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# REPORT ON OIL ENGINE MACHINERY.

No. 1315

Received at London Office

MON. MAY. 17 1920

of writing Report 17 Apr 20 When handed in at Local Office 23 Apr 20 Port of Bath, Me  
 in Survey held at Bath, Me Date, First Survey 25 Nov 1919 Last Survey 14 April 1920  
 Book. Number of Visits  
 on the Single } Screw vessel Turn Solitaire  
 Twin }  
 Triple }  
 Master J.S. Morris Built at Bath, Me By whom built The Transatlantic Yard No. 10 When built 1920  
 Engines made at Auburn, N.Y. By whom made R. Intosh & Seymour Corporation Engine No. 4495 When made 1920  
 Moke Boilers made at By whom made Boiler No. When made  
 Make Horse Power 500 each engine Owners The Texas Steamship Co. Port belonging to New York  
 m. Horse Power as per Rule 188 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c. Type of Engines Diesel 2 or 4 stroke cycle Single or double acting Single  
 Maximum pressure in cylinders 500 lbs. No. of cylinders 6 each engine No. of cranks 6 each engine Diameter of cylinders 16"  
 Length of stroke 24" Revolutions per minute 185 Means of ignition Kind of fuel used oil  
 Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 21" 2  
 Distance between centres of main bearings Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 9.4  
 as fitted 9.5  
 Diameter of crank pins 9.5 Breadth of crank webs as per Rule 12.5  
 as fitted 13 Thickness of ditto as per Rule 5.31  
 as fitted 5.4  
 Diameter of flywheel shaft as per Rule 9.5  
 as fitted 9.5 Diameter of tunnel shaft as per Rule 7.34  
 as fitted 7.34 Diameter of thrust shaft as per Rule 9.4  
 as fitted 9.5 7.8  
 Diameter of screw shaft as per Rule 8.25  
 as fitted 8.25 Is the screw shaft fitted with a continuous liner the whole length of the stern tube  
 the after end of the liner made watertight in the propeller boss yes If the liner is in more than one length are the joints burned  
 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  
 two liners are fitted, is the shaft lapped or protected between the liners yes If without liners, is the shaft arranged to run in oil  
 Type of outer gland fitted to stern tube Length of stern bush 34" Diameter of propeller 7.41"  
 Pitch of propeller 6.4" No. of blades 3 state whether moveable no Total surface 22.6 square feet  
 Method of reversing Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Thickness of cylinder liners  
 Are the cylinders fitted with safety valves yes Means of lubrication Part forced, Part gravity Are the exhaust pipes and silencers water cooled or lagged with  
 non-conducting material yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine led  
 up funnel. No. of cooling water pumps 3 Is the sea suction provided with an efficient strainer which can be cleared  
 Is there a bilge pump fitted to the main engines none Diameter of ditto Stroke  
 Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines 3 How driven Electric motor forced.  
 Sizes of pumps 5x10, 5x6, 5x6, No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 1-4", 2-3 1/2"  
 Is there a hold, etc. Oil cargo pumping system No. of ballast pumps 1 How driven Serial electric motor Sizes of pumps 5x10  
 Is the ballast pump fitted with a direct suction from the engine room bilges yes State size 6" Is a separate auxiliary pump suction fitted in  
 Engine Room and size Are all the bilge suction pipes fitted with roses yes Are the roses in Engine Room always accessible yes  
 Are the shutters on Engine Room bulkheads 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 floor plates yes  
 Are the discharge pipes above or below the deep water line below Are they each fitted with a discharge valve always accessible on the plating of the vessel yes  
 Are all pipes, cocks, valves and pumps in connection with the machinery 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 No tunnel. Motor apt.  
 Is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
 No. of main air compressors 1 each engine No. of stages 3 Diameters Stroke Driven by main engine  
 No. of auxiliary air compressors No. of stages Diameters Stroke Driven by  
 No. of small auxiliary air compressors 3 No. of stages 2 Diameters 2 1/2 - 9 1/2 Stroke 6 Driven by Fairbanks-Morse Make  
 No. of scavenging air pumps Diameter Stroke Driven by  
 Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access yes  
 0.30 Feb 31 RECEIVERS:—No of high pressure air receivers 3 Internal diameter 1-14" 2-8 1/2" Cubic capacity of each 1-1700 cu in 2-4300 cu in

Material steel Seamless, lap welded or riveted longitudinal joint 2 seamless, 1 lap welded Range of tensile strength  
 Thickness 2-5/16 Working pressure by Rules No. of starting air receivers 2 Internal diameter 54"  
 Total cubic capacity 150 cu ft Material steel Seamless, lap welded or riveted longitudinal joint riveted  
 Range of tensile strength thickness 1" Working pressure by rules Is each receiver, which can be isolated,  
 fitted with a safety valve as per Rule yes Can the internal surfaces of the receivers be examined Starting yes What means are provided for cleaning their  
 inner surfaces Manholes provided for entrance Is there a drain arrangement fitted at the lowest part of each receiver yes

