

# Report of Survey for Repairs, &c., of Engines and Boilers.

(Received at London Office)

19 MAR 1937

Report of Survey for Repairs, &c., of Engines and Boilers. Date of writing Report Feb. 25, 1937. When handed in at Local Office Feb. 25, 1937. Port of Newport News, Va.,

Survey held at Norfolk & Newport News, Va. Date, First Survey June 5, 1936 Last Survey Feb. 5, 1937. (No. of Visits 36.)

on the Machinery of the Steamer Steel S/S "BULK OIL" (Ex "Daniel Webster")

Gross 7761.72 Vessel built at Gloucester City, N.Y. By whom The Pusey & Jones Co. When 1919  
Net 5887.0 Engines made at Schenectady, N.Y. By whom General Electric Co. When 1919  
(Donkey)

Boilers, when made (Main) 1929. Owners' Address National Bulk Carriers, Inc.  
(if not already recorded in Appendix to Register Book.)

Managers American Tankers Corporation of Port New York. Voyage Houston, Texas.  
If Surveyed Afloat or in Dry Dock Delaware.

Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).  
CHARACTER. ☒ for Special Survey Date of last Survey and of Periodical Surveys. Years assigned and expired. Machinery and Boiler Surveys (including date of N.B., if any).

Donkey Boilers ☒

st Report No. Port

Particulars of Examination and Repairs (if any) IMC.

Periodical Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the nature of Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and details being detailed in the body of the report, should be briefly summarised at the end of the report. State also the names and initials of any letters respecting this case.

Damage cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined

Is a damage report made by anyone else? If so, by whom?

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes

Donkey " " " " " "

Was not done, state for what reasons? Yes

What parts of the Boilers could not be thus thoroughly examined? Find & after repairs.

What special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler? Sept 26th 1936

Latest date of internal examination of each boiler Oct 26th 1936

Did the Surveyor examine the Safety Valves of the Main Boiler? Yes To what pressure were they afterwards adjusted under steam? 250 lbs per sq

Did the Surveyor examine the Safety Valves of Donkey Boiler? Yes To what pressure were they afterwards adjusted under steam? Yes

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes and of the Donkey Boilers? Yes

Did the Surveyor examine the drain plugs of the Main Boilers? Yes and of the Donkey Boiler? Yes

Did the Surveyor examine all the mountings of the Main Boilers? Yes and of the Donkey Boiler? Yes

Has screw shaft now been drawn and examined? Yes Is it fitted with continuous liner? Yes Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No

Has shaft now been changed? No If so, state reasons Yes Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No

Has the shaft now fitted been previously used? Yes Has it a continuous liner? Yes Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No

Date of examination of Screw Shaft Dec 22 36 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft Yes

Engine parts, when referred to by numbers, should be counted from forward. Is electric light and power fitted? Yes

If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done Plumbing complete

The main engines together with main and auxiliary condensers and all auxiliary pumps have been removed from their former position amidships to aft and are now situated on the top of the old No. 7 double bottom tank, which has been specially prepared for this purpose. The turbine seating, reduction gear and thrust block seating were removed at the same time and were placed in position and the whole of these structures as built were electrically welded to the tank top, full continuous welds each side to all members that were originally rivetted to the tank top amidships and it appears to be a first class job. The turbine was opened up for examination and rotor lifted. All ahead and astern blading examined and found in good order. Blading of casing in good order. Rotor journals and bearings for same examined and found in good order. Turbine thrust and gland sealing rings examined and found in good order. Steam nozzle block removed and tested to 750 Lbs. per square inch and found tight and sound and refitted in place. Turbine operating gear overhauled and placed in proper working order. All lubricating oil pipes

General Observations, Opinion, and Recommendation:— The boilers and machinery of this vessel

(State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c.; thus, for example, B.S. 9,11, B.&M.S. 9,11, & L.M.C. 9,11, or & L.M.C. 140 lb., F.P., &c.)

are now in good working order, eligible in my opinion to be reinstated in the Register Book with the record of IMC. 2.37. Boilers built 1929, refitted 1937. Propeller shaft (CL) seen 12.36.

Fitted for oil fuel F.P. above 150°F. Starboard boiler only fitted with super-heat.

The water tube boilers to be examined annually.

Survey Fee (per Section 29) SS. Mch. \$200.00 Fees applied for 13/2 1937

T.S., E. Light & boiler \$105.00 Received by me 12/4 1937

Repairs & Repair Fee (if any) \$31.00

Travelling expenses (if chargeable) NEW YORK MAR 10 1937

Committee's Minute

Assigned LMC 2.37 T.S. 12.36

NB 1929 Refitted 2.37

CERTIFICATE WRITTEN 15.4.37

Is a Certificate required? If so, to be sent to

Engineer Surveyor to Lloyd's Register of Shipping.

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Lloyd's Register

WR03 5560 5114

Foundation



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and oil filters thoroughly cleaned out and lubricating arrangements generally overhauled and placed in good order.

The high speed pinion, intermediate and low speed gear opened up and examined and found in good condition. All bearings removed, cleaned and examined. All reduction gear journals examined and found in good order. Reduction gear casings examined and found in good order. Now thoroughly cleaned out. All lubricating pipes and fittings removed, cleaned and refitted in place.

The main thrust shaft and block opened up and examined and found in good order.

