

AUXILIARY  
**REPORT ON STEAM/TURBINE MACHINERY.** No. 9147  
Received at London Office 7 OCT 1949

pt. 4a.

Date of writing Report 5th Aug., 1948 When handed in at Local Office 5th Aug., 1948 Port of PHILADELPHIA, PA.  
No. in Survey held at Trenton, New Jersey Date, First Survey 25th March, Last Survey 19th May, 1948.  
(Number of Visits four)  
Reg. Book. 82059 on the Hull 47 (Generator turbines) T.S.S. 'Yen Men' 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~~ one generator single reduction geared to one generator No. of primary pinions to each set of reduction gearing one  
direct coupled to ~~one~~ 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.	H.P. TURBINE			I.P. TURBINE			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.
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~~ 431 Revolutions per minute, at full power, of each Turbine Shaft ~~5910~~ 5910  
Rotor Shaft diameter at journals { ~~2-1/2"~~ 2-1/2" Pitch Circle Diameter { ~~6.111~~ 6.111 ~~30.111~~ 30.111 Width of Face { ~~7-11/16"~~ 7-11/16" Gen. Side  
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { ~~6-13/16"~~ 6-13/16" ~~6-15/16"~~ 6-15/16" Turb. "

Flexible Pinion Shafts, diameter { 1st ~~2-1/2"~~ 2-1/2" Pinion Shafts, diameter at bearings External ~~2-1/2"~~ 2-1/2" diameter at bottom of pinion teeth ~~5.879"~~ 5.879"  
2nd ~~4-1/2"~~ 4-1/2" Generator Shaft, diameter at bearings 3"  
Wheel Shafts, diameter at bearings { 1st ~~4-1/2"~~ 4-1/2" diameter at wheel shroud, ~~6-1/2"~~ 6-1/2" Propelling Motor Shaft, diameter at bearings  
Intermediate Shafts, diameter as per rule... Thrust Shaft, diameter at collars as per rule...  
Tube Shaft, diameter as fitted... Screw Shaft, diameter as fitted... Is the { tube } shaft fitted with a continuous liner {

Bronze Liners, thickness in way of bushes as per rule... Thickness between bushes 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...  
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 Pump Room...  
In Holds, &c... Independent Power Pump Direct Suctions to the Engine Room

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? 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 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

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

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.

Table with columns for Fee Type, Amount, and Date/Status. Includes Entry Fee (\$150.00), Special Fee (£), Donkey Boiler Fee (£), and Travelling Expenses (£ 8.00).

Signature of Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 18 DEC 1949

Assigned In minute see 25. Rfb