WEB FR  
EB-FRAMES, In For  
No. of Side Str  
B-FRAMES, In E. &  
B-FRAMES, In Afte  
No. of Side Str  
Size of Face Ang  
ACKET PLATES t  
eb Frames, depth an  
LKHEADS. N  
Vess  
BULKHEADS 10  
Peak  
51-61  
COLLISION,,  
TITION,,  
GITUUDINAL,, /  
the outside Plates de  
the Sluice Valves an  
STRAKES.  
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Bar Keel, state Riveting.)  
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R OF LONG BRIDGE  
OF STRAKE BELO  
of Flat Plate Ke  
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BRIDGE SIDES  
ASTLE SIDES ...  
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IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded? ✓

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....					
"    "    COVERS .....					
"    "    JACKETS.....					
"    "    PISTON WATER PASSAGES.....					
MAIN COMPRESSORS—1st STAGE.....					
"    2nd " .....					
"    3rd " .....					
AIR RECEIVERS-STARTING .....					
"    INJECTION .....					
AIR PIPES .....					
FUEL PIPES .....					
FUEL PUMPS .....					
SILENCER .....					
"    WATER JACKET .....					
SEPARATE FUEL TANKS .....	7 April 1920		12 ft head	Not stamped	

PLANS. Are approved plans forwarded herewith for shafting (If not, state date of approval)

Receivers

Separate Tanks

SPARE GEAR

1 cylinder cover complete, 1 complete set of valves, valve seats & springs for main engine, 6 fuel needle valves, 1 pair complete, 1 set of piston rings, 1 set of gear wheels, 2 connecting rod top & bottom end bolts & nuts, 2 main bearing bolts, set of coupling bolts for crank & tail shafts, 1 set of piston rings for compressors, 1 half set of valves for main & auxiliary compressors, 1 fuel pump complete for main engine, an ample supply of working parts for all auxiliary oil engines, spare sets of valves & working parts for all pumps, assorted bolts & nuts, one set cylinder cover studs, spare lengths of pipes for fuel delivery & blast pipes with suitable unions & flanges

The foregoing is a correct description,

The Texas Steamship Co  
per Geo B Drake  
mgr

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1919 Nov 25 Dec 5 1920 Mar 5, 11, 15, 22, 25, 31 Apr 3, 7, 8, 12, 13, 14  
During erection on board vessel --  
Total No. of visits 14

Dates of Examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓

Crank shaft ✓ Thrust shaft ✓ Tunnel shafts ✓ Screw shaft 25/11/19 Propeller 15/3/20 Stern tube 25/11/19 Engine seatings 5/12/19

Engines holding down bolts 31/3/20 Completion of pumping arrangements 7/4/20 Engines tried under working conditions 18/4/20 + 13/4/20

Completion of fitting sea connections 31/3/20 Stern tube 5/3/20 Screw shaft and propeller 25/11/19

Material of crank shaft steel Identification Mark on Do. 264 264 264 Material of thrust shaft steel Identification Mark on Do. 264 264 264

Material of tunnel shafts r Identification Marks on Do. ✓ Material of screw shafts steel Identification Marks on Do. 308 308 308

Is the flash point of the oil to be used over 150° F. yes

Is this machinery duplicate of a previous case no If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under Special Survey, as per New York report 15714 Recruit. It has now been fitted on board under Special Survey in accordance with the Rules & approved plans & the workmanship & material are good. The main engines & auxiliaries have been satisfactorily tried at sea under full power & they are now in good & safe working condition & eligible in my opinion to receive the notations + LMC 4.20 (in red) & 'Oil Eng.', subject to the internal combustion engines being annually surveyed.

The amount of Entry Fee ... £ 15.00 : When applied for,  
Special ... £ 215.00 : 24 Apr 1920  
Donkey Boiler Fee ... £ ✓ :  
Travelling Expenses (if any) £ 97.00 : When received, 30 Apr 1920

Committee's Minute New York APR 27 1920

Assigned + LMC 4.20 subject

John S. Heck.  
Engineer Surveyor to Lloyd's Register of Shipping.

1315

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REC'D NEW YORK Oct. 11 1918

Apr. 24 1920

Apr 15 1920

MON. MAY. 17 1920

Port of New York to N.Y.

Continuation of Report No.

Dated

on the

### Report on Machinery.

REMARKS.

Survey held at Auburn N.Y. Date first survey

Last survey  
Succ.  
Toys. Net.

Engines made at Auburn N.Y. by the Dutch and Spross Corp. 1915.

Boiler horse power 500 each. Maximum pressure in cylinders 500 lbs.  $\square$ .

