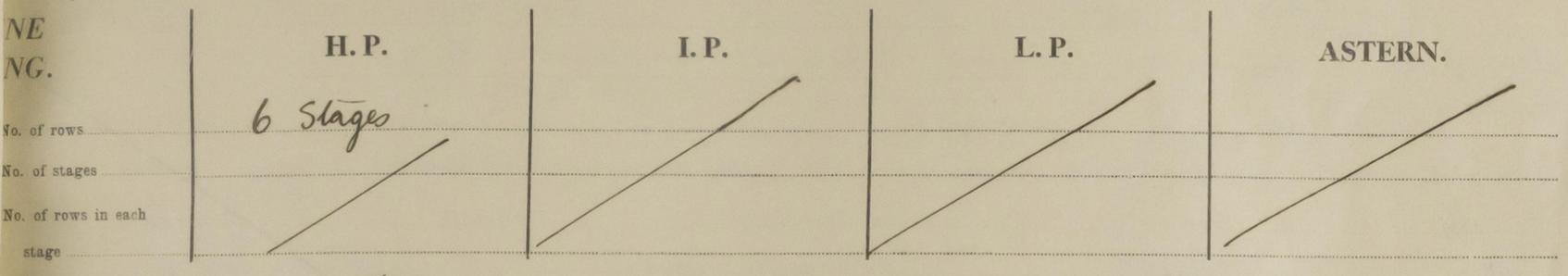


AUX Report on Steam Turbine Machinery.

Received at London Office **27 JUL 1949**

Reporting Report 19... When handed in at Local Office **19/7/49** 19... Port of **NEWCASTLE-on-TYNE**
 Survey held at **Wallsend/Tyne** Date, First Survey **28/4/49** Last Survey **21/6/49** 19...
 (Number of Visits **16**)
 on the **T.E.S. Esso Birmingham.** Tons {Gross **10727**
 {Net **6324**
 made at **Chester, Pa.** By whom built **Sun S.B. & Dry Dock Co** Yard No. **26265879** When built **1943**
 made at **Hynn, Mass.** By whom made **General Electric Co. AUX** Engine No. **65861** When made **1943**
 made at **✓** By whom made **Babcock & Wilcox Ltd** Boiler No. **✓** When made **1943**
 Horse Power at Full Power **6000** Owners **Anglo American Oil Co Ltd** Port belonging to **London**
 Horse Power as per Rule **1500 MW** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **yes**
 for which Vessel is intended **Carrying Petroleum in bulk.**

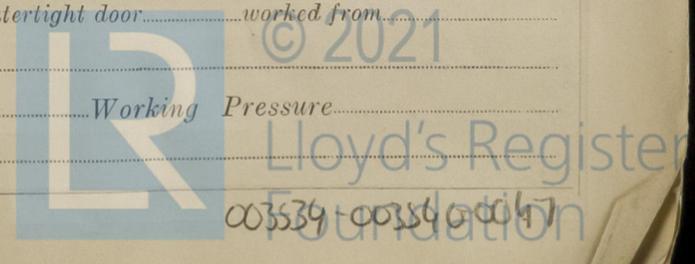
AUX TURBINE ENGINES, &c.—Description of **Aux** Engines **Two single reduction geared impulse turbines**
 Ahead **One** Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing
 Astern double reduction geared
 coupled to Alternating Current Generator **3** phase **60** periods per second Direct Current Generator rated **400** Kilowatts **450** Volts at **1200** revolutions per minute;
 driving power for driving Propelling Motors, Type
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.



Horse Power at each turbine { H.P. **700** I.P. L.P. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. **5645** I.P. L.P. } 1st reduction wheel
 Shaft diameter at journals { H.P. **2 1/2"** I.P. L.P. } Pitch Circle Diameter { 1st pinion **5.43** 1st reduction wheel **25.58** 2nd pinion main wheel } Width of Face { 1st reduction wheel **8 1/2"** main wheel }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion **6.58** 2nd pinion } 1st reduction wheel **8 1/2"** main wheel }
 Pinion diameter { 1st 2nd } Pinion Shafts, diameter at bearings { External 1st **4"** 2nd } Internal 1st 2nd } diameter at bottom of pinion teeth { 1st **5.125"** 2nd }
 Shafts, diameter at bearings { 1st **4"** main } diameter at wheel shroud, { 1st main } Generator Shaft, diameter at bearings **5"** Propelling Motor Shaft, diameter at bearings
 Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted

Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted Is the { tube } shaft fitted with a continuous liner { }
 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 stern tube
 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 the 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
 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.
 Are the 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 stern
 No. of Turbines fitted with astern wheels Feed Pumps { No. and size How driven }
 Connected to the Main Bilge Line { No. and size How driven }

Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
 Independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary Pumps, No. and size:—In Engine and Boiler Room In Pump Room
 Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
 No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 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
 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
 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 plate
 What pipes pass through the bunkers How are they protected
 Pipes pass through the deep tanks Have they been tested as per rule
 Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times
 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 or from one compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from
 R.S., &c.—(Letter for record) Total Heating Surface of Boilers Working Pressure
 Red Draft fitted No. and Description of Boilers
 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.....
(If not, state date of approval)

Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

Gearred 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 - - }
 { During erection on board vessel - - }
 Total No. of visits

Dates of Examination of principal parts—Casings..... Rotors..... Blading..... Gearing.....

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..... Identification Mark.....

Pinion shaft, Material and tensile strength..... Identification Mark.....

.....; Chemical analysis.....

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

1st Reduction Wheel Shaft, Material and tensile strength..... Identification Mark.....

Wheel shaft, Material..... Identification Mark..... 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..... *yes*..... If so, state name of vessel..... *T2. Tanker Auxiliaries*

General Remarks. (State quality of workmanship, opinions as to class, &c.)
These Machines have been constructed under the supervision of the U.S. Coastguard & the American Bureau of Shipping. The workmanship is good the materials considered sound. The Machines have been examined opened & under working conditions & found efficient.

The amount of Entry Fee	... £	:	:	When applied for.
Special	... £	:	:	19
Donkey Boiler Fee	... £	:	:	When received.
Travelling Expenses (if any)	£	:	:	19

FRI. 14 OCT 1919

J.W. Walker

Engineer Surveyor to Lloyd's Register of Shipping.



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Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

Committee's Minute.....

Assigned.....