

REPORT ON MACHINERY.

No. 3270

Date of writing Report May 28 1919 When handed in at Local Office May 29 1919 Port of Pittsburgh Pa. & Philadelphia
 No. in Survey held at Pittsburgh Pa. & Chester Date, First Survey Sept 5 1918 Last Survey May 21 1919
 Reg. Book. Steel S.S. "Silverbrook" (Chester S.B. Coy. SS. # 344) (Number of Vials 64) Gross 5674
 on the Steel S.S. "Silverbrook" Tons Net 3530

Master W. A. Hutchins Built at Chester Pa By whom built Chester S.B. Coy. 3MA When built 1917
 Engines made at East Pittsburgh By whom made Westinghouse Machine Coy. 3MA when made 1917
 Boilers made at Camden By whom made New York Ship Bldg Co when made 1917
 Registered Horse Power 484 Owners United States Shipping Board Port belonging to Washington
 Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines (Double Reduction) Geared Turbines. No. of Turbines Two ONE H.P. ONE L.P.
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft 1st Red. flx. 2 3/8" hollow 4 7/4 x 3 1/8" 2nd do. flx. 5 3/4"
 Diameter of Journals 1st R. 4 7/4" 2nd R. 8 9/16" Distance between Centres of Bearings 2nd " 34 3/8" Diameter of Pitch Circle 1st Red. 5.114" 2nd Red. 10.228"
 Diameter of Wheel Shaft 1st R. 8 9/16" 2nd 14 23/32" Distance between Centres of Bearings 1st Red. 37" 2nd do. 71" Diameter of Pitch Circle of Wheel 3'-5.075" 5'-5.983"
 Width of Face 1st Red. 20" 2nd 41" Diameter of Thrust Shaft under Collar 20" Kingsbury Thrust Gear Shaft Diameter of Tunnel Shaft as per rule 14" 13.904"
 No. of Screw Shafts 1 Diameter of same as per rule 14 9/16" 15.23 CL Diameter of Propeller 18' Pitch of Propeller 17'-6"
 No. of Blades 4 State whether Moveable No Total Surface 110 sq ft Diameter of Rotor Drum, H.P. 17" L.P. 24" Impulse H.P. 29 3/8" L.P. 27 1/2" mean
 Thickness at Bottom of Groove, H.P. 1 3/32" L.P. 1 1/2" Astern ✓ Revs. per Minute at Full Power, Turbine 3870 Propeller 75

PARTICULARS OF BLADING.

	H. P.	L. P. AN Reaction	ASTERN. All Impulse
	HEIGHT OF BLADES.	HEIGHT OF BLADES.	HEIGHT OF BLADES.
	DIAMETER AT TIP.	DIAMETER AT TIP.	DIAMETER AT TIP.
	NO. OF ROWS.	NO. OF ROWS.	NO. OF ROWS.
1ST EXPANSION	Impulse <u>1 3/4"</u>	<u>3"</u>	H.P. <u>1 3/4"</u>
2ND	Reaction <u>2"</u>	<u>4"</u>	L.P. <u>2 1/8"</u>
3RD	" <u>3"</u>	<u>5"</u>	<u>33 3/8"</u>
4TH	"	<u>6"</u>	<u>36"</u>
5TH	"		
6TH	"		
7TH	"		
8TH	"		

No. and size of Feed pumps 2 - 12" x 8" x 24"
 No. and size of Bilge pumps 1 - 6" x 5 3/4" x 6" 1 - 7 1/2" x 8 1/2" x 6"
 No. and size of Bilge suction in Engine Room & Boiler room 4 - 3 1/2" 1 - 3 1/2" in oil fuel guttering
6 - 4" in forward end 2 - 4" in pump room
 In Holds, &c. 6 - 4" in after end

No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine Room & size 4 3/8 - 3 1/2"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above
 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 Yes
 What pipes are carried through the bunkers How are they protected
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door worked from

Is tail shaft fitted with continuous liner Yes Manufacturers of Steel North Bros

BOILERS, &c.—(Letter for record R) Total Heating Surface of Boilers 8862 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 SE Scotch
 Working Pressure 180 lbs Tested by hydraulic pressure to 270 lbs Date of test 28-9-17 No. of Certificate 1418
 Can each boiler be worked separately Yes Area of fire grate in each boiler 58.75 sq ft No. and Description of Safety Valves 2
 each boiler 2 Spring loaded Area of each valve 9.62 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean dia. of boilers 15-3 1/16" Length 11'-9" Material of shell plates Steel
 Thickness 1 1/16" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR L
 long. seams TRBS Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 8 1/16" Lap of plates or width of butt straps 20 1/4"

Per centages of strength of longitudinal joint 94% Working pressure of shell by rules 191 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 37" x 32" x 1 1/16" No. and Description of Furnaces in each Boiler 3 Monism Material Steel Outside diameter 3' 8 1/16"

Length of plain part top 14" bottom 32" Thickness of plates 1 1/32" Description of longitudinal joint Weld No. of strengthening rings ✓

