

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

(Received at London Office)

30 MAR 1950

Date of writing Report 20-3-1950 When handed in at Local Office 20-3-1950 Port of Greenock

No. in Survey held at Greenock Date First Survey 29-12-49 Last Survey 8-3-1950
 Reg. Book. 04450 on the Machinery of the Wood, Iron or Steel S.S. "DOVER HILL" (ex "Empire Mainoli"-46) (No. of Visits 2)

Tonnage { Gross 7290 Vessel built at Sunderland By whom Short Bros. L^d When 1945-4
 Net 5055 Engines made at Newcastle By whom N.E. Marine Eng^{co} (1938) L^d When 1945-4
 Nominal Horse Power 510 M.H. Boilers, when made (Main) 1945 (Donkey) ✓
 No. of Main Boilers 3 (Spt) Owners Down Hill S. Co L^d Owners' Address Greenock
 No. of Donkey Boilers None Managers Cumlier Ship Management Co L^d (If not already recorded in Appendix to Register Book.)
 Steam Pressure in Main Boilers 220 lbs Port Greenock Voyage Swanpool (in ballast)
 in Donkey Boilers ✓ If Surveyed Afloat or in Dry Dock Both (State name of Dock) Victoria Harbour, Greenock

Last Report No. 2 Port GreenockParticulars of Examination and Repairs (if any) ✓ LMC - C.L. - OIL FUEL CONVERSION

(Periodical Surveys, when held, must be reported in detail and verbatim in the terms of the Rules. State clearly the cause 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 besides being detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case.)

In 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 ✓Was 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 " " " ✓If not, state for what reasons ✓ What parts of the Boilers could not be thus thoroughly examined? COMPLETEWhat 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? COMPLETEState latest date of internal examination of each boiler P. 22-2-50. C. 22-2-50. S. 22-2-50 Present condition of funnel GoodDid the Surveyor examine the Safety Valves of the Main Boilers? YES To what pressure were they afterwards adjusted under steam? SAT 220 lbs. Spt 230 lbsDid the Surveyor examine the Safety Valves of the Donkey Boilers? ✓ To what pressure were they afterwards adjusted under steam? ✓Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? YES and of the Donkey Boilers? ✓Did the Surveyor examine the drain plugs of the Main Boilers? ✓ and of the Donkey Boilers? ✓Did the Surveyor examine all the mountings of the Main Boilers? YES and of the Donkey Boilers? ✓Has the 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? NoHas shaft now been changed? No If so, state reasons ✓ Has the shaft now fitted been previously used? ✓ Has it a continuous liner? ✓Is an approved oil retaining appliance fitted at the after end? ✓ State date of examination of Screw Shaft 9-2-50 State the wear down in the stern bush 1/8"Is electric light and/or power fitted? YES If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? YESHas the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? YESIf the Survey is not complete, state what arrangements have been made for its completion and what remains to be done To complete LMC - Both dynamosto be placed in efficient running condition.Now None for LMC & C.L.

Vessel placed in drydock. Propeller, after end of stem bush & all outside underwater fastenings examined & found in good order. Screw shaft drawn & examined to gether with continuous liner, stem bush, gland etc & found in good order. All underwater fittings opened, examined & closed after minor repairs.

Main Engines. Opened & examined all cylinders, cross, piston, rings, rods, valves & casings crankshaft journals, main & bottom end bearings, crosshead journals & bearings, guides & faces eccentric pulley, chains & valve motion, thrust collar & pack, intermediate shafting & roller bearings & attached pumps. Holding down bolts & checks attached to an intermediary. Main condenser cleaned, examined & tested.

New piston rings fitted to H.P. engine & spare replaced. H.P. & M.P. valve spindles

General Observations, Opinion, and Recommendation: The machinery of this vessel is in P.T.O

(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, BS 9.11, EMS 9.11 or LMC 9.11 or LMC 140 lb., PD, &c.)

good condition & eligible in my opinion to remain as classed with fresh record of LMC 3.50. C.L. 2.50 & with added notation "Fitted for oil fuel 3.50. P.P. above 150°F" subject to both dynamo engines & armature being placed in an efficient condition before the vessel proceeds on an outward voyage

Survey Fee (per Section 29) ✓ LMC £ 32 : 0 : 0 Fees applied for

Special Damage or Repair Fee (if any) (per Section 29.) £ 10 : 10 : 0 24 MARCH 1950

Oil Fuel Conversion FREE SURVEY £ 52 : 10 : 0 Received by me, 19SUMMARY & LATE FEES. GLASGOW 29 MAR 1950Assigned Deferred for comp. LMC.5 2/50

A. G. Sinclair
 Engineer Surveyor to Lloyd's Register of Shipping.

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was done for M.C. (continued)

Found worn in way of packing & now machined, lined up a new packing fitted. New done
beams fitted to M.P. & L.P. valve rods. L.P. guide shoe found unsatisfactory & now remodelled. Engine
alignment checked & all necessary adjustments made. All bearings, king, packing etc adjusted
& engine closed in good order. Minor machining & repairs as necessary to attached pumps.

