

## REPORT ON OIL ENGINE MACHINERY.

No. 3884

23 JUN 1934

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Writing Report 27<sup>th</sup> May 1934. When handed in at Local Office 27<sup>th</sup> May 1934 Port of Montreal  
 Survey held at Ogdensburg, N.Y. Date, First Survey 16<sup>th</sup> July 1933 Last Survey 8<sup>th</sup> May 1934  
 Book. Number of Visits 10  
 27 on the Single Screw vessel "Badger State" EX YUKONDOC Tons { Gross 1539  
 30 R.B. { Net 1118  
 at Port Glasgow By whom built Clyde & Co. Glasgow Yard No. 278 When built 1912  
 Lines made at Grove City, Pa. By whom made Sumner Gas Engine Co. Engine No. 433 When made 1928-4  
 Key Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓  
 Ice Horse Power 925 Owners Federal Motorship Corp. Port belonging to Buffalo  
 n. Horse Power as per Rule 189 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 de for which vessel is intended ✓

### ENGINES, &c. — Type of Engines Sumner Diesel - Type 7. R. 6 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 550 lbs Diameter of cylinders 18" Length of stroke 22" No. of cylinders 6 No. of cranks 6  
 of bearings, adjacent to the Crank, measured from inner edge to inner edge 22" Is there a bearing between each crank yes

Revolutions per minute 300 Flywheel dia. 3.67' Weight 1.27 Tons Means of ignition valve injection Kind of fuel used diesel oil

Crank Shaft, dia. of journals as per Rule 10.30" 10-12 Crank pin dia. 12 3/4" Crank Webs Mid. length breadth 16" Thickness parallel to axis ✓  
 as fitted 12 3/4" Mid. length thickness 7" Thickness around eye hole ✓

Flywheel Shaft, diameter as per Rule 10.30" Intermediate Shafts, diameter as per Rule 6.57" Thrust Shaft, diameter at collars as per Rule 9"  
 as fitted 12 3/4" as fitted 8.75" as fitted 9"

Tube Shaft, diameter as per Rule 10.30" Screw Shaft, diameter as per Rule 10 3/8" Is the tube screw shaft fitted with a continuous liner yes  
 as fitted 10.30" as fitted 10 3/8"

Bronze Liners, thickness in way of bushes as per Rule 5 3/8" Thickness between bushes as per rule 5" Is the after end of the liner made watertight in the  
 as fitted 5 3/8" as fitted 5"

Propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓

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 ✓ Is an approved Oil Gland or other appliance fitted at the after end of the tube ✓

Shaft ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 36"

Propeller, dia. 8' Pitch 5' No. of blades 4 Material cast whether Moveable no Total Developed Surface 26.125 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when disclutched yes Means of lubrication Direct fuel

Thickness of cylinder liners 1 1/2" Are the cylinders fitted with safety valves yes 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 ✓

Footing Water Pumps, No. 2 - 4" x 5" Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 1 Diameter 5" Stroke 8" Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line { No. and Size 2 - 1 plunger pump 4" x 5" and 1 - 6" x 12"  
 How driven Electric drive

Ballast Pumps, No. and size 1 - 4" x 5" 1 - 6" x 12" Lubricating Oil Pumps, including Spare Pump, No. and size 4 - 2" gear pumps

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 Pumps, No. and size: — In Machinery Spaces 2 - 4" dia. in engine space In Pump Room 2

In Holds, &c. 6 - 4" dia. 1 - in fore peak 1 - in aft peak 4 - in holds

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size same as above

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces yes

led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks Valves

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line above

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 yes

What pipes pass through the bunkers ✓ How are they protected ✓

What pipes pass through the deep tanks ✓ Have they been tested as per Rule ✓

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one  
 compartment to another ✓ Is the 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 ✓

Main Air Compressors, No. One No. of stages Two Diameters 5 1/2" x 2 3/4" Stroke 5" Driven by 15 H.P. Electric motor

