

REPORT ON STEAM TURBINE MACHINERY. No. 8120

Date of writing Report 2 Sept 41 When handed in at Local Office 6 Sept 41 Port of Philadelphia
 No. in Survey held at 1941 Date, First Survey Jan 22 Last Survey Aug 9 1941
 Reg. Book. SIS STANVAC WELLINGTON. (Number of Visits 26)
 on the Tons Gross 10013 Net 6397
 Built at Chester Pa By whom built Sun 83 & DD Co Yard No. 210 When built 1941
 Engines made at Essington Pa By whom made Westinghouse EOM Co Engine No. 1A9351 When made "
 Boilers made at Barberton Ohio By whom made Babcock & Wilcox Co Boiler No. 1494 122 When made "
 Shaft Horse Power at Full Power 4000 Owners Petroleum Shipping Co Port belonging to Panama
 Nom. Horse Power as per Rule 1006 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 Cross Compound. Impulse Reaction

No. of Turbines Ahead 2 Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
 Astern 1
 Direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at 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	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.
LOADING												
IMPULSE WHEEL	6.4	21.14	1									
1ST EXPANSION	1.12	21.62	1									
2ND												
3RD												
4TH 15 BLADE RING UNIFORM TAPER	7.56	14.03	6				9.16	27.87	6	8.9	29.64	1
5TH	9.7	14.47	6				2.97	32.00	6	1.69	30.44	1
6TH												
7TH 2 BLADE RING UNIFORM TAPER	1.03	14.19	12				3.85	33.75	5	1.92	31.42	1
8TH	2.03	16.62	12				8.97	34.00	5	3.09	32.89	1
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine H.P. 2000 I.P. 5980 L.P. 2000
 Revolutions per minute, at full power, of each Turbine Shaft I.P. 1080 L.P. 4440
 1st reduction wheel 540 main shaft 85
 Rotor Shaft diameter at journals H.P. 4 I.P. 10.884 L.P. 6 1/4
 Pitch Circle Diameter 1st pinion 17.694 2nd pinion 17.694
 1st reduction wheel 89.710 main wheel 112.287
 Width of Face 1st reduction wheel 13 main wheel 30
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 13 3/8 2nd pinion 33 3/4
 1st reduction wheel 13 3/8 main wheel 33 3/4
 Flexible Pinion Shafts, diameter 1st 3 3/4 2nd 12 1/2
 Pinion Shafts, diameter at bearings External 1st 4 1/2 2nd 5 0
 Internal 1st 8 1/4 2nd 10 8
 diameter at bottom of pinion teeth 1st 10 4 1/2 2nd 17 131
 Wheel Shafts, diameter at bearings 1st 12 1/2 2nd 19
 diameter at wheel shroud, 1st 8 1/4 2nd 10 8
 Intermediate Shafts, diameter as per rule 14 3/4 15
 Thrust Shaft, diameter at collars as per rule 14 3/4 15
 Tube Shaft, diameter as per rule 14 3/4 15
 Screw Shaft, diameter as per rule 16 29 17
 Is the shaft fitted with a continuous liner Yes
 Thickness between bushes as per rule 5 3/4
 Is the after end of the liner made watertight in the propeller boss Yes
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes
 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 Yes
 If two liners are fitted, is the shaft lapped or protected between the liners Yes
 Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No
 Length of Bearing in Stern Bush next to and supporting propeller 7 1/4
 Propeller, diameter 18 6 Pitch 16 6 No. of Blades 4 State whether Movable No
 Total Developed Surface 125.3 square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes
 Can the H.P. or I.P. Turbine exhaust direct to the Condenser Yes
 No. of Turbines fitted with astern wheels 1
 Feed Pumps No. and size 3 180 GPM
 How driven Steam Turbines
 Pumps connected to the Main Bilge Line No. and size 1 400 GPM 1 400 GPM 1 175 GPM 1 7 1/2 x 7 x 10
 How driven Motor Steam Turbine Motor Steam driven in fuel pump room
 Ballast Pumps, No. and size 2 400 GPM 1 10 x 7 x 10
 Fwd Pump Room Lubricating Oil Pumps, including Spare Pump, No. and size 2 200 GPM Motor driven
 Are two independent means arranged for circulating water through the Oil Cooler Yes
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 3 3 1/2 ENG ROOM BILGE 2 2 MOTOR WELL 1 2 CONDENSATE PUMP DEPRESSION 3 3 1/2 COFFERSUMS
 In Holds, &c. 2 2 1/2 Fwd Pump Room 2 2 1/2 Dry stores fwd 1 2 1/2 Chain locker 2 2 1/2 Brown's stores
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 14
 Independent Power Pump Direct Suctions to the Engine Room. Bilges, No. and size 1 5
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes
 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 Yes
 Are all Sea Connections fitted direct on the skin of the ship Yes
 Are they fitted with Valves or Cocks Valves
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes
 Are the Overboard Discharges above or below the deep water line Both
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes
 Are the Blow Off Cocks fitted with a spigot and brass covering plate Valve
 What pipes pass through the bunkers BILGE PIPES & CHAIN LOCKER BOWS. STORES 1 DRY STORES How are they protected Yes
 What pipes pass through the deep tanks PASS THRU 36" TUNNEL in FWD DEEP TANK. NONE AFT. Have they been tested as per rule Yes
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 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 Yes
 Is the Shaft Tunnel watertight None Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 9008
 Is Forced Draft fitted Yes No. and Description of Boilers 2 B.M. Marine type Working Pressure 475 lb.
 Is a Report on Main Boilers now forwarded? Yes
 Is { a Donkey } Boiler fitted? No If so, is a report now forwarded? ✓
 { an Auxiliary }
 Plans. Are approved plans forwarded herewith for Shafting 18 Nov 1940 Main Boilers Oct 1940 Auxiliary Boilers ✓ Donkey Boilers ✓
 (If not state date of approval)
 Superheaters Oct 1940 General Pumping Arrangements April 1941 Oil Fuel Burning Arrangements 1 May 1941
 Spare Gear. State the articles supplied:— Under Separate covs.

