

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

Date of writing Report *Nov 21* When handed in at Local Office

(Received at London Office

MON. 120

No. in Reg. Book. Survey held at *Port Said & Suva.*Date, First Survey *May 1920* Last Survey *Dec. 1921*Tonnage { Gross *3475*
Net *2138*Vessel built at *Rostock*By whom *Mt. Geo. Neptune*When *1912*Registered Horse Power *247*Engines made at *"*By whom *"*When *"*No. of Main Boilers *✓*Boilers, when made (Main) *1912*(Donkey) *✓*No. of Donkey Boilers *✓*Owners *J. Alexandros & Co.*Port *Argostoli* VoyageSteam Pressure in Main Boilers *✓*

If Surveyed Afloat or in Dry Dock

(State name of Dock.)

in Donkey Boilers *✓*

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.

Year and month when surveyed.

Machinery and Boiler Surveys (including date of N.E., if any)

Last Report No. *Port*

Particulars of Examination and Repairs (if any)

Periodical Surveys, when held, must be reported in detail and serially 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.*

Do. " Donkey " " " *none.*

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? *✓*

Did the Surveyor examine the Safety Valves of the Main Boiler? *yes.*

To what pressure were they afterwards adjusted under steam? *192 lbs per sq. in.*

Did the Surveyor examine the Safety Valves of Donkey Boiler? *✓*

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 Boiler? *✓*

Did the Surveyor examine the drain plugs of the Main Boilers? *✓*

and of the Donkey Boiler? *✓*

Did the Surveyor examine all the mountings of the Main Boilers? *yes.*

and of the Donkey Boiler? *✓*

Has screw shaft now been drawn and examined? *yes.* Is it fitted with continuous liner? *yes* or two liners? *✓* or is it without liners? *✓*

Has shaft now been changed? *No* If so, state reasons *✓*

Is the shaft now fitted new? *✓* Has it a continuous liner? *✓* or two liners? *✓* or is it without liners? *✓*

State the distance between lignum vitae of stern bush and top of after bearing of screw shaft? *Now lined up.*

If the Survey is not complete state what arrangements have been made for its completion and what remains to be done?

Vessel placed in dry dock, all sea cocks & valves opened up, examined, & put in good order.

All cylinders, pistons, slide valves, condenser, shafting, purifiers, & the general arrangement of cocks, pipes, bilge & tank suction, roses, etc examined & put in good condition.

The main boilers, with their safety valves, doors & mountings, examined internally & externally, & put in good condition, afterwards the safety valves adjusted under steam to the pressure stated above.

Repairs now carried out due to damage by shot, shell, bombs, and being sunk.

General Observations, Opinion, and Recommendation:— This machinery and boilers are

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, B.S. 9, 11, E.A.M.S. 9, 11, or L.T.C. 9, 11, 140 lb., F.D., &c.)

in good and efficient condition and in our opinion eligible to have the record of *L.M.C. 12.20.* in the Register Book.

Survey Fee (per Section 28) *£125-0-0*Special Damage or Repair Fee (if any) (per Section 28.) *£25-0-0*Travelling Expenses (if chargeable) *£25-0-0*

Fees applied for

19

Received by me,

19

Committee's Minute

FRI. JUN. 16 1922

FRI. NOV. 3 1922

Assigned

Engineer Surveyor to Lloyd's Register of Shipping

W454-0279 C116

Lloyd's Register Foundation

Main engine repairs.

Port of H.P. Cylinder leg, built up by electric welding.
Cylinder cover built up at one stud hole by electric welding.
I.P. Cylinder renewed, marked, Lloyd's test, No 105, 24.11.20.
Mal - J.E. old cover was used.

L.P. cylinder renewed, marked Lloyd's test, No 105, 24.11.20
Mal. J.E. original cover used,
L.P. Valve & casing cover renewed.

H.P., M.P., & L.P. piston rods, skimmed in lathe, & metallic
packing renewed in H.P. & M.P.

All piston cleaned & adjusted.

L.P. Valve spindle bottom end socket renewed & guide bracket
bracket renewed.

Crank shaft, taken out in one piece (three sections) & journals
skimmed in lathe 1-in/100.

Main bearings adjusted, coupling bolts & holding down bolts tightened.

Thrust shaft put in lathe & skimmed, & shoes adjusted.

Tunnel shafting lifted & all bearings cleaned & adjusted.

Tail shaft, propeller taken off, shaft drawn, lignum vitae
renewed.

All sea cocks & valves overhauled.

Turning & reversing gear. General overhaul, new trough for worm.

