

Rpt. 4a.

REPORT ON MACHINERY.

No. 6230

Received at London Office

Date of writing Report JAN. 6th 1931 When handed in at Local Office JAN. 6th 1931 Port of PHILADELPHIA
No. in Survey held at TRENTON, N.J. Date, First Survey MAY 15th Last Survey DEC. 31st 1930
Reg. Book. U.S. "HARRY F. SINCLAIR JR." (Number of Visits 28) Tons { Gross _____
Net _____
Master _____ Built at _____ By whom built BETHLEHEM S.B. CORP. When built _____
Engines made at TRENTON, N.J. By whom made DE LAVAL STEAM TURBINE CO. when made 1930
Boilers made at _____ By whom made _____ when made _____
Registered Horse Power _____ Owners _____ Port belonging to _____
Shaft Horse Power at Full Power 4000 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

TURBINE ENGINES, &c.—Description of Engines GEARED TURBINES No. of Turbines TWO
Diameter of Rotor Shaft Journals, H.P. 4" L.P. 7" Diameter of Pinion Shaft 1st RED. 4" 2nd RED. 12"
Diameter of Journals 6" 12" Distance between Centres of Bearings 30 3/4" 73 1/2" Diameter of Pitch Circle H.P. 8.166" L.P. 10.5" 2nd RED. 13.647"
Diameter of Wheel Shafts 12" 22" Distance between Centres of Bearings 31" 83 3/4" Diameter of Pitch Circle of Wheel 63.666" 127.950"
Width of Faces 18" 44" Diameter of Thrust Shaft under Collars 11 3/4" Diameter of Tunnel Shaft _____ as per rule _____
as fitted _____
No. of Screw Shafts _____ Diameter of same _____ as per rule _____
as fitted _____ Diameter of Propeller _____ Pitch of Propeller _____
No. of Blades _____ State whether Moveable _____ Total Surface _____ Diameter of Rotor Drum, H.P. _____ L.P. _____ astern _____
H.P. 3483 L.P. 4265 Propeller 75
Thickness at Bottom of Groove, H.P. _____ L.P. _____ Astern _____ Revs. per Minute at Full Power, Turbines _____ Propeller _____

PARTICULARS OF BLADING.

H.P.

L.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.
1ST EXPANSION	470	20.326	2	1.030	32.660	1	1.390	34.550	2
2ND	710	16.816	1	1.570	33.410	1	3.840	35.730	1
3RD	790	16.816	1	1.935	33.980	1	CONTINUATION H.P. TURBINE.		
4TH	875	16.816	1	2.970	35.800	1			
5TH	975	16.816	1	3.695	37.330	1			
6TH	1.085	16.816	1	5.010	39.640	1			
7TH	810	20.736	1	7.470	43.260	1			
8TH	935	20.736	1				1.235	20.736	1

No. and size of Feed pumps

No. and size of Bilge pumps

No. and size of Bilge suction in Engine Room

In Holds, &c.

No. of Bilge Injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine Room & size _____
Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____
Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the Discharge Pipes 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 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 _____
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges _____
Is the Screw Shaft Tunnel watertight _____ Is it fitted with a watertight door _____ worked from _____

