

Report on Steam Turbine Machinery.

Rpt. 4a.

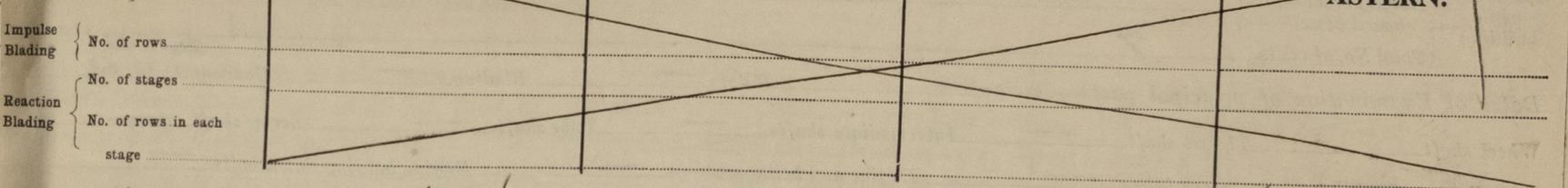
No. 11137
23 APR 1954
11 FEB 1954

Date of writing Report 19... When handed in at Local Office 10-2-1954 Port of NEWCASTLE-ON-TYNE Received at London Office
 No. in Survey held at Reg. Book Date, First Survey 25-8-53 Last Survey 5-1-1954
 on the "MELIKA" (Number of Visits 7)
 Built at HAVERTON HILL ON TEES By whom built FURNESS SB CO LTD Yard No. 462
 GEARING. WALLSEND-ON-TYNE By whom made THOMPSONS MARINE STEAM TURBINE CO LTD ENG. NO 431 When built
 WEST HARTLEPOOL. RICHARDSONS WESTGARDIN CO LTD Engine No 2737 When made 1954
 Boilers made at... By whom made... Boiler No... When made...
 Shaft Horse Power at Full Power 13750 Owners GULF OIL CORPORATION. Port belonging to...
 Nom. Horse Power as per Rule 2750 Is Refrigerating Machinery fitted for cargo purposes... Is Electric Light fitted...
 Trade for which Vessel is intended OCEAN SERVICE.

STEAM TURBINE ENGINES, &c.—Description of Engines D.R. GEARED STEAM TURBINES.

No. of Turbines Ahead 2 Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing Two
 Astern 1 double reduction geared
 direct coupled to Alternating Current Generator phase... periods per second...
 for supplying power for driving Propelling Motors, Type...
 rated... Kilowatts... Volts at... revolutions per minute;...
 Direct coupled, single or double reduction geared to ONE propelling shafts.

TURBINE BLADING.



Shaft Horse Power at each turbine H.P. 6700 ✓ I.P. — L.P. 7050 ✓
 Revolutions per minute, at full power, of each Turbine Shaft H.P. 113549" I.P. — L.P. 147828"
 Rotor Shaft diameter at journals H.P. — I.P. — L.P. — Pitch Circle Diameter 1st pinion H.P. 20.8175" 1st reduction wheel 63.4159"
 2nd pinion L.P. 23.1305" main wheel 154.4605" Width of Face 1st reduction wheel 25" main wheel 46"

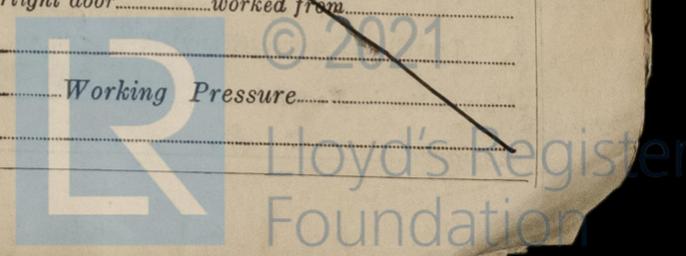
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion H.P. 6" 1st reduction wheel 20 5/16"
 Flexible Pinion 1st LP 8" 2nd pinion 33 1/2" main wheel 37"
 Shafts, diameter at bearings External 1st LP 7" 2nd 15" diameter at bottom of pinion teeth
 Internal 1st — 2nd 10 1/4" Wheel Shafts, diameter at bearings 1st 10" ✓ main 22 1/4" ✓
 Generator Shaft, diameter at bearings 4' - 11 1/2" Propelling Motor Shaft, diameter at bearings 12' - 5 5/8"

Tube Shaft, diameter as per rule... as fitted... Screw Shaft, diameter as per rule... as fitted...
 Thrust Shaft, diameter at collars as per rule... as fitted...
 Is the { tube / screw } shaft fitted with a continuous liner { }
 Bronze Liners, thickness in way of bushes as per rule... Thickness between bushes as per rule...
 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. Turbines 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 both to Main Bilge Pumps and Auxiliary In Pump Room

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
 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...
 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...
 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

HEATERS, &c.—(Letter for record...) Total Heating Surface of Boilers... Working Pressure...
 Forced Draft fitted... No. and Description of Boilers...
 a Report on Main Boilers now forwarded? NO



014335-014348-0274

Is a Donkey Boiler fitted? If so, is a report now forwarded? No

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

Geared turbines situated aft. Have torsional vibration characteristics of system been approved. YES Date of approval. 13/11/51

SPARE GEAR. ARRANGEMENT OF GEARING. 13/11/51.

Has the spare gear required by the Rules been supplied. YES

State the principal additional spare gear supplied. -

SEE WEST HARTLEPOOL CERTIF. NO. C. 2059
FOR FABRICATION OF GEARCASE.

The foregoing is a correct description.

OR THE PARSONS MARINE STEAM TURBINE CO. LIMITED.

Andrew Foster
MANAGING DIRECTOR

Dates of Survey while building: During progress of work in shops - (1951) AUG. 25. SEPT. 13. OCT. 13. NOV. 24. DEC. 1. 6. (1954) JAN. 5.
During erection on board vessel - - -
Total No. of visits. 7

Dates of Examination of principal parts—Casings Rotors Blading Gearing 24. 11. 53

Wheel shaft Thrust shaft 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 Identification Mark

Flexible Pinion Shaft, Material and tensile strength 31-35 TONS 10" Identification Mark HP. 29948 CD. 29

Pinion shaft, Material and tensile strength EN. 25. 2 1/2% MOLY. NICKEL CHROME STEEL. 55/65 TONS 10" Identification Mark HP. 30881 CD. 18

; Chemical analysis. SEE NWC LETTER. 11.7.52.

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment. 24.7.25 - 17.8.50

1st Reduction Wheel Shaft, Material and tensile strength FORGED STEEL 21-35 TONS 10" Identification Mark 24725 17891

Wheel shaft, Material FORGED STEEL 31/35 TONS 10" Identification Mark 30878 HAS. Thrust shaft, Material Identification Mark

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.) The unmachined gear case was delivered to after fabrication by Richardson's Westgarths - see W.H.P. certif. C. 2059.

The gearcase & gearing have been constructed under special Survey in accordance with approved plans and the requirements of the Rules or their equivalent, the gears meshed their bearings found satisfactory. The materials & workmanship are good.

The gearing has been sent to Richardson's Westgarths West Hartlepool for erection with the Turbines.

It is submitted for the favourable consideration of the Committee that the gearing is suitable for service with the steam turbines classed +LMC. (with date) when they have been in following full power trials as required by the Secretaries Letter dated 14/11/51.

The amount of Entry Fee ... £ 72-4-0
Special ... £ : :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for Nov. to be credited with £ 72-4-0.
When received

W. Nicholson - T.O. Winter
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUESDAY 7 - DEC 1954

Assigned See Ref. Ha.