Intermediate shafting & roller bearings - Examination showed No. 4 roller bearing race
had shifted on shaft thus allowing roller to fracture housing. It was also noted that No. 3
bearing was of the orthodox "plummer" type - it having, it was stated been fitted some time
previously. Signs of movement were apparent on coupling faces. Shafting has now been
completely re-aligned as for a new ship. The Representative to the Maker of these roller races
(Heron Cooper Roller Bearings Co Ltd.) attended & bearings have now been completely overhauled
& fitted to his instructions - the following alterations being incorporated. (1) Centre welded gusset
plate fitted to stiffen existing slots. (2) Girth Cl. Chock fitted directly under centre of
housing as support against weight of shaft & obviate deflection of housing. A new roller bearing
fitted to No. 3 & plummer bearing remaining aboard as precautionary measure only.

Boiler P. C. S. Boiler opened, cleaned & examined internally & externally in
their entirety including superheater elements & headers, chocks, ties, manholes & fastenings
& all mountings. General condition found satisfactory. 2 stay & 1 plain tube found
unsatisfactory in Starboard boiler & now renewed. Superheater elements removed ashore & there tested.
Minor repairs to mountings only. Alteration to boiler front to facilitate oil burning
carried out at this time.

Boiler later examined under steam found satisfactory & safety
valves adjusted to pressure stated.

Auxiliary Machinery - All auxiliary machinery opened up, examined & closed
in good order with exception of dynamo (mentioned under S.R.L.).

Windlass - Both opposite drums found seized & now free & workable. General
adjustments to bearings etc as necessary.

Steering Engine & Telescope - minor repair & checking only.

Ballast Pump - Closed in good order after adjustments.

P.S. Pump - condition good. Bilge suction line blanked & length of pipe removed
on account of oil fuel conversion.

Circulating Engine & Impeller - Piston & valve rods lightly machined & lapped to
suit. Impeller clearance checked & casing cleaned & coated.

Auxiliary Ordnance - Cleaned, examined & tested.

Feed Pumps (2) - Generally overhauled & in good order.

Feed Heats - Cleaned & in good order.

Evaporator - Cleaned & examined. Coils annealed. Safety valve adjusted to W.P. 23 lb.

Fan Engine & Impeller - Closed in good condition after minor adjustments.

Fresh Water Domestic Pump - minor repair only.

Dynamo Engine (2) - Cylinder blocks removed ashore. Valve casing machined &
cylinder sides removed. New piston & valve rods fitted, new valves fitted
& all bearings adjusted.

During subsequent trials it was found inboard dynamo
failed to run at required revolution & investigation showed piston was 0.40 small to cylinder
bore. It is recommended that either a new bronze piston be fitted or the existing piston
be machined for ring prior to vessel proceeding on her outward voyage. This recommendation

S.S. DOVER HILL

to be a condition of clearance.

Mechanical Circuit & Equipment - All circuits megger tested. General
found low & now attended to. Re-tested upon completion & found satisfactory.
Both dynamo armatures removed ashore, commutator machined & undercut.
During trials it was noted that inboard armature was not running true
& commutator sparking heavily. Brush tension has been increased & sparking
reduced thus allowing vessel to proceed to Liverpool where it is the owner's
intention to again machine commutator & overhaul brush gear. It is
recommended this armature be placed in an efficient condition prior to the
vessel proceeding on her outward voyage - this recommendation being a subject
to continuation of clearance.

Bilge & Pumping Systems - examined, overhauled & closed in
good order.

Now Done For Conversion To Oil Fuel Burning.

The vessel has at this been converted to Oil Burning all
alterations being satisfactorily carried out as per attached plans (approved
6.1.50) & requirements of Section XX of the British Rules (1948-49). Being
completed with as far as they are applicable.

Fuel unit was made by Messrs Todd's Oil Burners Ltd.
London. Particulars. Unit No. 1292. Pump Nos. 237169 (PORT). 237249 (STAR).

HEATERS (PORT) 11968. (STAR) 11965. 110/125 TEST 500/650" 26-10-49.

Transfer Pump - Maker - Messrs G.T. WEIR LTD.

Size 7" x 6 1/2" x 15" No. 238050. MANUFACTURED 1949.

All oil fuel discharge & pressure piping has been tested to
specified test pressure on low heating coils in Deep, Double Bottom & Settling
Tanks. All suction lines tested to 50 lb/sq. in. Suction line passing through
deep Tank also satisfactorily tested.

It has been verified no damper exists in the funnel.

A section of bilge suction line has been removed from the G.S.
pump line & ends blanked thus insuring no fuel contamination of
Fresh Feed water is possible from bilge range.

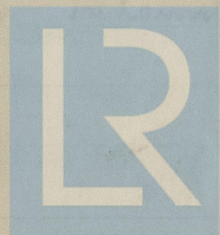
Required extended spindles operated from upper deck have been
fitted to all tank sections, steam smothering & unit isolating valves.
These remote controls found efficient under test. Adequate portable fire
extinguishers of the foam type & sand bins fitted in addition to 2 fire main
line connections in boiler room. Bilge trap fitted to all furnace mouth

Main Engine, Oil fuel installation, auxiliary machinery, steering
gear, windlass & pumping arrangements were examined at sea under
normal conditions & found satisfactory with the exception of dynamo
Engine & Armature whose future efficient running has been entered on S.R.L.

A. H. Sinclair

Greenock. 9.3.50.

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