

Rpt. 4a.

AUXILIARY
REPORT ON STEAM TURBINE MACHINERY.

No. 4251

Received at London Office 18 MAY 1949

Date of writing Report 25 Jan. 1949 When handed in at Local Office

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

J.S. KUWAIT

(Number of Visits 2)

Tons } Gross
Net

Built at Chester, Pa.

By whom built Sun Shipbuilding & Dry Dock Co.

When built

Engines made at Fitchburg, Mass.

By whom made General Electric Co.

Turb. No. 71567 When made 1948

Boilers made at

By whom made

Gear No. 86347 When made

Shaft Horse Power at Full Power

Owners Gulf Oil Corporation

Generator No. 6806334

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 ~~XXXXXX~~ single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing
Astern ~~XXXXXX~~

~~XXXXXX~~ 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 ~~XXXXXX~~ Auxiliary Machinery and Lighting
rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE
BLADING.

| 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. main shaft 1200
L.P. }

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 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 }

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 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 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
as fitted 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

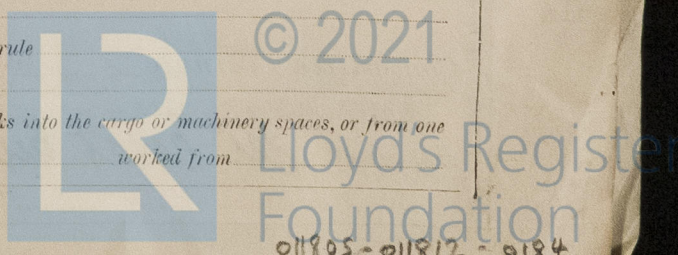
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

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



011805-011812-0184

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 _____ Main Boilers _____ Auxiliary Boilers _____ Donkey Boilers _____
(If not state date of approval)

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,

EE Tanner J.E.C.

Manufacturer

Dates of Survey while building { During progress of work in shops - - } December 16, 20, 1948
{ During erection on board vessel - - - }
Total No. of visits Two

Dates of Examination of principal parts—Casings December 16, 1948, Rotors December 16, 1948, Blading December 16, 1948, Gearing December 16, 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 fired Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength O. H. Steel 115,250 lbs.

Identification Mark LR 203 20-12-48 T

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

Identification Mark

Pinion shaft, Material and tensile strength O. H. Steel 100,500 lbs.

Identification Mark LR 203 20-12-48 T

1st Reduction Wheel Shaft, Material and tensile strength O. H. Steel 91,250 lbs.

Identification Mark LR 203 20-12-48 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 203 20-12-48 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 Davis
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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