Bracket on engine bed renewed.

Main Engine stop valve, valve, spindle, lever bracket renewed.

Exhaust piping erected & partly renewed.

Valve on L.P. receiver overhauled.

Guide adjusted.

Crosshead Brass, adjusted.

M.P. Front & back column renewed.

All connecting rods tested in lathe.

Main Condenser (steel) All tubes drawn & cleaned & Condenser
afterwards tested.

Pump levers tested & bearings adjusted.

Air pump, general overhaul, tail valve renewed, air vessel
repaired by welding.

Bilge pump, general overhaul, valves renewed, air vessel welded.

Feed pump, general overhaul, valves & seats renewed.

Circulating pump, " " all valves renewed. All pipes renewed.

Sanitary Pump. Pump box renewed & original valve box fitted to it,
rod straightened.

Drain cocks & connections on main cylinder, renewed.

Starting Valve chest. Valves & pipes renewed.

Steam & exhaust piping of reversing engine renewed.

Main Steam pipes partly renewed, & different leads made
as the superheated steam was cut out. See drawing sent.

Drain cocks fitted to pipes. Pipes tested in shop & after motion to 385 lbs.

Main steam distribution chests overhauled. New cast steel main shut
off valve supplied and fitted to port side distribution box.
Auxiliary steam pipes. Valves in distribution box overhauled,
several pipes renewed, & tested.

Auxiliary exhaust piping. All piping of iron & examined. One
valve for after winches renewed, remainder of valves examined.

Pressure gauges. Renewed throughout.

Bilge & ballast tank, valves & pipes, all valves examined, several
pipes renewed in engine room. Leads & diameters similar to
drawing sent by builders. Rose boxes fitted for bilge suction.

Drain cocks. All renewed on cylinders, pipes renewed.

Engine room, gratings, rails, ladders, guards, assembled and
refitted.

Floor plates & bearers (angles) overhauled.

Water tight doors, Door to tunnel overhauled. Door to
lower bunker overhauled, hand wheel & bracket renewed.

Boilers. Both boilers jacked up, bearings examined & new
lead fitted, Collision checks adjusted, tie plates, side beams,
holding down screws, all refitted.

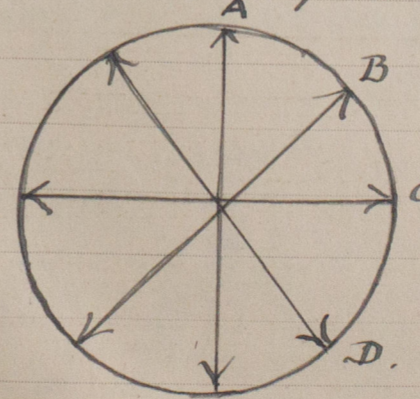
Starboard boiler. All plain tubes drawn & cleaned. Tube
plates thoroughly cleaned & tubes reworked. 24 rivets renewed
at circumferential seam, where plate was distorted by bombs.

10 tube plates renewed & contacts with boiler made good.
Internal main feed pipe renewed. Internal main steam pipe
taken off for cleaning. Two fronts renewed for forced draught.

One front repaired. All air casings dismantled & renewed where
required. Air heater tubes taken out, plates partly renewed, &
tubes renewed. Smoke box door taken off, painted & refitted.

Shell lagged with asbestos mats, covered with galvanized
sheeting. Back end of boiler lagged with asbestos non-
conducting material & covered with wire netting.

Port Furnace, & back ends were drilled for thickness &
those sent to London. The following are readings of the
furnaces taken by me. Wire taken at inner corrugation.



Starboard furnace. root mouth. A 39 1/2"

" B. 39 3/8"

C. 39 1/2"

D. 39 5/8"

Centre furnace Corrugation A 39 1/2"

B. 39 1/2"

C. 39 3/4"

D. 39 5/8"

Port furnace Inner Corrugation A 39 1/2"

B. 39 3/8"

C. 39 1/2"

D. 39 3/8"

Centre furnace	next mouth	A $39\frac{5}{16}$ "	Port furnace	A $39\frac{7}{16}$ "
		B $39\frac{7}{16}$ "		B $39\frac{7}{16}$ "
		C $39\frac{7}{8}$ "		C $39\frac{7}{8}$ "
		D $39\frac{7}{16}$ "		D $39\frac{7}{16}$ "
Centre corrugation		A $39\frac{1}{8}$ "		A $39\frac{7}{16}$ "
		B $39\frac{7}{16}$ "		B $39\frac{7}{16}$ "
		C $39\frac{7}{8}$ "		C $39\frac{7}{8}$ "
		D $39\frac{7}{8}$ "		D $39\frac{7}{8}$ "
Inner corrugation		A $39\frac{7}{16}$ "		A $39\frac{7}{16}$ "
		B $39\frac{7}{16}$ "		B $39\frac{7}{16}$ "
		C $39\frac{7}{8}$ "		C $39\frac{7}{8}$ "
		D $39\frac{7}{16}$ "		D $39\frac{7}{16}$ "

Shovel studs were removed for cast iron protecting pieces at knuckle of saddle backs.

