

See Report No. 3304

RECORD NEW YORK June 16-1920

Rpt. 4.

REPORT ON MACHINERY.

No. 3304

Received at London Office TUE. JUL. 6 1920

Date of writing Report 7th JUNE 1920 When handed in at Local Office 19 Port of SAN FRANCISCO
 No. in Survey held at Oakland, Cal Date, First Survey MAR 29th Last Survey 22nd MAY 1920
 Reg. Book. on the S.S. "VACUUM" (Number of Visits 19) Tons { Gross 7009
 Net 4321
 Master S.S. HARRIS Built at Oakland By whom built The Moore & Blo When built 1920
 Engines made at Hamilton, Ohio By whom made The Hooven, Owens, Rentschler Co when made 1920
 Boilers made at Oakland, Cal. By whom made The Moore & Blo when made 1920
 Registered Horse Power 680 Owners The Vacuum Oil Co Port belonging to New York

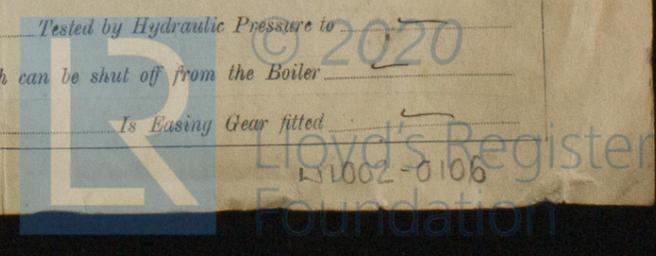
Horse Power as per Section 28 680 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

VES, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks three
 Cylinders 27 1/2, 46, 78 Length of Stroke 51 Revs. per minute 75 Dia. of Screw shaft 15.75 Material of screw shaft steel
 as per rule 17 as fitted 17
 screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight
 propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part
 the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two
 are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 8'-2"
 Tunnel shaft 14.77 Dia. of Crank shaft journals 15.5 Dia. of Crank pin 16 Size of Crank webs 30 1/2 x 10 1/8 Dia. of thrust shaft under
 as per rule 16 as fitted 16 Dia. of screw 18'-0" Pitch of Screw 17.25 No. of Blades 4 State whether moveable yes Total surface 100 sq ft
 Feed pumps two Diameter of ditto 2 x 8 x 24 Stroke 24 Can one be overhauled while the other is at work yes
 Bilge pumps two Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work yes
 Donkey Engines two Sizes of Pumps 7 x 6 x 10, 4 x 12 x 8 1/2 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room five 3 1/2" suction in E & B room In Holds, &c. One 3 1/2" suction for peak, One 3"
one after peak, two 3 1/2" suction in pump room
 Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"
 Are the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves
 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
 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
 pipes are carried through the bunkers none How are they protected —
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 Crew Shaft Tunnel watertight — Is it fitted with a watertight door — worked from —

RS, &c.—(Letter for record (S) Manufacturers of Steel Lukens Steel Co)
 Heating Surface of Boilers 9900 Is Forced Draft fitted yes No. and Description of Boilers 3 Scotch Marine
 Working Pressure 220 lb Tested by hydraulic pressure to 330 lbs Date of test 10/5/20 No. of Certificate 156-7-8
 boiler be worked separately yes Area of fire grate in each boiler oil burner No. and Description of Safety Valves to
3 1/2" steam Area of each valve 9.62 sq in Pressure to which they are adjusted 220 Are they fitted with easing gear yes
 distance between boilers or uptakes and bunkers or woodwork — Mean dia. of boilers 15'-5 1/4" Length 12'-0" Material of shell plates steel
1 1/16" Range of tensile strength 60000-71,600 Are the shell plates welded or flanged — Descrip. of riveting: cir. seams D.R.
T.R. D.B.S. Diameter of rivet holes in long. seams 1 5/8 Pitch of rivets 9 3/4 Lap of plates or width of butt straps 22 1/2"
 degrees of strength of longitudinal joint rivets 83.3 Working pressure of shell by rules 238 Size of manhole in shell 12" x 16"
 plate 93.7 compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 48 1/8"
 plain part top — Thickness of plates crown 11" Description of longitudinal joint welded No. of strengthening rings —
 bottom — bottom 16" pressure of furnace by the rules 235 Combustion chamber plates: Material steel Thickness: Sides 3/4 Back 3/4 Top 3/4 Bottom 1"
 stays to ditto: Sides 6 3/4 x 8" Back 8 1/4 x 6 1/8" Top 8 x 6 3/4" If stays are fitted with nuts or riveted heads riveted Working pressure by rules 252
 of stays steel Area at smallest part 1.755 sq in Area supported by each stay 56.72 Working pressure by rules 278 End plates in steam space:
steel Thickness 1 5/16" Pitch of stays 18" How are stays secured double nuts Working pressure by rules 238 Material of stays steel
 smallest part 10.32 sq in Area supported by each stay 324 sq in Working pressure by rules 330 Material of Front plates at bottom steel
3/8" Material of Lower back plate steel Thickness 3/8" Greatest pitch of stays 16" Working pressure of plate by rules 260
 of tubes 3" Pitch of tubes 4 1/8" Material of tube plates steel Thickness: Front 3/8 Back 3/8 Mean pitch of stays 10.5"
 cross wide water spaces 13 Working pressures by rules 315 Girders to Chamber tops: Material steel Depth and
 of girder at centre 11 x 3/4" double Length as per rule 34" Distance apart 8" Number and pitch of stays in each 4, 6 3/4"
 pressure by rules 290 Steam dome: description of joint to shell — % of strength of joint —
 Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes —
 rivets — Working pressure of shell by rules — Crown plates — Thickness — How stayed —

