

REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

Writing Report..... DEC^r 18th 1947. When handed in at Local Office..... 22-12-47. Port of..... Glasgow

Survey held at..... Glasgow. Date. First Survey..... October 22nd Last Survey..... December 11th 1947. (No. of Visits..... 1st)

On the Machinery of the Wood, Iron or Steel. S.S. "MESA VERDE"
Gross 10648 Vessel built at Portland, Oregon U.S.A. By whom Kaiser Co. Inc. When 1944
Net 6301 Engines made at Lynn Mass U.S.A. By whom Gen. Electric Co. When 1944
Boilers, when made (Main) 1944. (Donkey).....
Owners British Tanker Co. (Incorporated) Owners' Address.....
Managers..... Port LONDON. Voyage.....
If Surveyed Afloat or in Dry Dock Both in Elderslie Dry dock and afloat in H. Geo. V. Dock.

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.
Machinery and Boiler Surveys (including date of N.B., if any)
CLASSIFICATION CONTEMPLATED
Fitted for oil fuel Carrying petroleum in bulk.

Particulars of Examination and Repairs (if any) DOCKING, PART M.S., ELEC^r REPAIRS
Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the cause of Repairs, if any, detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be should be separated from Repairs due to other causes; and besides being detailed in the body of the report, should be briefly noted at the end of the report. State also the dates and initials of any letters respecting this case.

Present condition of funnel(s).....
Surveyor examine the Safety Valves of the Main Boilers?..... To what pressure were they afterwards adjusted under steam?.....
Surveyor examine the Safety Valves of the Donkey Boilers?..... To what pressure were they afterwards adjusted under steam?.....
Surveyor examine all the manholes, doors and their fastenings of the Main Boilers?..... and of the Donkey Boilers?.....
Surveyor examine the drain plugs of the Main Boilers?..... and of the Donkey Boilers?.....
Surveyor examine all the mountings of the Main Boilers?..... and of the Donkey Boilers?.....
Screw shaft now been drawn and examined? YES Has it a continuous liner? YES Is an approved oil retaining appliance fitted at the after end? NO
Screw shaft now been changed? NO If so, state reasons..... Has the shaft now fitted been previously used?..... Has it a continuous liner?.....
Approved oil retaining appliance fitted at the after end?..... State date of examination of Screw Shaft OCTOBER 23rd '47 State the wear down in the shaft A FIT. Is electric light and/or power fitted? YES If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? YES
Insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? YES.

Engine parts, when referred to by numbers, should be counted from forward.
If survey is not complete, state what arrangements have been made for its completion and what remains to be done. Docking and Electrical repairs complete. To complete the machinery survey the whole of the main and auxiliary machinery remains to be examined in accordance with Rule requirements, with the exception of the undernoted items. It was stated by the Owner's representative that the parts remaining to be examined would be opened for survey as opportunity offered. It was further stated that the boilers were examined by inspectors of the U.S.C.G. at San Pedro, Cal. February 1947, and that it was the intention of the owners to open them for examination by the Society's surveyors within 12 months from that date.

Now Done :-
Docking :- Vessel placed in dry dock. Propellor, screw shaft, stem bush, sea cocks and valves with their outside fastenings examined and found or placed in good condition.
Docking Repairs :- Oregon pink wood in stem bush removed and replaced with lignum vitae. 2- Wasted spindles on Aux. sea suction valves renewed.
(See Continuation Sheet).

Observations, Opinion, and Recommendation:— The machinery of this vessel in so far as now complete is in good condition and eligible in our opinion to remain "Class Contemplated", with fresh record of L.M.C. M.S. 12,470 when the machinery survey has been completed and have notation T.S. C.L. 10,47 now.

Fees applied for: T.S. C.L. £ 3: 0: 0 ELECTRICAL REPAIRS £ 25: 0: 0
Damage or Repair Fee (if any) £ : : Late attendances £ 10: 10: 10
Expenses (if chargeable) £ : : :
Received by me, John Manson, M. L. & M. Gardiner, Engineer Surveyors to Lloyd's Register of Shipping.

Surveyor's Minute: GLASGOW As now
23 DEC 1947
Lloyd's Register Foundation
005377-005386-0301/2

S.S. "MESA VERDE"NOW DONE :- For Part M.S.

The following main and auxiliary machinery parts were examined and found or placed in good condition :-

Main alternator rotor lifted and tested
Main turbine examined in its entirety,
with top and bottom half casings.

One auxiliary (Worthington) simplex type feed pump.

For Machinery Wear & Tear, and Electrical Repairs :-

Steel supporting stays found broken in turbine casing exhaust belt to condenser. Satisfactorily repaired by welding in place.

2- Int. Stage wheels of the rotor blading found damaged on end clearance knife edges of blading strips. Now dressed and end clearances of all stages checked with rotor in position. All satisfactory.

ELECTRICAL INSTALLATION

A General Examination of the electrical installation carried out. The main and auxiliary alternators, propulsion motor, generators, auxiliary motors, control gear, cables, fittings on switchboards and in distribution boards, examined as far as practicable and insulation resistance of all circuits measured.

It was found that the insulation test on the main alternator rotor was 50,000 ohms and even after cleaning the exposed parts of the windings with carbon tetrachloride then applying heat, the insulation test could not be raised above 150,000 ohms. The rotor was removed ashore to be 'stored' but after this treatment the test was only 300,000 ohms.

The steel end covers over the rotor windings were withdrawn and it was found that the inner surface of the insulation, which is situated between the top layer of the windings and the end cover, was coated with carbon. It would appear that the carbon particles had been drawn in from the slip-rings by the fan fitted to the rotor and deposited inside the rotor by centrifugal force. The rotor winding was found to be made up of strip copper with alternate turns insulated, the top layer being uninsulated, and it is assumed that a path was formed from these turns across the carbon deposit to earth.

The windings were cleaned, the top turns heavily varnished and a sheet of 'Silopex' insulation was laid over the turns before the original glass fibre insulation was replaced and the end covers refitted. The insulation test at this stage was 30 megohms.

The rotor was balanced, returned to the ship and fitted into place but on running the Main Alternator at its normal revolutions excessive vibration was experienced and the turbine and alternator rotors had to be balanced, in place, as a combined unit.

On completion of this work the set was run on load for two hours at 1550 r.p.m. then on no load up to 4000 r.p.m. and the insulation resistance of the rotor measured at that time was 50 megohms. A trial of the main propulsion equipment was carried out at a later date under working conditions and was satisfactory.

The examination and insulation test of the remainder of the electrical installation was satisfactory. J.M.

The boilers, oil fuel installation and all auxiliary machinery working in conjunction with the Main Engine were also examined during the above trial and all found satisfactory. J.M.

noted
Part Classification
Survey
W.C.H.
13/1/48