Auxiliary Air Compressors, No. One No. of stages Two Diameters 5 1/2" x 2 3/4" Stroke 5" Driven by 15 H.P. Electric motor

Small Auxiliary Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Scavenging Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule 5" dia. No. 7 1/2" x 10" Position ✓

AIR RECEIVERS: — Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes Is a drain fitted at the lowest part of each receiver yes

Can the internal surfaces of the receivers be examined and cleaned yes Internal diameter 34" x 10' 0" thickness 1/2"

High Pressure Air Receivers, No. Two Cubic capacity of each ✓ Range of tensile strength 28.32 lbs Working pressure by Rules 250 lbs  
 Actual 250 lbs

Seamless, lap welded or riveted longitudinal joint Compound Material Steel Internal diameter ✓ thickness ✓

Starting Air Receivers, No. ✓ Total cubic capacity ✓ Range of tensile strength ✓ Working pressure by Rules 250 lbs  
 Actual 250 lbs

Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules 250 lbs  
 Actual 250 lbs

Isolated, their

Foundation

Foundation

Foundation

Foundation

Foundation



IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

✓

Is the donkey boiler intended to be used for domestic purposes only

✓

PLANS. Are approved plans forwarded herewith for Shafting

no

Receivers

✓

Separate Tanks

✓

Donkey Boilers

✓

General Pumping Arrangements

✓

Oil Fuel Burning Arrangements

✓

### SPARE GEAR.

Has the spare gear required by the Rules been supplied

yes

State the principal additional spare gear supplied

Spare parts - Main engines. 1. Cylinder head. 1 piston. 1 crank pin bearing with 4 bolts. 1. Main bearing. 4. Exhaust valves. 2 fuel injectors. 2. fuel pump plungers with bushings. 2. Air starting valves. 1 set piston rings. 2. Piston pin bushings.

Spare parts - Generating Engines. 1- piston 1. crank pin bearing with two bolts. 1. Main bearing 2. fuel injectors 1. Air starting valve. 2 exhaust valves 1. set piston rings. 2 fuel pump plungers with bushings 1. Piston pin with bushings

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops--

During erection on board vessel--

Total No. of visits

✓

✓

✓

Dates of Examination of principal parts—Cylinders 10<sup>th</sup> Aug 1933 Covers 10<sup>th</sup> Aug 1933 Pistons 10<sup>th</sup> Aug 1933 Rods 10<sup>th</sup> Aug 1933 Connecting rods 10<sup>th</sup> Aug 1933

Crank shaft 10<sup>th</sup> Aug 1933 Flywheel shaft 10<sup>th</sup> Aug 1933 Thrust shaft 10<sup>th</sup> Aug 1933 Intermediate shafts ✓ Tube shaft ✓

Screw shaft 10<sup>th</sup> Aug 1933 Propeller ✓ Stern tube 10<sup>th</sup> Aug 1933 Engine seatings 10<sup>th</sup> Aug 1933 Engines holding down bolts 10<sup>th</sup> Aug 1933

Completion of fitting sea connections 31<sup>st</sup> Aug 1933 Completion of pumping arrangements 31<sup>st</sup> Aug 1933 Engines tried under working conditions Aug 8<sup>th</sup> 1933

Crank shaft, Material ✓ Identification Mark ✓ Flywheel shaft, Material ✓ Identification Mark ✓

Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material ✓ Identification Marks ✓

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material ✓ Identification Mark ✓

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

yes

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

yes

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

✓

If so, have the requirements of the Rules been complied with

✓

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with

✓

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.)

This machinery has been in the vessel since 1928. The engines have now been thoroughly overhauled and new parts supplied as required. The machinery has been tested out under full working conditions and proven satisfactory.

The amount of Entry Fee .. £

Special ... .. £

Donkey Boiler Fee ... .. £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

Committee's Minute

Assigned

See M.L. Rpt. 3886

Engineer Surveyor to Lloyd's Register of Shipping.



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