

REPORT ON STEAM/TURBINE MACHINERY. No. 9147

Received at London Office 7 OCT 1949

Date of writing Report 5th Aug., 48 When handed in at Local Office 5th Aug., 48 Port of PHILADELPHIA, PA.
No. in Survey held at Trenton, New Jersey Date, First Survey 25th March, Last Survey 19th May, 19 48.
Reg. Book. 82059 on the Hull 47 (Generator turbines) T.S.S. "Yen Men" (Number of Visits four) Tons Gross 3072 Net 2193
Built at Lauzon, Canada By whom built George T. Davies & Sons Yard No. 47 When built -
Engines made at Trenton, N.J. By whom made De Laval Steam Turbine Engine No. 650094 When made 1948
Boilers made at - By whom made - Boiler No. 650095 When made -
Shaft Horse Power at Full Power Owners Ming Sung Industrial Co. Ltd Port belonging to "Shanghai"
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes
Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines 2 - 300 KW turbo generators

No. of Turbines one single reduction geared to one generator No. of primary pinions to each set of reduction gearing one
direct coupled to Direct Current Generator rated 300 Kilowatts 240 Volts at 1200 revolutions per minute;
Kilowatts - Volts at - revolutions per minute. Direct coupled, single or double reduction geared to - propelling shafts.

TURBINE
BLADING.

	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	1.090"	21.236	2									
2ND	.540"	23.126	1									
3RD	.840"	23.736	1									
4TH	.540"	23.126	1									
5TH	.840"	23.736	1									
6TH	1.580"	24.226	1									
7TH	2.450"	24.866	1									
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine 431 Revolutions per minute, at full power, of each Turbine Shaft 5910
Rotor Shaft diameter at journals 2-1/2" Pitch Circle Diameter 6.111 reduction wheel 30.111 Width of Face 7-11/16" Gen. Side
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 6-13/16" reduction wheel 6-15/16" Turb. "
Flexible Pinion Shafts, diameter at bearings 1st 2-1/2" External 2-1/2" diameter at bottom of pinion teeth 5.879"
2nd 4-1/2" Generator Shaft, diameter at bearings 3" Propelling Motor Shaft, diameter at bearings
Wheel Shafts, diameter at bearings 1st 4-1/2" diameter at wheel shroud, 6-1/2" Thrust Shaft, diameter at collars
Intermediate Shafts, diameter as per rule as fitted
Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted Is the { tube } shaft fitted with a continuous liner {
Bronze 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
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 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.
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 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Are two independent means arranged for circulating water through the Oil Cooler In Pump Room

Pumps, No. and size:—In Engine and Boiler Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room

Main Water Circulating Pump Direct Bilge Suctions, No. and size

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?

Is the donkey boiler intended to be used for domestic purposes only

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.

Has the spare gear required by the Rules been supplied **yes**

State the principal additional spare gear supplied

DE LAVAL STEAM TURBINE COMPANY

The foregoing is a correct description,

H. G. Bauer, Executive Engineer

Manufacturer.

Dates of Survey while building
During progress of work in shops -- March 25,- 30, April 6, May 19, 1948
During erection on board vessel ---
Total No. of visits **Four**

Dates of Examination of principal parts—Casings **19th May, '48** Rotors **19th May, '48** Blading **19th May, '48** Gearing **19th May, '48**

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 **19th May**

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength **O.H.Steel 86250 lbs.** Identification Mark **415 WHR**

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength **O.H.Steel 105500 lbs.** Identification Mark **416 WHR**

1st Reduction Wheel Shaft, Material and tensile strength **O.H.Steel 86500 lbs. & 83000 lbs.** Identification Mark **1018 1019 WHR**

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 **Hull 45**

General Remarks (State quality of workmanship, opinions as to class, &c.) **The above 2 - 300 KW generators have been constructed under Special Survey, and in accordance with the approved plans. The workmanship and materials are good. They have been tried out under full power overspeed and varying loads and found satisfactory.**

The units have been forwarded to George T. Davies for installation on board the vessel.

Forging reports and report 7b attached.

The amount of Entry Fee ... **\$150.00** : When applied for,
Special ... £ : **28 July 1948**
Donkey Boiler Fee ... £ : **per mdm**
Travelling Expenses (if any) £ **8.00** : When received,
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Engine Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 16 DEC 1949

Assigned In minute see 25. Rft



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Foundation