

REPORT ON STEAM TURBINE MACHINERY.

No. 83770

Date of writing Report 19 When handed in at Local Office 1.2.29 Port of Newcastle-on-Tyne

No. in Survey held at Wallsend-on-Tyne Date, First Survey 24 Sept 1928 Last Survey 16 Jan 1929

Reg. Book. on the Low Pressure exhaust turbine for the S. S. Y. S. (Number of Visits 16.)

Built at W. Harlepool By whom built W. Grey & Co. Ltd Yard No. - When built 1929.

Engines made at ~ do ~ By whom made Ben. Har. Eng. Works Engine No. - When made ~ do ~

Boilers made at Wallsend By whom made Evan & Sons, Wigan No. 1292 When made ~ do ~

Shaft Horse Power at Full Power Owners Port belonging to

Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines One Low pressure turbine.

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 - 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.

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						99 M.M.	1148 M.M.	6			
2ND						120 "	1190 "	"			
3RD						140 "	1230 "	"			
4TH						160 "	1240 "	"			
5TH						180 "	1320 "	"			
6TH						210 "	1340 "	"			
7TH						235 "	1420 "	"			
8TH											
9TH											
10TH											
11TH											
12TH											

Shaft Horse Power at each turbine H.P. - I.P. - L.P. 2400. Revolutions per minute, at full power, of each Turbine Shaft H.P. - I.P. - L.P. 2850. 1st reduction wheel 532. main shaft 94.

Rotor Shaft diameter at journals H.P. - I.P. - L.P. 140 M.M. Pitch Circle Diameter 1st pinion 309.54 M.M. 1st reduction wheel 1629.16 M.M. 2nd pinion 499.6 M.M. main wheel 2698.98 M.M. Width of Face 1st reduction wheel 320 M.M. main wheel 690 "

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 315 M.M. 1st reduction wheel 340 M.M. 2nd pinion 590 " main wheel 630 "

Flexible Pinion Shafts, diameter 1st 130 M.M. Pinion Shafts, diameter at bearings External 1st 250 M.M. 2nd 450 M.M. Internal 1st 145 " 2nd diameter at bottom of pinion teeth 1st 294.94 M.M. 2nd 484.94 "

Wheel Shafts, diameter at bearings 1st 350 M.M. 2nd 1208 M.M. diameter at wheel main 550 " 1445 M.M. 1st 486 M.M. Generator Shaft, diameter at bearings main 588 " Propelling Motor Shaft, diameter at bearings as per rule 16.4/16 " Thrust Shaft, diameter at collars as per rule 16.16 " Tube Shaft, diameter as per rule 16.16 " as fitted 16 3/4 " as fitted 426 M.M.

Screw Shaft, diameter as per rule 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 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 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 No. Can the H.P. or L.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 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

That pipes pass through the bunkers How are they protected

That 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

Checked 5/2/29

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? -
{ an Auxiliary }
Plans. Are approved plans forwarded herewith for Shafting yes. Main Boilers - Auxiliary Boilers - Donkey Boilers -
(If not state date of approval)
Superheaters - General Pumping Arrangements - Oil Fuel Burning Arrangements -
Spare Gear. State the articles supplied:—

as per list attached.
List not attached.

FOR
SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

The foregoing is a correct description,

G. J. Twedy Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 1928
{ During erection on board vessel - - - }
Total No. of visits 16.
Dates of Examination of principal parts—Casings 22.11.28. Rotors 28.11.28 Blading 28.11.28 Gearing 11.1.29.
Wheel shaft Thrust shaft 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 Steel 40 Tons PER SQUARE INCH. Identification Mark LLOYDS
NS 5900
W.A. 28.11.28
Flexible Pinion Shaft, Material and tensile strength Steel Identification Mark LLOYDS
NS 5910 D
Pinion shaft, Material and tensile strength Steel 5910 D Identification Mark W.A. 28.11.29
8.2.4.11.1.29
1st Reduction Wheel Shaft, Material and tensile strength Steel Identification Mark 5910 D
F.F.E. 11.1.29
Wheel shaft, Material Steel Identification Mark 5910 D
8.2.4.11.1.29
Intermediate shafts, Material Steel Identification Marks 5910 D
8.2.4.11.1.29
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.) The Machinery has been built
under special survey in accordance with the approved
plans & the Rules of the Society.
The workmanship & materials are of good quality
throughout.
The lining has been forwarded to West Hartlepool where
it will be fitted on board the S. S. "City of Dieppe"

The amount of Entry Fee ... £ :
Special ... £ 40 : -
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
When applied for, 15 FEB 1929
When received, 13.2.1929
Wm. H. C.A.

Wm. A. Ferguson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 25 JUN 1929

Assigned

See Hpl 78 16775



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Foundation