Engines - Description 2 four cycle Diesel type. No. of cylinders 6 each. No. of

main cranks 6. No. of air compressor cranks 1. Dia. of cylinders 16"

Length of stroke 24" Revs per minute 185. Minimum revs. per min. 60.

Maximum revs. per min. 240. Dia. crank shaft journals Rule 9.435"

crank pin fitted 9.5" Size of crank webs fitted 13x5 1/4" Dia. of thrust

shaft main collars 9.5" Dia. flywheel shaft 9.5"

Cylinders built up of special hard close grained cast iron of plain cylin.

dical form turned on the outside as well as bored on the inside and

have been examined and found good and free from defects.

Water jackets of cylinders and water passages of the cylinder covers

have been tested by hydraulic pressure to 800 lbs.  $\square$  and found good

and tight. Pistons not water or oil cooled.

Exhaust pipes are water cooled, no silencers are furnished with

the engine.

Cylinder heads are fitted with safety valves loaded to 20% above

maximum working pressure in the cylinders and discharge when no

damage can occur.

Air compressors and their valves are easy of access for overhauling and

adjustment and a unique unloading chamber of approved design

provides for the gradual unloading of the compressor through the

complete range of output.

The air compressor is a three stage compressor and the compressors on

each engine is of sufficient capacity to furnish injection air for two

engines when operating at their maximum loads and maximum

speeds with still some margin of safety. A purge pot is fitted

on each stage and one on the after cooler.

The main injection air receivers of the standard design steel type were

manufactured by the Tindal Thomas Co. of Eddystone Pa. and are

48 inches outside diameter by 83 inches long and 5/16 inches thick, the receiver

injection air receiver was manufactured by M.W. Kellogg of Jersey City and is

18 inches outside diameter by 8 ft 3 1/2 in. long and is one inch thick, this is

lap welded, designed submitted and approved and receiver tested.

The maneuvering air receivers are constructed of mild steel plates and

manufactured by the Peter D'Arcy Co. of Pittsburgh Pa. the air 4'-6"

inside diam. 11'-3 3/4" overall length and 1" in thickness. The plans of

these tanks was submitted and approved and tested to 500 lbs.  $\square$

by hydraulic pressure in the presence of a Surveyor.

Capacity on test provided for forty starts on each tank.

The plans of the crank and thrust shafts have been submitted and

approved and have been examined and tested as required by the Rules.

readable valves, 1 pair  
in bearing bolts,  
main & auxiliary

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Port of New York to N.Y.

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dated

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The engines have been tested in the shop under full power and found to give an effect at normal load and revolutions of 500 B.H.P. The motors have been overloaded at their normal speed to 640 B.H.P. but the manufacturers make no guarantee whatever on overload and refuse any responsibility if the motors are operated under unusual conditions -

One engine marked. <sup>LLOYDS</sup> N° 263 and one <sup>LLOYDS</sup> N° 264 on crank and thrust  
8.7.18 9.7.18  
T.G.D. T.G.D. shaft couplings.

Spare Gear: - Cylinder head complete, exhaust valve complete, 2 exhaust valves, air valve complete, fuel valve complete, air starting valve complete, safety valve for cylinder head complete, relief valve for cylinder head complete, piston complete, set main piston rings, 6 fuel valve needles, fuel valve guide, fuel valve lifting nut, fuel valve stuffing box and gland, atomizer, burner plate, nut and ring, set gear wheels for cam shaft drive, fuel pump complete, fuel pump sight glass, set air compressor piston rings, air compressor suction and delivery valves, injection air receiver valve disc, 2 connecting rod top and bottom end bolts and nuts, 2 main bearing bolts and nuts, set crank shaft coupling bolts and nuts, set intermediate shaft coupling bolts and nuts, set cylinder head studs and nuts, springs for air compressor suction and delivery valves, fuel pump suction and discharge valves, several lengths of piping various sizes for fuel delivery air blast etc. with unions, bolts and nuts, assortment of bolts and nuts, packing and gaskets.

The foregoing is a correct description.

W. Lubin & Seymour Corporation, New York, Manufacturers.

The Society's Rules as to the details of construction, fitting of valves, lubrication, accessibility etc. have been fully complied with as far as the construction of these main engines are concerned. The remaining requirements will have to be attended to at the fitting of the motors in the vessel. In my opinion these engines are of good design, the materials and workmanship are sound and good and are eligible to be classed in the Society's Register of Good Provisioning all the requirements of the Rules are carried out when fitted aboard ship.

Dates of survey while building in shops - 1919. JAN. 30. FEB. 15. APRIL 3. 4.  
MAY. 14. JULY 9. AUG. 22. SEPT. 19.

Entry Fee. \$ 25.00 } Fee applied for 28 Oct/19  
Survey Fee. \$ 100.00 }  
Expenses - \$ 16.05

H. H. Godd.

Engineer Surveyor to Lloyd's Register

See Bos. Rpt. 1315