

Rpt. 4a.

REPORT ON ~~STEAM~~ TURBINE MACHINERY. No. 8299

REC'D NEW YORK

JAN 13 1943

Date of writing Report 19... When handed in at Local Office 19... Port of Philadelphia
 No. in Survey held at Essington, Pa. Date, First Survey 21 July Last Survey 22 July 1942
 Reg. Book. S/S MARKAY. (Number of Visits 2)
 on the
 Built at Chester, Pa. By whom built Sun S.B. & D.D. Co. Yard No. 232 Tons Gross 10342
 Engines made at Essington, Pa. By whom made Westinghouse E.M. & Co. Engine No. 247805-314 When built 1942
 Boilers made at Barberton, Ohio By whom made Babcock & Wilcox Co. Boiler No. When made "
 Shaft Horse Power at Full Power Owners Keystone Tankship Corp Port belonging to Wilmington, Del
 Nom. Horse Power as per Rule 1726 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which Vessel is intended Carrying Petroleum in bulk.

STEAM TURBINE ENGINES, &c.—Description of Engines 2. 400 KW. turbo generating sets.

No. of Turbines Ahead 1 Direct coupled, single reduction geared to generator propelling shafts. No. of primary pinions to each set of reduction gearing 1
 Astern... double reduction geared
 direct coupled to Alternating Current Generator 3 phase 60 periods per second } rated 400 Kilowatts 230 Volts at 1200 revolutions per minute;
 for supplying power for driving lights Propelling Motors, Type Direct Current Generator
 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	2nd stage	0.463"	25.71"	1												
2ND		0.937"	26.19"	1												
3RD		0.929"	26.18"	1												
4TH		1.815"	27.07"	1												
5TH	3rd stage	0.929"	26.18"	1												
6TH		1.815"	27.07"	1												
7TH																
8TH																
9TH																
10TH																
11TH																
12TH																

Shaft Horse Power at each turbine { H.P. 580.5 } { I.P. } { L.P. } { H.P. 5890 } { I.P. } { L.P. }
 1st reduction wheel 1200
 main shaft

Rotor Shaft diameter at journals { H.P. 2.495" } { I.P. } { L.P. } { H.P. 2.444" } { I.P. } { L.P. }
 Pitch Circle Diameter { 1st pinion 5.244" } { 1st reduction wheel 25.715" } { 2nd pinion } { main wheel }
 Width of Face { 1st reduction wheel 7.75" } { main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 7.625" } { 1st reduction wheel 7.938" } { 2nd pinion } { main wheel }

Flexible Pinion Shafts, diameter { 1st } { 2nd } { Pinion Shafts, diameter at bearings } { External } { Internal } { 1st } { 2nd } { diameter at bottom of pinion teeth } { 1st 4.931" } { 2nd }

Wheel Shafts, diameter at bearings { 1st 6.240" } { main } { diameter at wheel shroud } { 1st 20.977" } { main } { Generator Shaft, diameter at bearings } { Propelling Motor Shaft, diameter at bearings }

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

Tube Shaft, diameter { as per rule } { as fitted } { Screw Shaft, diameter } { as per rule } { as fitted } { Is the { tube } { screw } 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 L.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.

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 sized 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

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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?
{ an Auxiliary }

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
(If not state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description,

Westinghouse Electric & Mfg Co
J. H. Brown

Manufacturer.

Dates { During progress of }
of Survey { work in shops -- }
while { During erection on }
building { board vessel --- }
Total No. of visits

July 21st 22nd 1942

24 Aug 1942

Dates of Examination of principal parts—Casings 22 July Rotors 22 July Blading 22 July Gearing 22 July

Wheel shaft 22 July 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 O H Steel 102000 lb Identification Mark 234 C.D. W.H.R.

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength O H Steel 98000 lb 105500 lb Identification Mark 4014 W.H.R. 1983

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. 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 If so, state name of vessel S/S SEAKAY.

General Remarks (State quality of workmanship, opinions as to class, &c.) These 2 - 400 KW generating sets have built under Special Survey, and in accordance with the approved plans, the workmanship & materials are good. They have been subjected to the over speed & over load tests with satisfactory results. The sets have been satisfactorily installed on board the vessel, tried under full load & all found in good order.

The amount of Entry Fee ... £ : : When applied for, 23rd Oct 1942
Special ... £ : :
Donkey Boiler Fee ... £ 100 : :
Travelling Expenses (if any) ... £ : : When received, 19

Committee's Minute

Assigned See Attached First Entry Report

NEW YORK JAN 13 1943

W. H. R. Ham & Co
Engineer Surveyor to Lloyd's Register of Shipping.



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