

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

(Received at London Office)

Date of writing Report 28-1-54 When handed in at Local Office 28-1-54 Port of Panama
 in Survey held at La Mpesia Date First Survey 12-9-53 Last Survey 16-12-53
 (No. of Visits 8)

on the Machinery of the Wood, Iron or Steel Xmin screw S/S "LIVERPOOL"

Gross 14050 Vessel built at Newport Nms. By whom Newport Nms S.B. & D.D. Co. When 1921
 Net 8894 Engines made at Newport Nms. By whom Newport Nms. S.B. & D.D. Co. When 1921
 Per Rule 858 Boilers, when made (Main) 1921 (Donkey)
 Main Boilers 3 Owners Steamship Enterprise of Panama Inc. Owners' Address
 (if not already recorded in Appendix to Register Book.)
 Donkey Boilers 1290 Managers Port Panama Voyage
 Pressure— If Surveyed Afloat or in Dry Dock afloat and
 (State name of Dock.) La Mpesia arsenal my dock
 Main Boilers 200 lb.
 Donkey Boilers v

Report No. Port
 Particulars of Examination and Repairs (if any) LMC: Nothing. Screw shafts S.B. & D.D. Co. Damage: Affected State clearly the
 Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on
 of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides
 ailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and
 of any letter respecting this case

In 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 damage report will follow
 Damage report made by anyone else? If so, by whom?

Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? yes
 Donkey " " " "

State for what reasons? What parts of the Boilers could not be thus thoroughly examined?

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?
 Latest date of internal examination of each boiler Port & Starboard 5-10-53. Starboard 1-10-53 Present condition of funnel(s) efficient

Surveyor examine the Safety Valves of the Main Boilers? yes To what pressure were they afterwards adjusted under steam? 200 lb.
 Surveyor examine the Safety Valves of the Donkey Boilers? yes To what pressure were they afterwards adjusted under steam?

Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? yes, and of the Donkey Boilers?
 Surveyor examine the drain plugs of the Main Boilers? yes, and of the Donkey Boilers?

Surveyor examine all the mountings of the Main Boilers? yes, 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? yes

Has the shaft now fitted been previously used? yes Has it a continuous liner? yes
 Approved oil retaining appliance fitted at the after end? yes State date of examination of Screw Shaft Port & Starboard 25-11-53 State the wear down in the
 bush now removed Is electric light and 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
 Parts, when referred to by numbers, should be counted from forward. Auxiliary machinery should be referred to by position in Machinery Space.

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

DONE FOR LMC: At the Owners request examined:
 placed in my dock, examined propellers, stern tubes, all sea connections
 with their inside and outside fastenings and found or now placed in
 condition.

Screw shafts, Port & Starboard, drawn in examined and found or
 placed in good condition.

Port & Starboard main engines: examined. HP-IP-LP cylinders, pistons and
 valves, and steam chests, crossheads and bearing brasses, all crank
 and journals together with bottom end bearing brasses and main
 bearing brasses, hold-down bolts and bed plates, thrusts and intermediate
 shafts with their bearings, air pumps, bilge and sanitary pumps
 fitted, independent water circulating pumps, feed pumps, bilge
 general service pumps, fire pumps, (see please continuation sheet)

Observations, Opinion, and Recommendation:—

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
 any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, etc.)

Machinery of this vessel so far as now seen is in good condition and
 not is eligible in my opinion to remain as now classed with fresh
 of LMC 12.53. Screw shafts, Port & Starboard, last seen 11.53.

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
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1 FEB 1954

(N^o 1 sheet)

Rpt. 9a

Port of

Continuation of Report No. 19749 dated

2/1/54

on the

S/S "LIVERPOOL"

feed water heater, fan engines, cargo and stripping pumps, evaporators, oil fuel pressure pumps, oil fuel transfer pumps, oil fuel heaters, piping arrangement, hot well, generator steam engines, windlass, steering engine and all found or now placed in good condition.

main condensers examined under full head of water and found tight and satisfactory.

the copper main steam pipes, auxiliary above 3" bore removed, annealed and the steel main pipes and auxiliary hydraulically tested to twice the working pressure and found or now placed in order.