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 2 3/32" Top 3/32" Bottom 1"

Pitch of stays to ditto: Sides 1 1/2" x 8 3/8" Back 1 1/4" x 8 3/8" Top 1 1/2" x 8 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 268

Material of stays W. I Area at smallest part 1.997 sq in Area supported by each stay 6.6 sq in Working pressure by rules 228 lbs End plates in steam space Steel

Material Steel Thickness 1 1/16" Pitch of stays 18 x 16" How are stays secured D. Nuts Working pressure by rules 217 lbs Material of stays Steel

Area at smallest part 6.491 sq in Area supported by each stay 288 lbs Working pressure by rules 234 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 1 1/32" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 297

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates Steel Thickness: Front 1" Back 1 1/16" Mean pitch of stays 9 1/8"

Pitch across wide water spaces 13 1/16" Working pressures by rules 198 lbs Girders to Chamber tops: Material Steel Depth and 8 1/4"
 thickness of girder at centre 9 1/2" x 2" Length as per rule 36" Distance apart 4'-7 1/2"
 Working pressure by rules 238 lbs Steam dome: description of joint to shell 0% of strength of joint Diameter
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets 2021

Working pressure of shell by rules Crown plates: Thickness How stayed ✓

SUPERHEATER

Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:-

2 Gear bearings complete, 2 turbine bearings complete, 6 pinion bearings complete, 12 turbine thrust shoes, 6 propeller thrust shoes, 20 spindle gland packing rings & 240 springs, 12 coupling bolts, 1/20 number of bolts & nuts for gear case joints, and turbine casing joints, 6 diaphragm packing Ring springs, 1 retaining ring spring, 1 set feed pump valves, 1 set bilge pump valves, 1 set valves for lubricating oil pump, 1 escape valve spring of each size fitted, 1 propeller, 1 tail shaft, a quantity of assorted bolts, studs & nuts, Bars & plates of iron, 12 boiler tubes, 2 thermometers

The foregoing is a correct description,

Successors to

The Westinghouse Machine Co.

East Pittsburgh, Pa.

J. A. Davies,

Engineer, Marine Department.

Manufacturer.

East Pittsburgh: Dec. 4-11-23-27-28. Jan. 5-6-8-13-17-25-30. Feb. 1-2-5-7-19. Mar. 2-15-21-26. Apr. 3. May 8-14-22.
Jun. 1-7-12-18-28. Jul. 3-10-17. Aug. 1-14-28. - TOTAL: 36 Visits.

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

1918
Sept 5-18 Oct 2-9-10-18-21-29 Nov 20-26-29 Dec 4-11-20 Jan 7-15-21-22 Feb 6-13 Mar 3-7-28 Apr 1-8-25 May 5-16-18-21
67
Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts-Casings

Rotors

Blading

Gearing

Rotor shaft

Thrust shaft

Tunnel shafts

Screw shaft

Propeller

Stern tube

Steam pipes tested

Engine and boiler seatings

Engines holding down bolts

Completion of pumping arrangements

Boilers fixed

Engines tried under steam

Main boiler safety valves adjusted

Thickness of adjusting washers

Locknuts

Material and tensile strength of Rotor shafts

Ingot Steel 68000 lbs.

73120 lbs.

Identification Mark on Do. 1936 J.D.

L.P. 1936 J.D.

Material and tensile strength of Pinion shafts

Ingot Steel 1st Rotor 94500 - 85520 97400 2nd Rotor 94500 - 85520 97400

Identification Mark on Do. 1st Rotor 94500 - 85520 97400

2nd Rotor 94500 - 85520 97400

Material of Wheel shaft

Ingot Steel

Identification Mark on Do. 1st Rotor 94500 - 85520 97400

Material of Thrust shaft

Ingot Steel

Identification Mark on Do. 1st Rotor 94500 - 85520 97400

Material of Tunnel shafts

Steel

Identification Marks on Do. 2005 W.S.

Material of Screw shafts

Steel

Identification Marks on Do. 2810 W.S.

Material of Steam Pipes

Copper

Test pressure

400 lbs.

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 Section 49 of the Rules been complied with

Is this machinery a duplicate of a previous case

Yes

If so, state name of vessel

S.S. "Malmanger"

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under special Survey; the materials and workmanship are of good quality; the hydraulic tests on the cylinders and the shop steaming trials proved satisfactory. It has been shipped to Chester to be fitted in the vessel. Philadelphia Surveyors notified.

The machinery of this vessel has been securely fitted on board, and tried under steam with satisfactory results.

It is submitted that the vessel be eligible for record of + LMC 5-19, fitted for fuel oil 5-19. flash point above 150°F.

The amount of Entry Fee ... \$ 15 00
Special ... \$ 148 00
Donkey Boiler Fee ... £ 12 75
Travelling Expenses (if any) ... £ 4 00

When applied for, 29 May 1919
When received, 8/7/19

William D. Bates, J. M. P. R. H. A. T. Thoma
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York JUN - 3 1919

Assigned

+ dmc 5.19



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