

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

(Received at London Office 28 MAY 1941)

Date of writing Report 12-5-41 When handed in at Local Office 26-5-41 Port of Manchester

No. in Reg. Book 78552 Survey held at Manchester Date, First Survey 4-11-40 Last Survey 20-4-41 (No. of Visits 27)  
on the Machinery of the Wood, Iron or Steel M.V. "LUCERNA"

Tonnage { Gross 6556 Vessel built at Newcastle By whom Palmers Co. Ltd. When 1930-8  
Net 3928 Engines made at Newcastle By whom Walsland Shipyard Co. When 1930  
Nominal Horse Power 749 Boilers, when made (Main) (Donkey) 1930  
No. of Main Boilers ✓ Owners Lumina P.S. Co. Ltd. Owners' Address (if not already recorded in Appendix to Register Book.)  
No. of Donkey Boilers 2 Managers H.E. Moss & Co Port Liverpool Voyage  
Steam Pressure in Main Boilers ✓ 4 Surveyed Afloat or in Dry Dock Nº 3 DD & NUDE WHEEL LOCKS Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).  
in Donkey Boilers 120 lbs (state name of Dock.) Manchester

Last Report No. 62763 Port gls DAMAGE, C.S. & REPAIRS

Particulars of Examination and Repairs (if any) DAMAGE, C.S. & REPAIRS  
(Periodical surveys, when held, must be reported in detail and seriatim 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 Yes - Not required

Was a damage report made by anyone else? If so, by whom? Underwrites Surveyor.

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

Donkey " " " " YES

If this was not done, state for what reasons? ✓

And what parts of the Boilers could not be thus thoroughly examined? ✓

Also 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? ✓

State latest date of internal examination of each boiler. Present condition of funnel(s) Efficient.

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

Did the Surveyor examine the Safety Valves of Donkey Boiler? YES To what pressure were they afterwards adjusted under steam? 120 lbs/ps

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

Did the Surveyor examine the drain plugs of the Main Boilers? ✓ and of the Donkey Boilers? MADE FITTED.

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

Has 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 appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? ✓

State date of examination of Screw Shaft 26-11-40 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft 3/32

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

If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? ✓

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? ✓

If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done To COMPLETE THE C.S. SURVEY.

SEE FORM 7 (E).

Damage stated to have been sustained by enemy action in the North Atlantic on the 2<sup>nd</sup> August 1940, whilst outward bound in convoy.

For further particulars, see Official Log Books and Glasgow Surveyors Report

NOW DONE FOR DAMAGE.

Vessel placed in drydock, propeller removed and the screwshaft drawn in for examination. Propeller, screwshaft, stern tube and all outside fastenings examined and found in order.

All sea injection and overboard discharge valves and cocks opened up, examined and found or placed in good order.

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

(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, E.S. 9,11, B.&M.S. 9,11, & L.M.C. 9,11, or X.L.M.C. 140 lb., E.D., &c.)

as now seen, is, in our opinion, in an efficient condition and eligible to remain as now classed in the Register Book and to have fresh records of D.B.S. 4,41 and C.L. 11,40 now and & L.M.C. CS (with date) when the C.S. survey is completed.

Survey Fee (per Section 29) D.B.S. 3 0 0 CS 12 0 0 Fees applied for 26-5-41  
Special Damage or Repair Fee (if any) (per Section 29.) £12:12:0 Received by me, D.H. Knowles  
Travelling expenses (if chargeable) £ : : 19 D.R. Whalley  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute As now  
Assigned C.S. 4.41 4.41

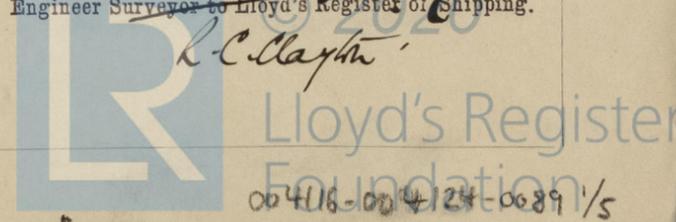
As now

D.B.S. 4.41 4.41

CS 8,34,

Insert Character of Ship and Machinery precisely as in the Register Book

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



## M.V. "LUCERNA"

NOW DONE FOR DAMAGE (CONTINUED)

The following parts of the "main engines" were opened up, examined and found or placed in good order.

WORKING CYLINDERS:-

N<sup>os</sup> 1, 2, 3, 4, 5 and 6 cylinder covers.

N<sup>os</sup> 1, 2, 3 and 4 cylinder liners.

N<sup>os</sup> 1, 2, 3 and 4 piston heads, skirts and rods.

N<sup>os</sup> 3 and 4 crosshead pins and brasses.

N<sup>os</sup> 1, 2, 3, 4, 5 and 6 crank webs, pins and brasses.

All crankshaft journals and the top halves of the main bearing brasses.

The crankcase and bedplate were examined and all crankcase and holding down bolts hammer tested.

MAIN ENGINE DRIVEN COMPRESSOR:-

The cylinder liners, jackets, pistons, rods, crosshead pins and brasses and the crank pin and brasses.

All suction and delivery valves.

The H.P. M.P. and L.P. coolers tested.

MAIN ENGINE DRIVEN SCAVENGE PUMP:-

The cylinder liners, jackets, pistons, rods, crosshead pins and brasses and the crank pin and brasses.

All scavenge pump valves and the scavenge pump.

MAIN ENGINE DRIVEN PUMPS:-

All pumps links, crosshead pins and brasses.

