

Rpt. 4a.

AUXILIARY
REPORT ON STEAM TURBINE MACHINERY.

No. 4250

Received at London Office

18 MAY 1949

Date of writing Report 25 January 1949 When handed in at Local Office 19 Port of Boston, Massachusetts
No. in Survey held at Fitchburg, Mass. Date, First Survey 15 December Last Survey 16 December 1948
Reg. Book on the S. S. KUWAIT (Number of Visits 2)

Built at Chester, Pa. By whom built Sun Shipbuilding & Dry Dock Co. Turb. No. 71566 When built
Engines made at Fitchburg, Mass. By whom made General Electric Co. No. 86344 When made 1948
Boilers made at By whom made Gear No. 6806333 When made
Shaft Horse Power at Full Power Owners Gulf Oil Corporation Generator No. 6806333 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. Geared Turbine Generator Set

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~~ }
~~Direct coupled~~ } Alternating Current Generator 3 phase 60 periods per second } rated 400 Kilowatts 440 Volts at 1200 revolutions per minute;
Direct Current Generator }
for supplying power for driving ~~Propelling shafts~~ Auxiliary Machinery and Lighting
rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

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	.440"	19.342"	1									
2ND	.695"	17.597"	1									
3RD	1.110"	17.614"	1									
4TH	1.040"	18.372"	1									
5TH	1.420"	19.102"	1									
6TH	2.200"	20.230"	1									
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. 10,059 1st reduction wheel
I.P. revolutions per minute, at full power, of each Turbine Shaft { I.P.
L.P. main shaft 1200

Rotor Shaft diameter at journals { H.P. 2.50" Pitch Circle Diameter { 1st pinion 3.4" 1st reduction wheel
I.P. { 2nd pinion main wheel 28.5" Width of Face { 1st reduction wheel 8-1/4"
L.P. { main wheel 28.5" Face { main wheel 8-1/4"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 6" 1st reduction wheel
2nd pinion main wheel 6"

Flexible Pinion Shafts, diameter { 1st Pinion Shafts, diameter at bearings External 1st 3" 2nd diameter at bottom of pinion teeth { 1st 3.1686"
2nd Internal 1st 2nd { 2nd

Wheel Shafts, diameter at bearings { 1st diameter at wheel shroud, { 1st Generator Shaft, diameter at bearings 3"
main 4" main 4-1/8" Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule
as fitted as fitted as fitted

Screw Shaft, diameter as per rule Is the { tube } shaft fitted with a continuous liner { Bronze Liners, thickness in way of bushes as per rule
as fitted as fitted as fitted

Thickness between bushes as per rule 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 shaft 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. Turbine 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 to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler 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

Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted?
{ an Auxiliary }

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:— One set of bearing linings for all bearings, one set of bearing bolts and casing bolts.

The foregoing is a correct description,

A. E. Finner *J. E. C.* Manufacturer

Dates of Survey of Survey while building { During progress of work in shops - - } December 15, 16, 1948
{ During erection on board vessel - - }
Total No. of visits Two

Dates of Examination of principal parts—Casings December 15, 1948 Rotors December 15, 1948 Blading December 15, 1948 Gearing December 15, 1948

Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

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 O. H. Steel 111,900 lbs.

Identification Mark LR 202 16-12-48 T

~~Pinion shaft~~ Shaft, Material and tensile strength

Identification Mark

Pinion shaft, Material and tensile strength O. H. Steel 101,000 lbs.

Identification Mark LR 202 16-12-48 T

1st Reduction Wheel Shaft, Material and tensile strength O. H. Steel 89,750 lbs.

Identification Mark LR 202 16-12-48 T

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

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.) The geared turbine electric generator has been tested under Special Survey in accordance with approved plans. The forgings and castings were tested by A. B. S. Surveyors and for particulars of test, please refer to attached list. The Machinery was tested under steam at various loads and found efficient and the overspeed governor was adjusted to trip at 1340 R.P.M. The unit has been forwarded to the Sun Shipbuilding & Dry Dock Co., Chester, Pa. For identification purposes, the Turbine was marked LR 202 16-12-48 T. B.

Arranged fee to be charged by Philadelphia Surveyors on completion

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	\$6.00	:	19

Thomas D. Smith
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK APR 27 1949

Assigned *See First Entry Report attached.*



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Foundation