

# Report on Steam Turbine Machinery.

No. 127893

pt. 4a.

Received at London Office **24 NOV 1948**  
 Date of writing Report 19... When handed in at Local Office 19... Port of **HIVERPOOL**  
 No. in Survey held at **BIRKENHEAD** Date First Survey... Last Survey **30/10/1948**  
 Reg. Book... (Number of Visits...)  
 on the **Esso LONDON** Tons {Gross 10712, Net 6301}  
 Built at **CHESTER PENNSYLVANIA U.S.A.** By whom built **SUN SHIPBUILDING & DRYDOCK** Yard No... When built **1944**  
 Engines made at **SCHENACTADY U.S.A.** By whom made **GENERAL ELECTRIC** Engine No. **61819** When made **1944**  
 Boilers made at **NEW YORK U.S.A.** By whom made **BABCOCK & WILCOX Co.** Boiler No. **P-9675** When made **1944**  
 Shaft Horse Power at Full Power **6000** Owners **ANGLO AMERICAN OIL CO. LTD.** Port belonging to **LONDON**  
 Nom. Horse Power as per Rule **1396 MN=1485** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **YES**  
 Trade for which Vessel is intended...

**STEAM TURBINE ENGINES, &c.**—Description of Engines **Turbo-electric drive - 10 Stage Impulse.**  
 No. of Turbines **One** Direct coupled, single reduction geared } to  propelling shafts. No. of primary pinions to each set of reduction gearing   
 Direct coupled to { Alternating Current Generator **3** phase **60** periods per second } rated **4925** Kilowatts **2300** Volts at **3600** revolutions per minute;  
 for supplying power for driving **One** Propelling Motors, Type **Synchronous**  
 rated **2300** Kilowatts **90** revolutions per minute. Direct coupled, single or double reduction geared to **One** propelling shafts.

TURBINE STAGING.	H. P.			I. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1st Expansion	1 7/16 - 1 1/2		2									
2nd "	1 1/2		1									
3rd "	1 5/8		1									
4th "	1 7/8		1									
5th "	1 7/16		1									
6th "	1 3/16		1									
7th "	2 9/8		1									
8th "	4 7/16		1									
9th "	6 9/8		1									
10th "	11		1									
11th "												
12th "												

Shaft Horse Power at each turbine **H.P. 3600** 1st reduction wheel   
**I.P.**  **Revolutions per minute, at full power, of each Turbine Shaft** **I.P. 90** main shaft   
**L.P.**

Rotor Shaft diameter at journals **H.P. 5" AFT** Pitch Circle Diameter { 1st pinion  1st reduction wheel  Width of Face { 1st reduction wheel   
**I.P. 10" FORD** { 2nd pinion  main wheel  { main wheel   
**L.P.**

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 at bearings { 1st  External  1st  2nd  diameter at bottom of pinion teeth  
 { 2nd  Internal  2nd

Wheel Shafts, diameter at bearings { 1st  diameter at wheel shroud, { 1st  Generator Shaft, diameter at bearings **5.507**  
 { main  { main  Propelling Motor Shaft, diameter at bearings **17.25"**  
 as per rule **16.56"** Thrust Shaft, diameter at collars as per rule **17.39"**  
 as fitted **16.875"** as fitted **17.5"**

Tube Shaft, diameter as per rule  Screw Shaft, diameter as per rule **18.185"** Is the { tube  screw  shaft fitted with a continuous liner {  
 as fitted  as fitted

NEWCASTLE REPORT NO 104937 as per rule **0.858"** as per rule **0.643** Is the after end of the liner made watertight in the  
 Bronze Liners, thickness in way of bushes as fitted  Thickness between bushes as fitted

propeller boss **yes** 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 **No** If so, state type  Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter **19'-6"** Pitch **17'-6"** No. of Blades **4** State whether Moveable **No** Total Developed Surface **138.3** 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 **2-200 G.P.M.** **1-130 G.P.M.**  
 How driven **Steam turbine** **Steam Vertical Simplex**

Pumps connected to the Main Bilge Line { No. and size **2-200 G.P.M.** **1-450 G.P.M.** **1-300 G.P.M. (Hord pump room)**  
 How driven **Electric** **Steam Vertical Duplex**

Ballast Pumps, No. and size **1-300 G.P.M. (Hord pump room)** Lubricating Oil Pumps, including Spare Pump, No. and size **2-60 G.P.M.**  
 Are tub independent means arranged for circulating water through the Oil Cooler **yes** Suctions, connected both to Main Bilge Pumps and Auxiliary  
 Bilge Pumps, No. and size:—In Engine and Boiler Room **1 @ 3 1/2" 8 @ 3" (inc motor well) 4 @ 2 1/2" (boiler flat)** In Pump Room

In Holds, &c. Main Water Circulating Pump Direct Bilge Suctions, No. and size **1 @ 18"** Independent Power Pump Direct Suctions to the Engine Room  
 Bilge, No. and size **2 @ 4"** Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **yes**

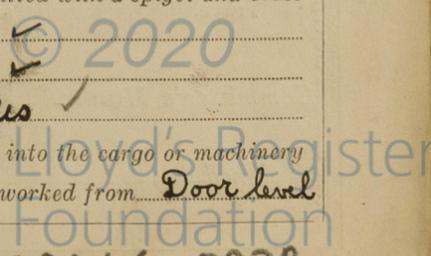
Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **yes**  
 Are all Sea Connections fitted direct on the skin of the ship **skin inlet boxes** Are they fitted with Valves or Cocks **all valves**

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates **yes** Are the Overboard Discharges above or below the deep water  
 line **below** Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **yes** Are the Blow Off Cocks fitted with a spigot and brass  
 covering plate **No** What pipes pass through the bunkers **None** How are they protected

What pipes pass through the deep tanks **None** 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 **yes**

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 **yes** Is the Shaft Tunnel watertight **yes** Is it fitted with a watertight door **yes** worked from **Door level**

002639-002646-0028



BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers. *5677 square feet per boiler*  
 Is Forced Draft fitted *yes* No. and Description of Boilers *Two B.W. Type* Working Pressure *500 lbs.*

Is a Report on Main Boilers now forwarded? *yes*  
 Is *a Donkey* Boiler fitted? *No* 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 *No* Main Boilers *No* Auxiliary Boilers  Donkey Boilers   
 (If not, state date of approval)

Superheaters *No* General Pumping Arrangements *No* Oil Fuel Burning Arrangements *No*

SPARE GEAR.

Has the spare gear required by the Rules been supplied. *Spare propeller to supply to complete spare gear.*  
 State the principal additional spare gear supplied.

The foregoing is a correct description,

Manufacturer

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

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. If so, state name of vessel.

General Remarks. (State quality of workmanship, opinions as to class, &c.) *This report is submitted for the information of the committee.*

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

*James H. Smyth*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute. **LIVERPOOL 23 NOV 1948**

Assigned *See Minute on Liv. Mach. Dept.*

