

Rpt. 4a.

REC'D NEW YORK MAR 16 1931  
REPORT ON MACHINERY.

No. 2650

Received at London Office.....

Date of writing Report MAR 6 1931 When handed in at Local Office 19 Port of BOSTON  
No. in Survey held at QUINCY T TRENTON 19 Date, First Survey SEPT 26 Last Survey FEB 26 1931  
Reg. Book. on the T/S "HARRY F. SINCLAIR JR." (Number of Visits 44) Tons { Gross 6151  
Net 3796  
Master J. M. Built at QUINCY By whom built BETHLEHEM SHIPBUILDING CORP When built 1931  
Engines made at TRENTON N.J. By whom made DE LAVAL STEAM TURBINE CO. when made 1931  
Boilers made at BAYONNE N.J. By whom made BABCOCK & WILCOX CO. when made 1931  
Registered Horse Power 4000 Owners SINCLAIR NAVIGATION CO Port belonging to NEW YORK  
Shaft Horse Power at Full Power 4000 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

Diameter of Rotor Shaft Journals, H.P. 4" L.P. 7" Diameter of Pinion Shafts 1<sup>ST</sup> RED 4" - 2<sup>ND</sup> RED 12"  
Diameter of Journals 6 1/2" Distance between Centres of Bearings 30 3/4" x 73 1/2" Diameter of Pitch Circle HP-8.166" LP-10.5" 2<sup>ND</sup> RED 13.647"  
Diameter of Wheel Shaft 12 1/2" Distance between Centres of Bearings 31" 83 3/4" Diameter of Pitch Circle of Wheel 63.666" x 127.980"  
Width of Faces 18" x 44" Diameter of Thrust Shaft under Collars 11 3/4" Diameter of Tunnel Shaft as per rule 15.27"  
No. of Screw Shafts ONE Diameter of same as fitted 16.87" Diameter of Propeller 19'-6" Pitch of Propeller 19'-3"  
No. of Blades FOUR State whether Moveable YES Total Surface 121 4' Diameter of Rotor Drum, H.P. — L.P. — Astern —  
Thickness at Bottom of Groove, H.P. 3.5" L.P. 3.5" Astern — Revs. per Minute at Full Power, Turbine HP 5483 LP 4265 Propeller 75

## 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	720"	34.550"	2
2ND	710"	16.816"	1	1.570"	33.410"	1	1.390"	35.730"	1
3RD	790"	16.816"	1	1.935"	33.980"	1	3.840"	39.430"	1
4TH	875"	16.816"	1	2.970"	35.800"	1	CONTINUATION OF H.P. TURBINE		
5TH	975"	16.816"	1	3.695"	37.330"	1	9 7/8"	20.736"	1
6TH	1.085"	16.816"	1	5.010"	39.640"	1	10 7/8"	20.736"	1
7TH	810"	20.736"	1	7.470"	43.260"	1	11 7/8"	20.736"	1
8TH	935"	20.736"	1						

No. and size of Feed pumps TWO TURBINE ROTARY PUMPS 2 1/2" DIAM. ONE VERT. SIMPLEX RECIP. PUMP 9" x 6" x 24"  
No. and size of Bilge pumps TWO IN ENGRM. 7 1/2" x 6" x 10" DUPLEX. T 12" x 8 1/2" x 12" DUPLEX. ONE 6" x 6" SIMPLEX IN EACH PUMP ROOM AND IN FORD HOLD.  
No. and size of Bilge suction in Engine Room THREE 4" DIAM.  
In Holds, &c. TWO 4" IN FORD HOLD. THREE 4" IN EACH PUMP RM.

No. of Bilge Injections ONE sizes 14" Connected to condenser or to circulating pump YES Is a separate Donkey Suction fitted in Engine Room & size YES 4" DIAM.  
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 VALVES  
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 YES  
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 FITTED  
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 ✓

