

REPORT ON STEAM TURBINE MACHINERY.

No. 83770

Received at London Office
Newcastle-on-Tyne

Date of writing Report 19... When handed in at Local Office 1.2.1929 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 Swan Hunter, Wigham & Bartlett 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 { Direct Current Generator - - - - - }

Propelling Motors, Type - - - - -

rated - Kilowatts - Volts at - revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

| TURBINE LADING. | 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. | 1149 M.M. | 6 | | | |
| 2ND | | | | | | | 120 " | 1190 " | " | | | |
| 3RD | | | | | | | 140 " | 1230 " | " | | | |
| 4TH | | | | | | | 160 " | 1240 " | " | | | |
| 5TH | | | | | | | 180 " | 1320 " | " | | | |
| 6TH | | | | | | | 210 " | 1340 " | " | | | |
| 7TH | | | | | | | 225 " | 1420 " | " | | | |
| 8TH | | | | | | | | | | | | |
| 9TH | | | | | | | | | | | | |
| 0TH | | | | | | | | | | | | |
| 1TH | | | | | | | | | | | | |
| 2TH | | | | | | | | | | | | |

Shaft Horse Power at each turbine { H.P. - - - - - } 1st reduction wheel 532 ✓
{ I.P. - - - - - } main shaft 94 ✓
{ L.P. 2400 ✓ }

Rotor Shaft diameter at journals { H.P. - - - - - } 1st reduction wheel 320 M.M. ✓
{ I.P. - - - - - } main wheel 690 " ✓
{ L.P. 140 M.M. ✓ } 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. ✓

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. ✓ diameter at bottom of pinion teeth { 1st 294.9 M.M. ✓
{ 2nd - - - - - } Internal 1st 145 " ✓ 2nd - - - - - } 2nd 484.94 " ✓

Wheel Shafts, diameter at bearings { 1st 350 M.M. ✓ } diameter at wheel 1208 M.M. ✓ 1st 486 M.M. ✓ Generator Shaft, diameter at bearings
{ main 550 " ✓ } 1445 M.M. ✓ { main 588 " ✓ } Propelling Motor Shaft, diameter at bearings -

Intermediate Shafts, diameter as per rule 16 4/16 " ✓ Thrust Shaft, diameter at collars as per rule 16.16 " ✓ Tube Shaft, diameter as fitted 16 3/4 " ✓ as fitted 426 M.M. ✓

Screw Shaft, diameter as per rule - - - - - Is the { tube } shaft fitted with a continuous liner { - - - - - } Bronze Liners, thickness in way of 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. 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

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 worked from

Checked DE 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} _{an Auxillary} Boiler fitted? - If so, is a report now forwarded? -
 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.

G. J. Tweedy Manufacturer.

The foregoing is a correct description,

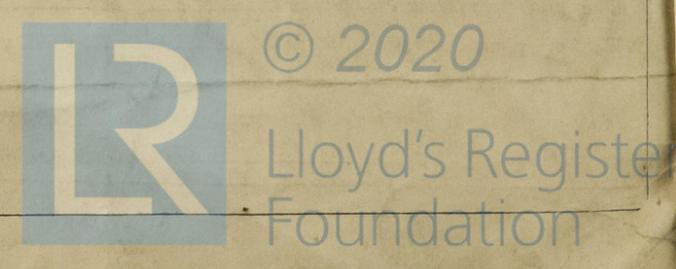
Dates of Survey while building
 During progress of work in shops - - 1928
 During erection on board vessel - - -
 Total No. of visits 16.
 Sep. 24, 25, Oct. 12, 16, 22, 30, Nov. 8, 22, 28, 30, Dec. 12, 28, Jan. 7, 9, 11, 16, 1929
 DIRECTOR.
 Dates of Examination of principal parts—Casings 22. 11. 28. 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 see attached
 Flexible Pinion Shaft, Material and tensile strength Steel Identification Mark see attached
 Pinion shaft, Material and tensile strength Steel 59100, 8.2.8.11.1.29 Identification Mark see attached
 1st Reduction Wheel Shaft, Material and tensile strength Steel Identification Mark see attached
 Wheel shaft, Material Steel Identification Mark see attached Thrust shaft, Material Steel Identification Mark see attached
 Intermediate shafts, Material Steel Identification Marks see attached 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.) *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 turbine 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, 11 FEB 1929
 When received, 13.2.1929
 LONDON, E.C.4.

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

Committee's Minute **TUE 25 JUN 1929**
 Assigned *See Hpl. 78 16775*



Certificate (if required) to be sent to the Registrar of Shipping, London, E.C.4.