The boiler was tested to one & a half times the working pressure, viz 288 lbs per sq inch, all being tight & the furnaces showed practically no deflection.

The safety valves were afterwards floated under steam pressure to 192 lbs per sq in. Washers being Ford $\frac{1}{32}$ " AFT $\frac{1}{32}$ "

Port boiler. All plain tubes drawn and after cleaning the boiler internally, were re-erected, 33 being removed, 24 rivets in circumferential seam removed, when plating was dented by bombs, Main & auxiliary internal feed pipes removed, 10 fire slots removed & contacts made good, Internal main steam pipe removed for clearing, 3 furnace fronts for forced draught repaired. Heat exchanger tubes for forced draught all removed. Forced draught casings all dismantled & removed where necessary. Smoke box doors taken off & faired. Holes drilled for thickness of furnaces & back ends and those sent to London. Boiler shell lagged with asbestos mats, & covered with galvanized sheeting. Boiler back cleaved with an asbestos non conducting material and covered over with wire netting. Furnace readings were taken vertically & horizontally & were.

		Starboard furnace	Centre furnace	Port furnace.
Vertically	} mouth	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "
Horizontally		$39\frac{7}{16}$ "	$39\frac{7}{16}$ "	$39\frac{7}{8}$ "
V.	} centre	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "
H		$39\frac{7}{8}$ "	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "
V	} inner.	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "	$39\frac{7}{16}$ "
H		$39\frac{7}{8}$ "	$39\frac{7}{8}$ "	$39\frac{7}{8}$ "

The boiler was tested to 288 lbs per sq in., & valves floated under steam at 192 lbs per sq inch. Washers being F $\frac{7}{8}$ " A. 2". On test there were no deflection on the wing furnaces. Centre furnace came down $\frac{1}{4}$ ", but went back on pressure being released.

Boiler mountings. All put in good condition. 3 Safety Valve springs renewed, one dome renewed. Part waste steam pipe renewed. Easing gear made workable. Gauge glass water fittings renewed complete with cocks, piping etc. Three nozzles fitted to diamond blowers. Stop valve spindles extended to top. All the system of superheated steam dismantled.

Main fuel pipes. Practically renewed throughout, tested to $2\frac{1}{2}$ times the working pressure, also heater coils tested similar, bye pass valves joined up for examination.

Electric Engine. Steam piping renewed, exhaust piping renewed engine adjusted. Wound rewired throughout, armature & commutator renewed.

Fan engine. General overhaul.

Ballast pump. Rings renewed at water end, valve spindles renewed, rings renewed at steam end.

General service pump. rings fitted water end, valve spindles renewed, Bracket renewed, all suction & delivery valves overhauled.

Auxiliary fuel pipes, greatly renewed and tested.

Auxiliary steam distribution box put in order

Auxiliary Exhaust " " " " " "

Fresh water pump. General overhaul.

Evaporation. Examined, vapour outlet T piece renewed, also pipes to same, several pipes renewed.

Ash hoist, General overhaul, steam & exhaust pipes renewed.

Stokehold floor plates, new bearings fitted on screen bulkhead, & floor plates faired & fixed.

Guards round boilers, faired or renewed as required

Ladders & platforms made for side gauge glass fittings.

Steering gear. All broken and missing gear made good as follows:— 2 connecting rods, 2 eccentric rods, shears & straps, crank shaft with worm renewed, 2 pair crosshead brams, Bracket & wheel for control gear renewed, & all remainder overhauled and put in good condition.

Steering gear control from bridge, practically all renewed, including rods, bowl wheel etc.

Winches All winches taken ashore & thoroughly overhauled, winch at bunker hatch had new bed plate & frame.

Windows. General overhaul, renewing main bearing brams, crank pin brams brake blocks, etc.

Injectors for boiler feed, overhauled

Downton bilge pump. Supplied & fitted to draw from distribution chest in engine room from all bilges.

Water service pipes & cocks overhauled & put in condition.