## BOILERS, &amp;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 \_\_\_\_\_ crown \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ No. of strengthening rings \_\_\_\_\_  
bottom \_\_\_\_\_ Thickness of plates \_\_\_\_\_ 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 \_\_\_\_\_  
Material of stays \_\_\_\_\_ Diameter at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates in steam space \_\_\_\_\_  
Material \_\_\_\_\_ Thickness \_\_\_\_\_ Pitch of stays \_\_\_\_\_ How are stays secured \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Material of stays \_\_\_\_\_  
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? NO If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— ONE HP. AND ONE LP. 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 -HP. ONE HIGH SPEED PINION-LP. HIGH PRESSURE CARBON PACKING WITH SPRINGS. FOR ONE GLAND. ONE SET OF SHOES FOR MAIN THRUST. BEARING CAP BOLTS AND NUTS. FOR EACH BEARING FOR GEARS AND TURBINES, CASING JOINTS. GOVERNOR & RELIEF VALVE SPRINGS. 2 LABYRINTH PACKINGS. FOR HP TURBINE. BOLTS & BUSHING FOR FLEXIBLE COUPLING. ONE HIGH SPEED PINION BEARING. ONE LOW PRESSURE CARBON PACKING WITH SPRINGS FOR ONE GLAND. ONE TAILSHAFT. ONE SET OF COUPLING BOLTS TWO PROPELLER BLADES.

The foregoing is a correct description,

Manufacturer.

DEC. 5, 15, 22, 23, 31.  
1930  
Dates of Survey while building { During progress of work in shops - - MAY 15, JUNE 11, 18, 26, JULY 29, 23, 31. AUG. 20, 22. SEP. 3, 15, 23. OCT. 7, 10, 16, 24, 28 NOV. 5, 10, 20, 24, 28  
During erection on board vessel - - - SEPT. 26 OCT 7-24 NOV 7-19 DEC 1-6-15-27 JAN. 7-17-26-27 FEB. 13-20-26  
Total No. of visits 44 Is the approved plan of main boiler forwarded herewith YES.

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 shaft 24-10-30 Thrust shaft 16-10-30 Tunnel shafts 26-9-30 Screw shaft 26-9-30 Propeller 26-9-30

Stern tube 7-11-30 Steam pipes tested 19-11-30, 6-12-30 Engine and boiler seatings 4-10-30 1-12-30 Engines holding down bolts 26-1-31

Completion of pumping arrangements 13-2-31 Boilers fired 23-10-30 Engines tried under steam 26-2-31

Main boiler safety valves adjusted 13-2-31 Thickness of adjusting washers ✓ HP. 981 JMB. 20-11-30

Material and tensile strength of Rotor shaft HP. OH. STEEL. 84000 LBS. LP. 120000 LBS. Identification Mark on Do. LP. 940, 942, 945, 948, JMB. 2ND RED. 1070 JMB. 1ST RED. 1073 JMB. 1062-1066

Material and tensile strength of Pinion shaft OH. STEEL. 2ND RED. 88500 " 1ST RED. 89000 " Identification Mark on Do. 1058 HAS. 20-11-30. JMB.

Material of Wheel shaft OH. STEEL. Identification Mark on Do. 20-11-30. JMB. Material of Thrust shaft OH. STEEL. Identification Mark on Do. SPARE. 1074 HAS. 13-3-31

Material of Tunnel shafts OH STEEL. Identification Marks on Do. 31, 3, 30. HAS. Material of Screw shafts OH. STEEL. Identification Marks on Do. 1119. HAS. 13-5-31

Material of Steam Pipes OH. STEEL. SOLID DRAWN Test pressure 1400 LBS.

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 Section 49 of the Rules been complied with YES.

Is this machinery a duplicate of a previous case YES If so, state name of vessel T.S. "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 HAS BEEN SATISFACTORILY INSTALLED

THE ABOVE MENTIONED MACHINERY HAS BEEN FITTED IN THE VESSEL. THE QUALITY OF THE MATERIALS AND WORKMANSHIP

IS GOOD. THE HAVE BEEN TESTED UNDER WORKING CONDITIONS AND FOUND SATISFACTORY, AND IN THE OPINION OF THE UNDERSIGNED

ARE ELIGIBLE TO HAVE THE RECORD OF + LMC 2-31 IN THE REGISTER BOOK.

Certificate (if required) to be sent to \_\_\_\_\_  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee ... \$ 30 00 PHIL.  
Special Two GENERATING SETS ... \$ 300 00 PHIL.  
Donkey Boiler Fee ... \$ 30 00 PHIL.  
INSTALLATION ... \$ 125 00 BOS.  
Travelling Expenses (if any) ... \$ 40 00 PHIL.

When applied for,

MAR 12 1931

When received,

2. H. 1931

Committee's Minute

NEW YORK MAR 25 1931

Assigned

+ LMC. 2.31

B Stewart Humphreys for self & J. M. Buchanan  
Engineer Surveyor to Lloyd's Register of Shipping.



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