ... £ 10 : 7 : 6
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : : When received. £ 29 : 7 : 19

Committee's Minute GLASGOW 8-MAR 1925

Assigned See G.S. Rpt No. 44399

