

AUX REPORT ON STEAM TURBINE MACHINERY. No. 8128

Date of writing Report Sept 20 41 When handed in at Local Office 20 Sept 41 Port of Philadelphia Received at London Office 4 APR 1942

No. in Survey held at Hendon N.J. Date, First Survey 9 July Last Survey 6 Aug 1941
 Reg. Book. Three 192 (Number of Visits 2)

Built at Rearny N.J. By whom built Federal SB Co Yard No. 192 Tons ^{Gross} _{Net}
 Engines made at Hendon N.J. By whom made De Laval Steam Turbine Engine No. 231373 When built When made 1941
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power Owners Inclis Refining Co Port belonging to
 Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines

No. of Turbines 1 ^{Ahead} 1 ^{Direct coupled} 1 ^{single reduction geared} 1 ^{double reduction geared} 1 ^{propelling shafts} 1 ^{generator} 1 No. of primary pinions to each set of reduction gearing 1

Direct coupled to { Alternating Current Generator phase periods per second } rated 250 Kilowatts 240 Volts at 1200 revolutions per minute;
 or supplying power for driving { Propelling Motors, Type }
 rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE LOADING.	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	<u>5.15</u>	<u>20.720</u>	<u>1</u>									
2ND	<u>7.80</u>	<u>20.720</u>	<u>1</u>									
3RD	<u>6.20</u>	<u>23.820</u>	<u>1</u>									
4TH	<u>1.140</u>	<u>24.110</u>	<u>1</u>									
5TH	<u>9.20</u>	<u>20.780</u>	<u>1</u>									
6TH	<u>1.310</u>	<u>21.090</u>	<u>1</u>									
7TH	<u>1.720</u>	<u>21.620</u>	<u>1</u>									
8TH	<u>2.160</u>	<u>22.306</u>	<u>1</u>									
9TH												
0TH												
1TH												
2TH												

Shaft Horse Power at turbine { H.P. 367 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 5600 } ^{1st reduction wheel} 1200
 { I.P. } { L.P. } { main shaft }

Rotor Shaft diameter at journals { H.P. 3" } Pitch Circle { 1st pinion 4.590" } ^{1st reduction wheel} 23.000 Width of { 1st reduction wheel 6 1/2" }
 { I.P. } Diameter { 2nd pinion } { main wheel } { main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 6 1/8" } ^{1st reduction wheel} 7"
 { 2nd pinion } { main wheel }

Flexible Pinion { 1st } Pinion Shafts, diameter at bearings { External 1st 2 1/2" } 2nd diameter at bottom of pinion teeth { 1st 4.658" }
 { 2nd } { Internal 1st 6 1/2" } 2nd }

Wheel Shafts, diameter at bearings { 1st 4 1/2" } diameter at wheel shroud, { 1st 6 1/2" } Generator Shaft, diameter at bearings 3"
 { main } { main } 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 } { screw } { 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 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 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:—

1 thermometer, 2 springs, 2 springs for governor, 2 sets coupling bolts, 1 set oil pump gear, 1 set carbon rings, thrust rings, shoes, 1 set of machine, pinion & gear bearings, 4 studs for turbine casing joint & gear case joints, 1 set special wrenches.

The foregoing is a correct description,

H. C. Lavel Steam Turbine Co
Sunderland, Manufacturer

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

9 July 6 Aug 1941

Dates of Examination of principal parts—Casings

6 Aug

Rotors

6 Aug

Blading

6 Aug

Gearing

6 Aug

Wheel shaft

6 Aug

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

OH Steel

95000 lb

Identification Mark 5937 JKH

Flexible Pinion Shaft, Material and tensile strength

Identification Mark

Pinion shaft, Material and tensile strength

OH Steel

107500 lb

Identification Mark 5935 JKH

1st Reduction Wheel Shaft, Material and tensile strength

Identification Mark

Wheel shaft, Material

OH Steel

Identification Mark 5936 JKH

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.)

This generating set has been constructed under Special Survey & in accordance with the approved plans, the workmanship & materials are good. It has been tested in the shop under full load, over load & over speed & all found satisfactory. The unit has been shipped to the Federal Ship Co. Ready for installation on board the vessel.

The amount of Entry Fee

\$75 00

Special

Donkey Boiler Fee

\$7 10

Travelling Expenses (if any)

When applied for,

22nd Sept. 1941

When received,

19

W. W. Cumham

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK FEB 25 1942

Assigned

See N.Y.K. RPT. NO. 42143.



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