

Report on Steam Turbine Machinery. No. 81508

4a.

Received at London Office
 of writing Report 9. 2. 1954 When handed in at Local Office 10. 2. 1954 Port of **GLASGOW** 18 AUG 1954
 in Survey held at **GLASGOW** Date, First Survey 2nd Sep. 1953 Last Survey 26th January 1954
 Book (Number of Visits 8)
 on the **S.S. WORLD HARMONY** Tons Gross Net
 built at **NEWCASTLE** By whom built **VICKERS ARMSTRONG LTD** Yard No. **135** When built **1954**
 engines made at **GLASGOW** By whom made **YARROW & CO. LTD.** Engine No. **2036/11-12** When made **1954**
 boilers made at **W. HARTLEPOOL** By whom made **RICHARDSONS WESTGARTH & CO** Boiler No. When made **1954**
 shaft Horse Power at Full Power **13,750 MAX.** Owners **WORLD TANKERS CORPORATION** Port belonging to **PIREUS**
 nominal Horse Power as per Rule **2,750** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **YES**
 trade for which Vessel is intended **CARRYING PETROLEUM IN BULK**

STEAM TURBINE ENGINES, &c.—Description of Engines 2 - 500 KW. TURBO ALTERNATOR SETS.

of Turbines Ahead 1 Direct coupled, single reduction geared to propelling shafts No. of primary pinions to each set of reduction gearing 1
 Stern - double reduction geared
 Direct coupled to Alternating Current Generator 3 phase 60 periods per second rated 500 Kilowatts 440 Volts at 1800 revolutions per minute;
 Direct Current Generator
 manufacturer 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.
Number of rows	6	-	-	-
No. of stages	-	-	-	-
No. of rows in each stage	-	-	-	-

shaft Horse Power at each turbine H.P. 500 KW (670 H.P.) I.P. - L.P. -
 Rotor Shaft diameter at journals H.P. 3" I.P. - L.P. -
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings
 Flexible Pinion 1st - 2nd -
 Pinion Shafts, diameter at bearings External 1st 3 1/2" 2nd - Internal 1st - 2nd -
 Wheel Shafts, diameter at bearings 1st - 2nd -
 Intermediate Shafts, diameter as per rule as fitted
 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
 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
 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
 Lubricating Oil Pumps, including Spare Pump, No. and size
 Ballast Pumps, 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.
 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 they fitted with Valves or Cocks
 Are all Sea Connections fitted direct on the skin of the ship
 Are the Overboard Discharges above or below the deep water
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates
 Are the Blow Off Cocks fitted with a spigot and brass line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel
 How are they protected
 covering plate What pipes pass through the bunkers
 Have they been tested as per rule
 What pipes pass through the deep tanks
 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?

Is { a Donkey } 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

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

The foregoing is a correct description.

Dates of Survey while building During progress of work in shops - 1953 Sep 2. 16. 24. Dec. 23. 24. 28 (1954) Jan. 22. 26. During erection on board vessel - - - - - Total No. of visits. 8

Dates of Examination of principal parts - Casings 31/4/53, 10/4/53, 14/4/53. Rotors 4/8/53 26/1/54 Blading 4/8/53 26/1/54 Gearing 16/12/52 26/1/54

Wheel shaft 26/1/54 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 Steel 1% Ni 41/93 Tensile 10" Identification Mark N° H. 56758 N° 12. 5. 2173.

Flexible Pinion Shaft, Material and tensile strength - Identification Mark -

Pinion shaft, Material and tensile strength Steel 44 Tons/0" Identification Mark N° H. 56758 N° 12. 5. 2173

; Chemical analysis As per Rule reqts.

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

1st Reduction Wheel Shaft, Material and tensile strength Steel Identification Mark N° H. 57597 N° 12. 5. 7625 Rim Identification Mark N° H. 5775 N° 12. 5. 776

Wheel shaft, Material Steel Identification Mark N° H. 57597 N° 12. 5. 7625 Material Steel Identification Mark N° H. 5775 N° 12. 5. 776

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. Yes If so, state name of vessel. Vickers Armstrong Ltd. N° 13

General Remarks. (State quality of workmanship, opinions as to class, &c.)

The two geared turbine sets have been constructed under Special Survey in accordance with the Rules and approved plans, the materials and workmanship being found good. Each completed engine has been tested under full load condition for a period of 4 hours duration, governing, overspeed and trip tests were carried out and all found satisfactory. The turbines, gearing and all bearings were subsequently opened out and examined and so far as could be seen found satisfactory.

In my opinion the two turbine sets are eligible for installation in a classed Vessel.

These two turbo alternator sets have been installed in SS WORLD HARMONY examined under full working conditions, governors tested and found to operate satisfactorily.

The amount of Entry Fee ... £ 42-0-0 When applied for 16 FEB 1954 Special ... £ : : 16 FEB 1954 Donkey Boiler Fee ... £ : : When received Travelling Expenses (if any) £ - : 5 - 19

Committee's Minute

Assigned

Deferred for completion

John Macleod

Engineer Surveyor to Lloyd's Register of Shipping.

FRIDAY 22 OCT 1954

See New F.E. Rpt.

Lloyd's Register Foundation