

AUXILIARY
Report on Steam Turbine Machinery.

Rpt. 4a.

No. 130026

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 552-210 SETS 1 & 2 (Number of Visits 15)

Built at FURNESS By whom built RICHARDSON WESTGARTH Yard No. 462
Engines made at By whom made Engine No. When built
Boilers made at By whom made Boiler No. When made
Shaft Horse Power at Full Power Owners GULF OIL CORPORATION 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 TWO — 500 KW TURBO-ALTERNATORS

No. of Turbines Ahead ONE Astern —
No. of Turbines 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 Direct Current Generator

TURBINE BLADING.		H. P.	I. P.	L. P.	ASTERN.
Impulse Blading	No. of rows	EIGHT			
Reaction Blading	No. of stages				
	No. of rows in each stage				

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 1st ✓ 2nd ✓ Internal 1st ✓ 2nd ✓
diameter at bottom of pinion teeth 1st ✓ 2nd ✓

Wheel Shafts, diameter at bearings 1st ✓ 2nd ✓
main diameter at wheel shroud 1st ✓ 2nd ✓
Generator Shaft, diameter at bearings 1st ✓ 2nd ✓
Propelling Motor Shaft, diameter at bearings 1st ✓ 2nd ✓

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
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

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

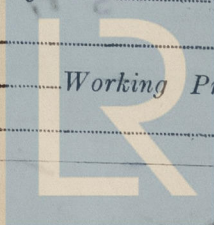
Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers

Is Forced Draft fitted No. and Description of Boilers

Is a Report on Main Boilers now forwarded?

Working Pressure



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Is { a Donkey } Boiler fitted? If so, is a report now forwarded?
{ an Auxiliary }
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 5/2/54 3/5/54 19/8/54 Rotors. 5/2/54 3/5/54 19/8/54 Blading. 5/2/54 3/5/54 19/8/54 Gearing. ✓
Wheel shaft. ✓ Thrust shaft. ✓ Intermediate shafts. ✓ Tube shaft. 10/8/54 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
Flexible Pinion Shaft, Material and tensile strength. GEARBOXES. DAVID BROWN. SEE C. 21200 ISS. 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 5648 SET 2 CL 5647
Wheel shaft, Material. OIL COOLERS. IDENTIFICATION MARK. SET 1 CL 5648 SET 2 CL 5647
Intermediate shafts, Material. IDENTIFICATION MARKS. SET 1 CL 5648 SET 2 CL 5647
Screw shaft, Material. IDENTIFICATION MARKS. SET 1 CL 5648 SET 2 CL 5647
Steam Pipes, Material. IDENTIFICATION MARKS. SET 1 CL 5648 SET 2 CL 5647

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-alternator 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 Sec's EN 17.7.5)

The amount of Entry Fee ... £ 42-0-0 When applied for 20 SEP 1954
Special ... £ 19
Donkey Boiler Fee ... £ 17
Travelling Expenses (if any) £ 3-17-6 DEC 1954
TUESDAY 7 - DEC 1954

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.

for K. KIRBY E.J. JONES & SELF



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