The piston cooling, jacket cooling, bilge and sanitary pumps valve chests only opened up and all valves and fittings examined.

The pump chambers and bodies were examined externally.

THRUST AND SHAFTING.

The thrust shaft, pads, bearings and seatings

All holding down bolts hammer tested.

The intermediate shafting and bearings. Alignment of shafting checked.

AUXILIARIES.

PORT AUX. STEAM DRIVEN COMPRESSOR:- All working parts opened up & examined

PORT STEAM DRIVEN GENERATOR ENGINE:- All working parts opened up & examined.

STEERING ENGINE & WINDLASS:- All working parts opened up & examined

AUXILIARY CONDENSER:- Doors removed and the tubes examined in place under water test and found tight.

EVAPORATOR:- Examined externally under an hydraulic pressure test of 50 lbs/sq" and found in order.

AUXILIARY MACHINERY CASTINGS:- All castings and bedplates of the auxiliary machinery were examined externally for fractures & found or placed in good order.

LUBRICATING OIL & PISTON WATER COOLERS:- Examined under an hydraulic pressure test of 60 lbs/sq"

CARGO PUMPS:- Port cargo pump now renewed and the starboard pump re-built at the Maker's works.

## M.V. "LUCERNA"

NOW DONE FOR DAMAGE (continued)

STEAM PIPES:- All main and auxiliary steam pipes examined in place under an hydraulic pressure test of 270 lbs/sq"

All heating steam coils and leads in the cargo and double bottom tanks were examined on completion of all repairs under an hydraulic pressure test of 200 lbs/sq".

CARGO AND FUEL OIL PIPE LINES:- All deck pipe lines were examined under an hydraulic pressure test of 60 lbs/sq"

All suction and filling pipe lines in all cargo tanks and in the machinery spaces were examined under an hydraulic pressure head to the weather deck.

DONKEY BOILERS.

The port and starboard donkey boilers were examined internally and externally together with all their mountings and fastenings

Both boilers were further examined under an hydraulic pressure test of 150 lbs/sq" and found in order.

The safety valves of both boilers were adjusted under steam to 120 lbs/sq"

The fuel oil burning installation was examined under working conditions also, the fire extinguishing appliances.

NOW DONE FOR DAMAGE REPAIRS.MAIN ENGINE

The 17° 3 cylinder cover and the piston skirt were found to be fractured and the spares on board were fitted.

A new spare cover and skirt were placed on board.

17° 5 bottom end brasses re-metalled. After intermediate shaft bearing renewed.

PORT AUX. STEAM DRIVEN COMPRESSOR:-

Stem Valve chest re-bored and a new valve fitted.

PORT STEAM DRIVEN GENERATOR ENGINE:-

C.B. Bedplate found fractured and now renewed.

MAIN ENGINE DRIVEN COMPRESSOR COOLERS:-

The H.P. and M.P. coolers <sup>from the M.V. "LUXOR"</sup> were reconditioned <sup>& fitted</sup> the old ones complete with jackets being removed for fitting in the M.V. "LUXOR" (See Manchester Report No. 10, 192)

CARGO PUMPS:-

A new cargo pump was fitted on the port side, the old one being damaged beyond repair.

The starboard pump was completely overhauled by the Trainers.

VALVES. The following valves were renewed on account of fractures.

9 - 10" Sluice Valves in the suction line to the cargo tanks

6 - 9" " " " discharge " from cargo pump room.

6 - 8" Cargo tank suction valves.

1 - 6" suction valve in 17° 3 Sumner tank.

4 - 10" sluice valves in the suction line at the pump room bulkhead

2 - 10" sea injection sluice valves in the pump room.

The above valves were tested by hydraulic pressure to 100 lbs/sq" D. H. Challinor

M.V. "LUCERNA"NOW DONE FOR DAMAGE REPAIRS (cont-ined)PIPES RENEWED:-

Five summer tank drop pipes

All cargo heating coils in 17<sup>5</sup> Tanks P&S

PIPES REPAIRED OR PART RENEWED:-

The main lubricating oil suction and delivery pipes.

The cylinder cover cooling water pipes

The steam piping to oil pumps in engine room

" " " " port boiler hydrokinetic.

" " " " jacket heating.

The heating coils in 17<sup>5</sup> A&B cargo tanks port & starboard

" " " " 17<sup>10</sup> " " starboard

A number of heating coils in the double bottom tanks.

NOW DONE FOR "OWNERS REPAIRS."

The port and starboard "heir's" feed water pumps were opened up, examined and placed in good order.

A new water end was fitted to the starboard pump, the old one being fractured.

DOCK TRIALS.

On completion of all repair work, satisfactory dock trials were witnessed. The main engine, auxiliaries and the cargo pumps being examined under working conditions.

NOW DONE FOR C.S.

It is recommended that all the parts of the machinery now examined for "damage" and "owners repairs", be included as part of the Continuous Survey of this vessel

D. Whalburn

(See Continuation sheet 17<sup>4</sup> for Electrical Survey).



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Lloyd's Register  
Foundation

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M.V. LUCERNA.

Electric Light Installation. generally examined & tested & insulation resistance tests made of all circuits & on completion of the work mentioned repair, found satisfactory.

Repairs: - Fore dynamo removed ashore & overhauled. Main's foremast lights removed from midship pantry. Pump room removed. Main's cut for structural repairs & replaced & junction box fitted in midship pantry. Cable pipe part renewed in fwd hold. Wiring & fittings throughout overhauled & made good as necessary.

Addition: - Degaussing cables fitted in heavy pipe round deck & suitable switchboard fitted in engine room.

R.C. Clayton.