

AUXILIARY

Report on Steam Turbine Machinery.

No. 130026

Rpt. 4a.

Date of writing Report 9th SEPT. 1954 When handed in at Local Office 20 SEP 1954 Port of LONDON Received at London Office 22 SEP 1954

No. in Survey held at ERITH Date, First Survey 25.6.53 Last Survey 19.8.1954
Reg. Book REC. LTD FRASER & CHALMERS ENG. WORKS (Number of Visits 15)

on the FURNESS Tons (Gross) 462 (Net) 462
Built at RICHARDSON WESTGARTH By whom built RICHARDSON WESTGARTH Yard No. 462 When built 1954
Engines made at FURNESS By whom made FURNESS Engine No. 12 When made 1954
Boilers made at FURNESS By whom made FURNESS Boiler No. 12 When made 1954
Shaft Horse Power at Full Power 670 Owners GULF OIL CORPORATION Port belonging to GULF OIL CORPORATION
Nom. Horse Power as per Rule 670 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No
Trade for which Vessel is intended Oil

STEAM TURBINE ENGINES, &c.—Description of Engines TWO - 500 KW TURBO-ALTERNATORS
No. of Turbines ONE Ahead ONE Astern — single reduction geared to ALTERNATOR SEE 7B.
Alternating Current Generator 3 phase 60 periods per second rated 500 Kilowatts 450 Volts at 1200 revolutions per minute;
for supplying power for AUX PURPOSES Reaction Motor Direct Current Generator

TURBINE BLADING.	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading { No. of rows <u>EIGHT</u>				
Reaction Blading { No. of stages <u>—</u>				
{ No. of rows in each stage <u>—</u>				

Shaft Horse Power at each turbine { H.P. 670 I.P. — L.P. — }
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 6500 I.P. — L.P. — }
Rotor Shaft diameter at journals { H.P. — I.P. — L.P. — }
Pitch Circle Diameter { 1st pinion — 1st reduction wheel — 2nd pinion — main wheel — }
Width of Face { 1st reduction wheel — main wheel — }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion — 1st reduction wheel — 2nd pinion — main wheel — }

Flexible Pinion Shafts, diameter { 1st — 2nd — }
Pinion Shafts, diameter at bearings { External — Internal — }
Wheel Shafts, diameter at bearings { 1st — 2nd — }
Generator Shaft, diameter at bearings { 1st — 2nd — }
Propelling Motor Shaft, diameter at bearings —

Intermediate Shafts, diameter { as per rule — as fitted — }
Thrust Shaft, diameter at collars { as per rule — as fitted — }
Tube Shaft, diameter { as per rule — as fitted — }
Screw Shaft, diameter { 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 — as fitted — }
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 —
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 Bilge Pumps, No. and size:—In Engine and Boiler Room — In Pump Room —

In Holds, &c. — Independent Power Pump Direct Suctions to the Engine Room —
Main Water Circulating Pump Direct Bilge Suctions, No. and size — Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes —
Bilges, No. and size — 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 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 —

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? —

014335-014348-0273



Is ^{a Donkey} an Auxiliary Boiler fitted? If so, is a report now forwarded?
 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. Date of approval.

SPARE GEAR.

Has the spare gear required by the Rules been supplied?
 State the principal additional spare gear supplied. **ONE SPARE TURBINE ROTOR COMPLETE**

The foregoing is a correct description,

Dates of Survey while building	During progress of work in shops - - -	1953. 25/6 2/7 10/11 24/11 7/12 10/12 1954 5/2 3/5 4/5 21/5 11/6 7/7	During erection on board vessel - - -	16/7 10/8 19/8
	Total No. of visits	15.		
Dates of Examination of principal parts	Casings	1953. 25/6 2/7 10/11 24/11 7/12 10/12 1954 5/2 3/5 4/5 21/5 11/6 7/7	Rotors	5/2/54 3/5/54 19/8/54
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	4/5/54 21/5/54
Main boiler safety valves adjusted	Thickness of adjusting washers			
Rotor shaft, Material and tensile strength			Identification Mark	SET 1 7666 SET 2 7667 SPARE 7665
Flexible Pinion Shaft, Material and tensile strength	GEARBOXES DAVID BROWN SEE C. 21200 ISS ^d LEEDS 21/12/53		Identification Mark	SET 1 191953 SET 2 191953
Pinion shaft, Material and tensile strength			Identification Mark	SET 1 191953 SET 2 191953

Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment.
 Lot Production Wheel Shaft, Material and tensile strength. IDENTIFICATION MARK SET 1 CL 5698 SET 2 CL 5697
 Wheel shaft, Material OIL COOLERS IDENTIFICATION MARK SET 1 CL 5698 SET 2 CL 5697
 Intermediate shafts, Material IDENTIFICATION MARKS
 Screw shaft, Material IDENTIFICATION MARKS
 Steam Pipes, Material TEST PRESSURE 20.15

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. No. If so, state name of vessel.

General Remarks. (State quality of workmanship, opinions as to class, &c.)
 These turbo-attuator sets have been constructed throughout of tested material, the workmanship being satisfactory, and on completion have been tested under working conditions. In my opinion they are eligible for installation in the above classed vessel.

On completion of full power trials the gear cases were specially examined & found sound & free from defects. (REF SECY'S ENG 7 22.7.5)

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 ... £ ~~42-0-0~~ 42-0-0 When applied for 20 SEP 1954
 Special ... £ ✓ : 19
 Donkey Boiler Fee ... £ ✓ : When received
 Travelling Expenses (if any) £ 3-17-6 DEC 1954
 Committee's Minute
 Assigned

John C. Bunt
 Engineer Surveyor to Lloyd's Register of Shipping.
 For K.G. KIRBY E.J. JONES & SELF

