

# REPORT ON OIL ENGINE MACHINERY.

No. 423  
23 JUN 1928

Received at London Office

Date of writing Report 21 May 28 When handed in at Local Office 1928 Port of Cleveland, Ohio  
 No. in Survey held at Grove City Pa Date, First Survey Mar. 16 Last Survey Apr. 20 1928  
 Reg. Book No. 9484 on the Single Twin Triple Screw vessels "YUKONDOC" Tons {Gross \_\_\_\_\_ Net \_\_\_\_\_  
 Master \_\_\_\_\_ Built at Port Glasgow By whom built Blyde S.B. & Co. Yard No. 298 When built 1912  
 Engines made at Grove City By whom made Bessemer Gas Eng. Co. Engine No. 433 When made 1928-4  
 Donkey Boilers made at \_\_\_\_\_ By whom made \_\_\_\_\_ Boiler No. \_\_\_\_\_ When made \_\_\_\_\_  
 Brake Horse Power 925 Owners Paterson Steamships Ltd. Port belonging to Toronto  
 Nom. Horse Power as per Rule 189 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

OIL ENGINES, &c. Type of Engines Bessemer Diesel Type M.R. 6 2 or 4 stroke cycle 4 Single or double acting S  
 Maximum pressure in cylinders 550 No. of cylinders 6 No. of cranks 6 Diameter of cylinders 18"  
 Length of stroke 22 Revolutions per minute 300 Means of ignition Solid injection Kind of fuel used Diesel oil

Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 22"  
 Distance between centres of main bearings 30 1/2" Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 10.30" as fitted 12 3/4"  
 Diameter of crank pins 12 3/4" Breadth of crank webs as per Rule 13.69" as fitted 16" Thickness of ditto as per Rule 5.46" as fitted 4"

Diameter of flywheel shaft as per Rule 10.30" as fitted 12 3/4" Diameter of tunnel shaft as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Diameter of thrust shaft as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_  
 Diameter of screw shaft as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Is the screw shaft fitted with a continuous liner the whole length of the stern tube \_\_\_\_\_  
 Is the after end of the liner made watertight in the propeller boss \_\_\_\_\_ If the liner is in more than one length are the joints burned \_\_\_\_\_

If 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 \_\_\_\_\_  
 If two liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ If without liners, is the shaft arranged to run in oil \_\_\_\_\_  
 Type of outer gland fitted to stern tube \_\_\_\_\_ Length of stern bush \_\_\_\_\_ Diameter of propeller \_\_\_\_\_  
 Pitch of propeller \_\_\_\_\_ No. of blades \_\_\_\_\_ state whether moveable \_\_\_\_\_ Total surface \_\_\_\_\_ square feet

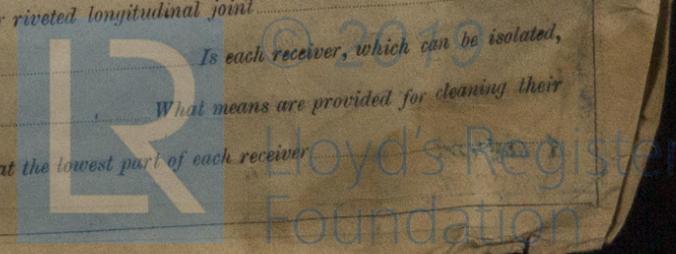
Method of reversing Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 1 1/2"  
 Are the cylinders fitted with safety valves yes Means of lubrication Forced feed Are the exhaust pipes and silencers water cooled or lagged with non-conducting material \_\_\_\_\_  
 If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine \_\_\_\_\_  
 No. of cooling water pumps \_\_\_\_\_ Is the sea suction provided with an efficient strainer which can be cleared within the vessel \_\_\_\_\_

No. of bilge pumps fitted to the main engines \_\_\_\_\_ Diameter of ditto \_\_\_\_\_ Stroke \_\_\_\_\_  
 Can one be overhauled while the other is at work \_\_\_\_\_ No. of auxiliary pumps connected to the main bilge lines \_\_\_\_\_ How driven \_\_\_\_\_  
 Sizes of pumps \_\_\_\_\_ No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room \_\_\_\_\_  
 and in holds, etc. \_\_\_\_\_ No. of ballast pumps \_\_\_\_\_ How driven \_\_\_\_\_ Sizes of pumps \_\_\_\_\_