HEATER. Type — Date of Approval of Plan — Tested by Hydraulic Pressure to —
 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler —
 of Safety Valve — Pressure to which each is adjusted — Is Easing Gear fitted —

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IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top and bottom end bolts and nuts. Two main bearing bolts and nuts. Set of coupling bolts and nuts. Set of rings for H.P. I.P. and L.P. pistons. Set of valves for air and bilge pumps. Crank shaft nut. Set of top and bottom end brasses. Eccentric strap. H.P. and L.P. valve spindles. Link block and brasses. Air pump rod and bucket. Valve chest and cylinder cover studs. Set of rings for H.P. and I.P. piston valves. Relief valve springs, etc. Separate feed pumps

The foregoing is a correct description,

P.L. Jolyon, Chief Enginr Moor Shiplyg Co Manufacturer.

Dates of Survey while building: During progress of work in shops -- 29/3/20, 1/4/20, 16/4/20, 20/4/20, 22/4/20, 30/4/20, 3/5/20, 7/5/20, 10/5/20, 14/5/20. During erection on board vessel --- 4/5/20, 10/5/20, 18/5/20, 20/5/20, 24/5/20, 26/5/20, 29/5/20, 29/5/20. Total No. of visits 19. Is the approved plan of main boiler forwarded herewith " " " donkey " " "

Dates of Examination of principal parts—Cylinders See Slides Engine Cover Report Pistons — Rods — Connecting rods — Crank shaft 22/4/20 Thrust shaft 29/3/20 Tunnel shafts — Screw shaft 22/4/20 Propeller 10/5/20 Stern tube 29/3/20 Steam pipes tested 24/5/20 Engine and boiler seatings 4/20, 20/4/20 Engines holding down bolts 19/5/20 Completion of pumping arrangements 25/5/20 Boilers fixed 19/5/20 Engines tried under steam 29/5/20 Completion of fitting sea connections 1/5/20 Stern tube 20/4/20 Screw shaft and propeller 10/5/20 Main boiler safety valves adjusted 28/5/20 Thickness of adjusting washers LOCK NUTS Material of Crank shaft O.H. steel Identification Mark on Do. see list of forgings Material of Thrust shaft steel Identification Mark on Do. C.H. 4/2 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts steel Identification Marks on Do. C.H. 3-2 Material of Steam Pipes steel Test pressure 660 lbs per sq inch 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 duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines and boilers have been built under special survey and in accordance with the Rules; the material and workmanship are sound and good. They have been fitted on board in an efficient manner, tried under strain and found satisfactory. They are in my opinion, eligible to be classed in the Register Book with the records of L.M.C. 5. 20. FITTED FOR OIL FUEL 5. 20 F.P. ABOVE 150°F.

It is submitted that this vessel is eligible for TRB RECORD + LMC 5. 20. F.D. Fitted for oil fuel 5. 20. F.P. above 150°F.

1/3 of mach. fee (or \$95.00) to be cred. Cleveland - their Rpt. 124 plus \$140.00 Cleveland travelling expenses.

The amount of Entry Fee ... £\$ 15.00 : When applied for, June 10, 1920 Special ... £\$ 270.00 : When received, 6/9/20 Donkey Boiler Fee \$ 140.00 Travelling Expenses (if any) \$ 2.00

Committee's Minute New York JUN 22 1920

Assigned + L.M.C. 5. 20

MACHINERY DONE WRITTEN 6.7.20

F. M. Entosh J. Blackett Engineer Surveyor to Lloyd's Register of Shipping



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