

COPY.

Lloyd's Register of Shipping.



Port Baltimore, Maryland

September 30th, 1943

This is to Certify that

J. C. Buchanan and Wm. C. Cowin

the undersigned Surveyor to this Society did at the request of
the Owners' Representative examine the Twin Screw Steamer

"LEONARDO DA VINCI"

7515 tons gross of Mombassa, whilst afloat and in dry dock at the plant of
the Maryland Dry Dock Company, Baltimore, Maryland, for the purpose of
carrying out a Special Survey No. 3 with a view to the vessel being classed
with this Society.

On 8th March, 1943 and subsequent dates, the hull, machinery
and boilers were opened up, examined, repairs carried out as necessary,
all parts closed up, tried under working conditions and found satisfactory.

The survey in detail is as follows:-

Vessel placed in dry dock, bottom and rudder (lifted), cleaned
examined and recoated.

Holds, peaks, tween decks, engine and boiler spaces examined,
sealed and coated where necessary.

All close ceiling and cargo battens removed, shell plating examined
in way of side lights, surfaces sealed and coated.

Double bottom tanks, deep tanks and bunkers, sewage collection
tanks and peak tanks examined internally and afterwards tested and ceiling
relaid.

Anchors and cables (ranged) examined, also chain locker decks,
masts (wedging removed), rigging and general equipment, hatch coamings,
covers and supports, ventilators, casings, steering gear, windlass, pumps,
W.T. doors and air and sounding pipes examined.

Propellers, stern bushes and outside fastenings examined.

Port and Starboard tailshafts drawn, examined, stern bush bearings
rewooded.

This Certificate is issued upon the terms of the Rules and Regulations of the Society, which provide that:-

"While the Committees of the Society use their best endeavours to ensure that the functions of the Society are properly
executed, it is to be understood that neither the Society nor any Member of any of its Committees is under any circumstances
whatever to be held responsible for any inaccuracy in any report or certificate issued by the Society or its Surveyors, or in
any entry in the Register Book or other publication of the Society, or for any error of judgment, default or negligence of
any of its Committees or any Member thereof, or the Surveyors, or other Officers or Agents of the Society."

Port and Starboard main propulsion turbines and gearing with their couplings, shafts and bearings examined with the main thrusts and line shafting.

Main condensers examined and tested. All auxiliary machinery and pumps with the valves, pipes and strainers of the pumping arrangements examined. Windlass and steering engines examined.

The four main water tube boilers and the two Scotch Auxiliary boilers examined throughout and tested with hydraulic pressure, 350 lbs., afterwards examined under steam and safety valves adjusted to working pressure 200 lbs. The oil fuel burning installation and controls and fire extinguishing apparatus examined. Steam pipes annealed and examined under hydrostatic pressure of 400 lbs. The electrical equipment examined and meggered and tested. All machinery placed in good and safe working condition.

Repairs (Wear and Tear):-

Wood sheathing on exposed decks repaired locally and caulking and paying overhauled.

Sixty-seven hatch covers on weather deck renewed, and defective covers in tween deck renewed as necessary.

Windlass overhauled and cable lifters (P & S) built up by electric welding.

Steering gear and telemotor system opened up and overhauled.

Wood plugs and canvas covers supplied for all vent coamings.

Mast rigging overhauled and part renewed.

Foremast - topmast back stays and two shrouds (p.s.) renewed.

Mainmast - two topmast stays and lower back stays renewed.

All shackles overhauled.

130 fathoms, 5" circ. towline and 120 fathoms, 5" circ. stream wire supplied.

Crown pin in Starboard bow anchor renewed.

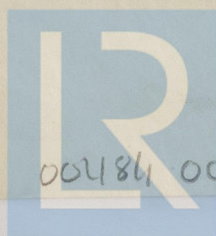
Steel companionway fitted around stairway on "C" deck leading to crew space; steel coaming, 24" high, fitted around hatchway to chain locker on "C" deck and on same deck steel door fitted to baggage room entrance.

All port lights and deadlights throughout overhauled, broken glasses and rubber jointing renewed as necessary, and all port lights in lower tween deck spaces permanently blanked off with welded steel plates.

All ship side discharge pipes fitted with screw-down valves with spindles extending to "C" or bulkhead deck, sanitary piping overhauled and part renewed as necessary.

Present trunked hatchways between "D" and "E" decks at Nos. 3 and 4 hatchways removed, and arrangements made as vessel originally built, pillars and girders refitted as necessary.

Hatchways fitted with beams and covers.



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All cargo derricks tested.

Life boats repaired or renewed as necessary.

Cargo battens and cleats also air and sounding pipes repaired or renewed as necessary.