A new length of intermediate shafting has now been made to suit the new conditions; adjacent couplings reamed out and new bolts fitted.. *Wt. short*

Propeller shaft drawn and examined - condition good. Continuous liner good.

Stern bush good - not relined. Shaft down 1/16" full. Propeller good.

On completion of the examination of the main propelling machinery, the turbine, reduction gear and thrust shafting was set up in true alignment and the necessary cast iron blocks fitted between the casing, thrust block and the seatings and secured in place with fitted bolts.

The main and auxiliary condensers have now been refitted in respective positions on properly constructed seatings and connected up to pumps attached. Both condensers have now been re-tubed and tested with a 30 foot head of water and found good and tight. New condensate pumps fitted to the main condenser and the radio jets have been overhauled and put in good working order. Auxiliary condenser, air and circulating pumps, overhauled and now in good working order.

The main feed pumps have been thoroughly overhauled - all valves examined and renewed, where necessary. Packing rings renewed where necessary and rods trued up and repacked.

Fire and bilge pumps, general service pump, lubricating oil cooler pumps, sanitary and fresh water pumps opened up and examined. New packing rings fitted as found necessary; valves overhauled, rods trued up and valve gear overhauled and adjusted and all glands repacked. A new electric driven lubricating oil cooler pump now fitted, in addition to the two duplex steam pumps now installed.

Fuel oil service pumps thoroughly overhauled and now in good working order.

All old sea cocks and valves and ship's side discharge valves now fitted in their new positions. Bilge injection valve refitted in place and connected to the main circulating pump as before. Valve boxes refitted in suitable locations, easily accessible and suitable labeled and connected up. Three engine room bilge suction now fitted 3 1/2" diameter. One port, one starboard and one at the after well. Fuel oil suction valves and steam to the fuel oil service pumps can be shut off from the deck clear of casings.

A separate bilge pump has been fitted to the pump room, duplex pump 5" x 5" x 8" and a connection from the main tank stripping pump has also been fitted in this space for use if found necessary.

The main boilers on this vessel were constructed in 1929 and were originally fitted to the S/S "MORRO CASTLE". They were constructed under the Rules of the U.S. Steamboat Inspection Service and to the Rules of the American Bureau of Shipping, for a



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working pressure of 300 Lbs. per square inch. They have been carefully examined internally and externally as far as practicable and found in good order. The scantlings of the steam drum, rivetting of same and the tube heads were found to be in accordance with the plans supplied. The tubes are in good condition. These boilers are "32 section" boilers and the starboard boiler was shipped on board as built. This is the only boiler in which a super heater is fitted. The port boiler was made up from another boiler and cut through to make this a "13 section" boiler in accordance with the approved <sup>plan</sup>. The mud drum was cut through and the two outboard 4" holes in same fitted with machined spigot plates from the inside and welded as shown. The opened end is also with a heavy plate 1.1/8" thick - the end of mud drum closed in on same and welded as shown. The drum end was removed from the other section of the boiler, the necessary alterations made to drum end, spigot patches fitted where necessary and the drum end fitted and rivetted in place in accordance with the approved plan.

11/2" dia  
All the mountings on these boilers have been thoroughly overhauled, examined and tested to 700 Lbs. per square inch. The boilers were tested by hydraulic pressure to 375 Lbs. per square inch and found tight and sound. New main steam piping of steel tubing .43" thick now fitted and tested to 750 Lbs. per square inch.

All auxiliary and feed pipe lines have also been tested to 700 Lbs. per square inch. All piping in connection with the fuel oil up to the burners tested to 700 Lbs. per square inch.

These boilers are fitted on top of the old F.W. tanks on seatings of approved design which are part old and part new to suit the present lay out. The seatings are connected to the tank top by welding - full continuous welds on each side of all members and boilers efficiently connected to seatings.

On completion of this, the safety valves of the main boilers were adjusted to blow at 250 Lbs. per square inch. A dock trial was held and all pumps, pump lines tested out and found to be in good order.

The main engines were also examined under working conditions and found to be in good working order and particular attention was given at this time to the welding of the turbine, reduction gear and thrust block seatings to the tank top and no sign of movement was observable.

Steering Gear. Hydro Electric. Electric motor cleaned, brushes and brush holders adjusted. Armature bearings and field coil terminals examined, motor in good order.

Power pump opened up - working parts cleaned and adjusted and re-assembled. Crosshead rams cleaned and packing overhauled and adjusted. Crosshead brasses and fittings cleaned and adjusted. New control wires fitted from Bridge to telemotor gear, telemotor gear overhauled and adjusted and system re-charged. Gear tested and examined under working condition - good.

Windlass. Hand steering gear connected up and found to be in good working order.

Windlass: A new electric motor has now been fitted to the windlass. The windlass generally has been overhauled, tested and is now in good working order.

Electric Light: The turbines and dynamos (2 of each) have been thoroughly cleaned and overhauled. Armatures baked and all brush holders and connections overhauled and placed



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In good order. Switch-board and fittings thoroughly overhauled and replaced as found necessary. All fittings, wiring and connections in the lower holds and tween deck space removed, and holes plugged up. All cables for windlass, winches, steering gear and lighting now examined and part renewed. Switch boxes part renewed and exposed switch boxes are of a W.T. pattern.

On completion of repairing and renewals, the electric light installation was tested under full load conditions and found to be in good working order.

Spare gear examined and found to be in accordance with the Rules.