NOW DONE FOR BS

Examined the Port, starboard and Centre boilers internally, externally, together with their mountings, safety valves, fastenings, manholes, doors and found or now placed in good condition.

afterward examined the above boilers under steam and adjusted the safety valves as above.

the oil fuel burning arrangement and steam fire extinguishing installation examined and tested under working condition and found in order.

ELECTRICAL EQUIPMENT

Examined the electrical generators together with main switch board, electrical wirings and fittings, now placed in order and in accordance with the Rule Requirements, measured the insulation resistance of generators, and all circuits as required by the Rules and found in order.

NOW DONE FOR S.P.L.

main circulating pump casings, port and starboard, renewed. Special examined on starboard LP outboard cylinder foot and air pump chambers found in good condition.

the notation in the S.P.L. regarding the above items may now be deleted.

NOW DONE FOR WEAR AND TEAR REPAIRS

Port main engine: HP. IP. LP piston rods and slide valve spindles found worn in way of stuffing box skimmed up.

HP valve chest bored out and new valve rings fitted.

HP. IP. LP crosshead pins found scored skimmed up and bearings renewed. HP. IP. LP crosshead slipper shoes found white metal worn, scored or broken now renewed.

Air pump. liners and piston rod skimmed up.

Crank shaft lifted, checked alignment.

Thrust shaft found lightly scored in way of rings skimmed up.

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2/1/54

(X 2 sheet)

S/S LIVERPOOL

thrust collar lightly ^{screw} skimmed up and adjusted the thickness.

Starboard main engine:

HP. IP. LP piston rods and slide valve spindles found worn in way of stuffing box skimmed up.

HP valve chest bored out and new valve rings fitted.

HP. IP. LP crosshead pins found scored skimmed up and bearings reinstalled.

HP. IP. LP crosshead slipper shoes found white metal worn, scored & broken reinstalled.

Air pump: liner and piston rod found scored skimmed up. Bilge and sanitary pumps attached. Rams found scored skimmed up, suction and delivery valves skimmed up.

Crank shaft lifted, decked alignment.

Thrust shaft found lightly scored in way of rings skimmed up.

Thrust collar lightly scored skimmed up and thickness adjusted.

On completion - port & starboard - crank shafts, thrust shafts, and intermediate shafts bedded on bearings, alignment checked and placed in good order.

Screw shafts & propellers

Port screw shaft found ^{liner} scored in way of lignum vitae now skimmed and stern tube rewooded.

Starboard screw shaft stern tube bottom lignum vitae renewed.

Propellers found bent and lightly broken on top blades now satisfactory repaired.

Port and starboard main circulating pumps

Casings renewed. shafts and bushes found worn renewed.

Piston rods and slide valve spindles found scored skimmed up.

Crankshafts lightly skimmed up.

General service pumps:

Piston rods and slide valve spindles found scored skimmed up

Sanitary pump

Piston rods, valves and sets skimmed up.

Fire pump:

Hydraulic cylinders found scored bored out - hydraulic piston rods renewed. Valves and sets, suction and delivery skimmed up.

Feed pumps:

Piston rods, slide valve spindles skimmed up. Flame slide valve chest skimmed up. Valves and sets, suction and delivery skimmed up.

Oil fuel pressure pumps

Piston rods, slide valve spindles, valves and sets, suction and delivery skimmed up.

Oil fuel transfer pump (boiler room)

Slide valve spindles found waxed renewed.



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S/S LIVERPOOLoil fuel transfer pump (forward)

suction and delivery valves skimmed up.

Port and starboard stripping pumps

Piston rods skimmed up. suction and delivery valves skimmed up.

Port forward cargo pump

HP-LP steam cylinders found scored; the HP skimmed up and the LP skimmed up and liner fitted.

Piston rods, suction and delivery valves skimmed up.

Port after cargo pump

Hydraulic piston rods, suction and delivery valves skimmed up.

Starboard forward cargo pump

Hydraulic cylinders found scored bored out and new pistons fitted. Hydraulic piston rods, suction and delivery valves skimmed up.

Starboard after cargo pump

L.P. steam and hydraulic piston rods found scored bored out.