BOILERS, &c.—(Letter for record _____) Manufacturers of Steel _____

Total Heating Surface of Boilers _____ Is Forced Draft fitted _____ No. and Description of Boilers _____
Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____
Can each boiler be worked separately _____ Area of fire grate in each boiler _____ No. and Description of Safety Valves to _____
each boiler _____ Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____
Smallest distance between boilers or uptakes and bunkers or woodwork _____ Mean dia. of boilers _____ Length _____ Material of shell plates _____
Thickness _____ Range of tensile strength _____ Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____
long. seams _____ Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____
Per centages of strength of longitudinal joint _____ rivets _____ Working pressure of shell by rules _____ Size of manhole in shell _____
plates _____
Size of compensating ring _____ No. and Description of Furnaces in each Boiler _____ Material _____ Outside diameter _____
Length of plain part _____ top _____ Thickness of plates _____ crown _____ Description of longitudinal joint _____ No. of strengthening rings _____
bottom _____ bottom _____
Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____ End plates in steam space _____
Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of stays _____
Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of Front plates at bottom _____
Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____
Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____
Diameter of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____
Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and _____
thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____
Working pressure by rules _____ Steam dome: description of joint to shell _____ % of strength of joint _____ Diameter _____
Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diameter of rivet holes _____ Pitch of rivets _____
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? _____ If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied:— ONE H.P. AND ONE L.P. TURBINE BEARINGS, SET OF SHOES FOR TURBINE THRUST BEARINGS, ONE HIGH SPEED AND ONE LOW SPEED GEARS' BEARINGS, ONE LOW SPEED PINION BEARINGS (MIDDLE) AND ONE OUTER, ONE HIGH SPEED PINION - H.P. ONE HIGH SPEED PINION - L.P. HIGH PRESSURE CARBON PACKING WITH SPRINGS FOR ONE GLAND, ONE SET OF SHOES FOR MAIN THRUST, BEARING CAP BOLTS & NUTS FOR EACH BEARING FOR GEARS & TURBINES, CASING JOINTS, GOVERNOR & RELIEF VALVE SPRINGS, 2 LABYRINTH PACKINGS FOR H. P. TURBINE, BOLTS & BUSHINGS FOR FLEXIBLE COUPLING, ONE HIGH SPEED ^{PINION} BEARING, ONE LOW PRESSURE CARBON PACKING WITH SPRINGS FOR ONE GLAND.

The foregoing is a correct description,

DE LAVAL STEAM TURBINE CO

Manufacturer.

1930.

Dates of Survey while building { During progress of work in shops -- MAY 15, JUNE 11, 18, 26, JUL 2, 9, 23, 31, AUG. 20, 22, SEP. 3, 10, 23, OCT. 7, 10, 16, 24, 28
During erection on board vessel --- NOV. 5, 10, 20, 24, DEC. 5, 15, 22, 23, 31.
Total No. of visits _____

Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings 20.11.30 28.11.30 Rotors 20.11.30 5.12.30 Blading 5.11.30 20.11.30 Gearing 5.11.30 22.12.30

Rotor shafts 24.10.30 Thrust shaft 16.10.30 Tunnel shafts _____ Screw shaft _____ Propeller _____

Stern tube _____ Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____

Completion of pumping arrangements _____ Boilers fired _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____

Material and tensile strength of Rotor shafts H.P. O.H. STEEL, 84000 lbs. L.P. 120,000 lbs. Identification Mark on Do. L.P. 940, 942, 946, 949, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Material and tensile strength of Pinion shafts O.H. STEEL, 2nd RED, 88500 lbs. 1st RED, 89000 lbs. Identification Marks on Do. 1073 J.M.B. 1062 J.M.B. 1068 H.A.S.

Material of Wheel shaft O.H. STEEL Identification Mark on Do. 20.11.30 J.M.B. Material of Thrust shaft O.H. STEEL Identification Mark on Do. 20.11.30 J.M.B.

Material of Tunnel shafts Identification Marks on Do. _____ Material of Screw shafts Identification Marks on Do. _____

Material of Steam Pipes _____ Test pressure _____

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 "VIRGINIA SINCLAIR"

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

THE MACHINERY HAS BEEN BUILT UNDER SPECIAL SURVEY, THE MATERIALS AND WORKMANSHIP ARE OF GOOD DESCRIPTION, HYDRAULIC TESTS SATISFACTORY. ON COMPLETION THE TURBINES AND GEARS WERE RUN IN THE SHOP TO THEIR DESIGNED SPEED AND WERE FOUND SATISFACTORY. IT IS RECOMMENDED THAT THE RECORD OF LMC WITH DATE BE MADE IN THE REGISTER BOOK WHEN THE MACHINERY IS SATISFACTORILY INSTALLED.

The amount of Entry Fee \$ 30.00

Special \$ 300.00

2 GENERATING SETS. \$ 30.00

Donkey Boiler Fee \$

Travelling Expenses (if any) \$ 40.00

When applied for,

14 Jan 1931

When received,

21 Feb 1931

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAR 25 1931

Assigned See Bos. Rpt. 2650



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