The foregoing is a correct description, Westinghouse E. & M. Co. J. H. Brown Manufacturer

Dates of Survey while building { During progress of work in shops - - } Jan 22-28, Feb 25, March 13-26, April 15-24, May 9-16, June 5-16-19, 1941
 { During erection on board vessel - - - } May 20-22-26, June 15-10-17-20, July 3-10-31, Aug 4-5-6-9, 1941
 Total No. of visits 26

Dates of Examination of principal parts—Casings June 19 Rotors June 19 Blading June 19 Gearing June 19
 Wheel shaft June 19 Thrust shaft May 16 Intermediate shafts May 16 Tube shaft ✓ Screw shaft May 16
 Propeller May 16 Stern tube May 26 Engine and boiler seatings June 20 Engine holding down bolts July 31
 Completion of pumping arrangements Aug 5 Boilers fixed July 31 Engines tried under steam Aug 9
 Main boiler safety valves adjusted Aug 5 Thickness of adjusting washers Locknuts

Rotor shaft, Material and tensile strength OH Steel LP 106000 10000 HP 92000 83250 Identification Mark 70-7KH-3717WJF

Flexible Pinion Shaft, Material and tensile strength OH Steel Identification Mark ✓

Pinion shaft, Material and tensile strength OH Steel HP 106000 LP 101500 Identification Mark 1451-1456 EW

1st Reduction Wheel Shaft, Material and tensile strength OH Steel LP 103000 10000 HP 109000 103000 Identification Mark 4283-4416 WAF

Wheel shaft, Material OH Steel Identification Mark 6196 Thrust shaft, Material OH Steel Identification Mark NR

Intermediate shafts, Material OH Steel Identification Marks 9670-9671-HBC Tube shaft, Material ✓ Identification Marks ✓

Screw shaft, Material OH Steel Identification Marks Reg 2536 Steam Pipes, Material Seamless steel Test pressure 1600 lb.

Date of test April 14, May 26, June 17, 1941 Is an installation fitted for burning oil fuel Yes

Is the flash point of the oil to be used over 150°F. Yes Have the requirements of the Rules for the use of oil as fuel been complied with Yes

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 Yes If so, state name of vessel STANVAC. MELBOURNE

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been constructed under

Special Survey and in accordance with the approved plans. The workmanship & materials are good. The installation has been satisfactorily installed on board the vessel. Tied out under full power with satisfactory results. In my opinion the installation is eligible to receive the record of +LMC 8-41.

Certificate (if required) to be sent to

Amount of Entry Fee	£ 30 00	When applied for, 18 th Sept. 1941 and When received, 19
Special	208 60	
Sum for G	208 60	
Donkey Boiler Fee	25 00	
Westinghouse	15 00	
Travelling Expenses (if any)	£ 15 00	

M. W. Cumham
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK OCT 1 1941

Assigned +LMC-8-41.

NOTE - CL
 2 WTB (Ht)
 475 lbs.



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