Hydraulic piston rods, suction and delivery valves skimmed up.

Engine forward and after F.D. fans

crank shafts lightly scored skimmed up. Crosshead gudgeon pins found worn renewed. Piston rods and slide valve spindles skimmed up.

Starboard generator steam engine

Crank shaft found crack in way of crank web renewed.

Piston rod skimmed up, slide valve spindle found worn renewed.

Dynamo removed to shop, overhauled and refitted in order.

Centre generator steam engine

Crank shaft lightly scored skimmed up. Crosshead gudgeon pin found worn renewed. Piston rod skimmed up, slide valve spindle found worn renewed.

Dynamo removed to shop, overhauled and refitted in order.

Port generator steam engine

Dynamo removed to shop, overhauled and refitted in order.

On completion the Starboard, Centre and Port generators examined under working condition and found satisfactory.

Starboard main condenser

25 tubes found leaking renewed. After cover found wasted renewed.

Port main condenser

23 tubes found leaking renewed.

Windlass

Piston rods skimmed up, slide valve spindle found worn renewed.

Cable lifter bushes found slack renewed and shaft skimmed up.

Steering engine

Piston rods and slide valve spindle found scored skimmed up.

1-FEB 1954

Rpt. 9a

(11. H sheet)

Port of

Continuation of Report No. 19749 dated

2/1/54

on the

S/S LIVERPOOLHarboard boiler

925 smoke tubes and 26 combustion chamber screw stays found wasted renewed. Some caulking in combustion chambers carried out.

Centre boiler

158 smoke tubes, 36 combustion chamber screw stays found wasted renewed. Some caulking in combustion chambers carried out.

Port boiler

194 smoke tubes and 55 combustion chamber screw stays found wasted renewed. Some caulking in combustion chambers carried out.

All boilers some mounting securing studs found wasted now renewed.

Other minor repair satisfactory carried out.

Electrical installation

All electrical cables in tube in engine and boiler room found wasted now renewed.

Vessel special examined in compliance with the requirement contained in Circular N° 1944 the electrical installation in pump room, lower bridge houses and the forward hold immediately the cargo oil tanks (ex oil bunkers) found in accordance with the present rules.

NOW DONE FOR ALTERATION

The existing FOAMITE fire extinguishing system fitted in boiler room which was out of use has now been replaced by a steam smothering installation with control from deck in accordance with the requirements.

At the Owners desire at this time the deep tanks of the forward end presently used for oil fuel are now intended for carrying petroleum only and consequently the piping arrangement has now been altered as follows:

- a) The existing oil fuel transfer pump at the forward end is now to be used only for bilge service for the space forward the cargo tanks and its suction from the old oil fuel deep tanks removed.
- b) The existing oil fuel transfer pipes line on deck has been permanently detached from the old oil fuel deep tanks placed forward.

New summer tanks have now been built and each one is provided with drain valves fitted with control from the deck and in addition ^{with} a new cargo pipes line connected.

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S/S LIVERPOOL

to the existing cargo line -

further each tank is provided with a valve connected to the vapour line led up the mast.

a steam fire extinguishing installation has now been fitted on the lumbar tanks.

NOW DONE FOR DAMAGE

Damage stated to have been sustained for grounding, date and place not stated.

the following machinery parts examined in account damage:

main engines port & starboard

HP. IP. LP crosshead slipper shoes found white metal worn, scored & broken unexchanged.

Thrust shaft found lightly scored in way of rings skimmed up.

Thrust collar lightly scored skimmed up and thickness adjusted.

Boilers: chimed and mountings opened up -

scru shafts & propellers

Port scru shaft and starboard scru shaft drawn in, sea connections.

Port scru shaft found ^{lined} scored in way of liquor vitae worn skimmed up and stem tube renewed.

Starboard scru shaft stem tube bottom liquor vitae renewed.

Propellers found bent and lightly broken on top blades now satisfactory repaired.

Starboard main condenser:

25 tubes found leaking renewed.

Port main condenser:

23 tubes found leaking renewed.

Port and starboard main circulating pumps

Shafts and bushes found worn renewed

auxiliary pump attached main engine

Rams found scored skimmed up. suction and delivery valves skimmed up.

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