

# Report on Steam Turbine Machinery.

No. 128229

Date of writing Report 19... When handed in at Local Office 19... Port of LIVERPOOL  
 No. in Survey held at BIRKENHEAD Date, First Survey 24/9/48 Last Survey 4/12/48  
 Reg. Book 34985 on the T.E.S. "TRIGONOSEMUS" & "TUOLUMME MEADOWS" Tons (Gross 10640 Net 6303)  
 Built at PORTLAND OREGON By whom built KAISER CO INC Yard No. When built 1944/5  
 Engines made at SCHEMECTADY By whom made GENERAL ELECTRIC Engine No. 61792 When made 1944  
 Boilers made at By whom made COMBUSTION ENG. Boiler No. When made 1944  
 Shaft Horse Power at Full Power 6000 Owners ANGLO SAYON P. CO Port belonging to LONDON.  
 Nom. Horse Power as per Rule MM 1486 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES  
 Trade for which Vessel is intended PETROLEUM IN BULK

## STEAM TURBINE ENGINES, &c.—Description of Engines. TURBO ELECTRIC DRIVE 10 STAGE IMPULSE

No. of Turbines Ahead ONE Direct coupled, single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing  
 Astern  
 direct coupled to { Alternating Current Generator 3 phase 62 periods per second } rated 5400 Kilowatts 2370 Volts at 3715 revolutions per minute;  
 Direct Current Generator }  
 for supplying power for driving ONE Propelling Motor, Type 3 PHASE 62 CYCLE, 80 POLE, REVOLVING FIELD, SALIENT POLE SYC.  
 rated 6000 BHP Kilowatts 2300 Volts at 90 revolutions per minute. Direct coupled, single or double reduction geared to ONE propelling shaft.  
 4625 K.V.A.

TURBINE BLADING.	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			2									
2nd			1									
3rd			1									
4th			1									
5th			1									
6th			1									
7th			1									
8th			1									
9th			1									
10th			1									
11th			1									
12th			1									

Shaft Horse Power at each turbine H.P. I.P. L.P. } 3715 1st reduction wheel  
 I.P. } 90 main shaft

Rotor Shaft diameter at journals H.P. 5700 I.P. L.P. } Pitch Circle Diameter { 1st pinion 1st reduction wheel Width of Face 1st reduction wheel  
 2nd pinion 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 at bearings External Internal { 1st 2nd diameter at bottom of pinion teeth  
 2nd

Wheel Shafts, diameter at bearings { 1st diameter at wheel shroud, 1st Generator Shaft, diameter at bearings 5.507  
 main 16.56 Propelling Motor Shaft, diameter at bearings 17.26

Intermediate Shafts, diameter as per rule 16.875 as fitted Thrust Shaft, diameter at collars as per rule 17.39 as fitted 17.5

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule 18.185 as fitted 18.625 Is the tube screw shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes as per rule .858 as fitted 1.125 Thickness between bushes as per rule .643 as fitted 1.0625 Is the after end of the liner made watertight in the 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 7'-3"

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 NONE Feed Pumps { No. and size 2 CENT. 200 GPM 1-130 GPM  
 How driven TURBINE STEAM (NERT)

Pumps connected to the Main Bilge Line { No. and size 2-175 GPM 1 BUTTERWORTH-BALLAST 450 GPM 1 BUTTERWORTH BILGE 450  
 How driven ELECTRIC MOTOR

Ballast Pumps, No. and size 1 FR 450 GPM 1 F 20 P.R. 300 GPM Lubricating Oil Pumps, including Spare Pump, No. and size 2-60 GPM  
 Are two 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 8-3" 2-3 1/2" 2-4" In Pump Room 2-2 1/2"  
 In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1-18" Independent Power Pump Direct Suctions to the Engine Room  
 Bilges, 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 CHESTS STAND PIPES Are they fitted with Valves or Cocks VALUES

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 FLOOR LEVEL

BOILERS, &c.—(Letter for record.....) Total Heating Surface of Boilers 11354  $\Phi$   
 Is Forced Draft fitted YES ✓ No. and Description of Boilers 2 W.T. Working Pressure 465/500 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 YES ✓  
 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 YES ✓ Have the requirements of the Rules for the use of oil as fuel been complied with YES ✓  
 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

General Remarks. (State quality of workmanship, opinions as to class, &c.)  
The machinery of this vessel was constructed under the supervision of the A.B. Surveyors and the condition as seen is satisfactory and eligible in my opinion for classification

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

B. Bedford  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... **LIVERPOOL** - 1 FEB 1949  
 Assigned See Minute on Liverpool Mch. Rps.