Is the ballast pump fitted with a direct suction from the engine room bilges \_\_\_\_\_ State size \_\_\_\_\_ Is a separate auxiliary pump suction fitted in Engine Room and size \_\_\_\_\_  
 Are all the bilge suction pipes fitted with roses \_\_\_\_\_ Are the roses in Engine Room always accessible \_\_\_\_\_  
 Are the sluices on Engine Room bulkheads 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 floor 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 all pipes, cocks, valves and pumps in connection with the machinery 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 \_\_\_\_\_ If 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 one No. of stages two Diameters 5 1/2" + 2 3/4" Stroke 5" Driven by 15 HP Elect. motor  
 No. of auxiliary air compressors \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
 No. of small auxiliary air compressors \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
 No. of scavenging air pumps \_\_\_\_\_ Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

DIAPHRAGM RECEIVERS:—No. of high pressure air receivers \_\_\_\_\_ Internal diameter \_\_\_\_\_ Cubic capacity of each \_\_\_\_\_  
 Material \_\_\_\_\_ Seamless, lap welded or riveted longitudinal joint \_\_\_\_\_ Range of tensile strength \_\_\_\_\_  
 Thickness \_\_\_\_\_ working pressure by Rules \_\_\_\_\_ No. of starting air receivers \_\_\_\_\_ Internal diameter \_\_\_\_\_  
 Material \_\_\_\_\_ Seamless, lap welded or riveted longitudinal joint \_\_\_\_\_  
 Working pressure by rules \_\_\_\_\_ Is each receiver, which can be isolated, \_\_\_\_\_  
 thickness \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ What means are provided for cleaning their \_\_\_\_\_  
 Can the internal surfaces of the receivers be examined \_\_\_\_\_  
 Is there a drain arrangement fitted at the lowest part of each receiver \_\_\_\_\_  
 Is there a safety valve as per Rule \_\_\_\_\_  
 Is there a drain arrangement fitted at the lowest part of each receiver \_\_\_\_\_  
 Is there a drain arrangement fitted at the lowest part of each receiver \_\_\_\_\_



1920-162M

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....		550 #	45 #		The tests were not witnessed by the undersigned
"    "    COVERS .....		550 #	45 #		
"    "    JACKETS .....		15 #	45 #		
"    "    PISTON WATER PASSAGES .....					
MAIN COMPRESSORS—1st STAGE .....					
"    2nd " .....					
"    3rd " .....					
AIR RECEIVERS—STARTING .....		250 #			
"    INJECTION .....					
AIR PIPES .....		250 #			
FUEL PIPES .....		1000 #			
FUEL PUMPS .....		4000 #			
SILENCER .....					
"    WATER JACKET .....					
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for shafting *no. Mar. 1928* Receivers *no.* Separate Tanks *no.*  
(If not, state date of approval)

SPARE GEAR

The foregoing is a correct description,  
*The Bessemer Gas Engine Co*  
*N. J. Okford Street, New York* Manufacturer.

Dates of Survey while building: During progress of work in shops -- *March 16, 14, April 5, 6 + 20.*  
 During erection on board vessel -- *5.*  
 Total No. of visits *5.*

Dates of Examination of principal parts—Cylinders *Mar. 16 to April 20.* Covers *Mar 16 to Apr. 20* Pistons *Mar 16 to Apr. 20* Rods *Mar. 16 to Apr. 20* Connecting rods *Mar. 16 to Apr. 20*

Crank shaft *Apr. 5.* Thrust shaft  Tunnel shafts \_\_\_\_\_ Screw shaft \_\_\_\_\_ Propeller \_\_\_\_\_ Stern tube \_\_\_\_\_ Engine seatings \_\_\_\_\_

Engines holding down bolts \_\_\_\_\_ Completion of pumping arrangements \_\_\_\_\_ Engines tried under working conditions \_\_\_\_\_

Completion of fitting sea connections \_\_\_\_\_ Stern tube *LLOYDS 431-432* Screw shaft and propeller *LLOYDS 443.*

Material of crank shaft *Steel.* Identification Mark on Do. *1-27-28 W.J.F.* Material of thrust shaft *2-14-28 W.J.F.* Identification Mark on Do. *Steel*

Material of tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of screw shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_

Is the flash point of the oil to be used over 150° F. \_\_\_\_\_  
 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.) *The above engines have been built under special survey. The vessel for which they are intended is not classed with this Society. The materials & workmanship were found to be sound & efficient.*

The amount of Entry Fee ... £ : : When applied for,  
 Special ... *\$ 251.25* : : *31 May 1928*  
 Donkey Boiler Fee ... £ : : When received,  
 Travelling Expenses (if any) *\$ 45.00* : : *19*

Committee's Minute NEW YORK JUN 13 1928

Assigned *Transmit to London*

*G. Drummond*  
 Engineer Surveyor to Lloyd's Register of Shipping.  
 FRI 10 AUG 1928  
 See file  
 3896  
 Lloyd's Register Foundation

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