All six main propulsion turbines removed, blading renewed as necessary, journals and thrusts reconditioned, bearings reinstalled.

Rotors dynamically balanced, carbon and labyrinth packing reconditioned all closed in good order and spin tested.

All six (3p and 3s) main turbines flexible couplings dressed and refitted, Port M. P. coupling renewed, Port H.P., Starboard H.P. and L.P. gear and claws renewed, also Port and Starboard L. P. rotor claws renewed.

All pinion and wheel teeth dressed, contacts checked and realigned as necessary, Port and Starboard pinion shafts journals true and bearings reinstalled.

Main thrusts Port and Starboard cleaned and adjusted.

Port and Starboard main condensers cleaned, several tubes in each tested for wear and found good. Port circulating inlet elbow expansion casting renewed.

Pumping arrangements tested, after suction in forward boiler room altered for accessibility, made with straight tail pipe.

Port and Starboard oil coolers for M. E. examined and tested.

All pumps including 2 main circulating with their engines, 2 dual air, 4 lub oil service, 4 main feed and 1 harbour feed, ballast, 2 general service, 2 attached bilge, 1 emergency bilge, 4 F. O. service, 1 F. O. transfer pumps opened, overhauled, necessary parts renewed, closed in good working order. Forward and after boiler fans and their engines placed in good working order, also 2 F. W. pumps, evaporator feed and brine pumps.

Evaporator coils annealed and together with shell placed in good order and tested. Auxiliary condenser examined, tested, its condensate and circulating pumps examined and placed in good order. Refrigerator installation placed in good order, now for domestic purposes only. Feed water heaters and fuel oil heaters cleaned and tested. External pipe of boiler blow down cocks renewed, one through No. 58 and 1 through No. 8 p d.b. tanks.

W. T. Boilers:- All 4 water tube boilers fitted with feed water regulators, all water tubes renewed (Lloyds 632 F.O. 27-3-45) inboard boxes of air heater tubes renewed, oil burners and pressure pipes renewed, soot blowers renewed, brick work and insulation renewed.

Several leaking rivets in steam and water drums renewed, leaking seams caulked.

Several rivets and approximately 3' welding cut out on water drums to examine plating and seams, several seams at drum ends found cracked between rivet holes, repaired as follows:-

Forward Port Boiler:- Inboard water drum forward end of bottom plate cracked through line of rivets of head joint, defective portion removed, new portion attached with welded butt, reinforced with backing strip, the repair normalized.

Forward Starboard Boiler:- Inboard water drum bottom plate cracked between eight rivets at forward head seam, now veed and welded, rivets

renewed and joint reinforced with fillet weld on inside edge of head.

After Port W. T. Boiler:- Inboard water drum bottom shell plate cracked between rivets of forward head joint, cracks veed and welded, rivets in way renewed and joint reinforced with fillet weld on inside edge of head.

After Starboard W. T. Boiler:- Inboard water drum bottom shell plate cracked between rivets of after head joints, cracks veed and welded, joint reinforced with doubling plate.

The four W. T. Boilers tested hydraulically 350 lbs. and made tight.

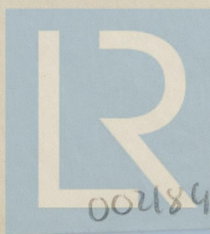
Two Scotch Auxiliary Boilers:- All plain smoke tubes and air heater tubes renewed. 23 c.c. stays (12 p, 11 s) renewed and a large amount of caulking done on all four furnaces and c. c. seams.

Port and Starboard safety valves renewed, mounting a' shell studs renewed where necessary. Combined main and auxiliary stop valve chest renewed on port boiler.

Electrical Equipment:- The four main shunt wound turbine driven dynamos overhauled, commutators machined. Starboard forward dynamo armature rewound and insulation of commutator renewed and tested. Turbines opened, examined, port aft casing 1st row blading renewed, journals trued, bearings reconditioned, governors placed in good working condition. One reconditioned auxiliary compound wound turbine driven 50 K.W. dynamo installed in workshop in E. R. "D" deck s.s. tested, examined under full working conditions. Emergency dynamo replaced with a reconditioned 35 K. W. compound wound dynamo driven by a 4 cylinder Diesel Engine, examined and tested under full working conditions. Main switchboard renewed to Rule Requirements. Reverse current, overload and emergency governor trips tested. Two auxiliary switch boards renewed, one for Nav. officers accommodation, a large number of lighting circuits renewed including E. R., Nav., 2nd class accommodation. All circuits tested and repaired or renewed as necessary.

J. C. Buchanan *Wm. C. Cowin*

(Signed) J. C. Buchanan and Wm. C. Cowin
Surveyors to Lloyd's Register of Shipping



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00284-00293-00284