

No. 10415

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

(Received at London Office)

Writing Report 24-3-1941 when handed in at Local Office 31st March 1941. Port of MANCHESTER.

Survey held at Manchester

Date, First Survey 28/2/40 Last Survey 7/2/41 19

(No. of Visits 54.)

on the Machinery of the Wood, Iron or Steel ½ "GRACIA"

Gross	5642	Vessel built at	Graeck	By whom	Scott's S.B. + E. Co. Ltd.	Year.	Month.
Net	3537	Engines made at	-do-	By whom	-do-	When	1921 - 6
er	736	Boilers, when made (Main)	1921	(Donkey)	-	When	1921
n Boilers	4	Owners	Donaldson South American Line Ltd.	Owners' Address	(if not already recorded in Appendix to Register Book.)		
key Boilers	-	Managers	Donaldson Bros. & Black Ltd.	Port	Glasgow	Voyage	
ssure	200lb/ft ²	Surveyed Afloat	in Dry Dock Manchester D.D.C. M.	Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).			
Boilers	-	(state name of Dock.)					
ay Boilers	-						

Report No. Port

Particulars of Examination and Repairs (if any) Damage

Surveys, when held, must be reported in detail and serially in the terms of the Rules. 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 being detailed in the body of the report, should be briefly summarised at the end of the report. State also the initials of any letters respecting this case.

In cases where the Surveyor has not made a special damage report he is required to state whether he

had his services for this purpose, and why they were declined Yes, not required

Damage report made by anyone else? If so, by whom? Underwriters Surveyor

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

CHARACTER. ☒ for Special Survey Data of last Survey and of Periodical Surveys.	Years since last survey expired.	Machinery and Boiler Surveys (including date of N.B., if any).
+100 Al. 1-40		+L.M.C
SS Gl. N°3. 4-34	MS 10-37	BS 1-40
IS Gl. N°1. 38	CL 2-38	
+LLOYD'S RMC 11-39		
Carrying Oil Fuel F.P. above 150°F in deck tank app. Fitted for Oil Fuel 6-21. F.P. above 150°F.		

not done, state for what reasons?

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?

date of internal examination of each boiler. Aft. 19/10/40. S. 25/10/40. C. 6/11/40. P. 12/11/40

Present condition of funnel

good

Surveyor examine the Safety Valves of the Main Boiler?

Yes

To what pressure were they afterwards adjusted under steam?

200lb/ft²

Surveyor examine the Safety Valves of Donkey Boiler?

✓

To what pressure were they afterwards adjusted under steam?

Surveyor examine all the manholes, doors and their fastenings of the Main Boilers?

✓

, and of the Donkey Boilers?

Surveyor examine the drain plugs of the Main Boilers?

✓

, and of the Donkey Boilers?

Surveyor examine all the mountings of the Main Boilers?

✓

, and of the Donkey Boilers?

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?

Shaft now been changed? No If so, state reasons

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?

of examination of Screw Shaft 3/9/40

State the distance between lignum vitæ or bearing metal of stern bush and top of after bearing of screw shaft Close ft.

inc parts, when referred to by numbers, should be counted from forward.

Is electric light and/or power fitted? Yes

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

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

age stated due to enemy action

DONE. Vessel placed in dry dock. All main & auxiliary machinery in engine rooms, also intermediate shafting, working & spare shafts, removed ashore, stripped & examined. Main propelling turbines & gears were sent to Messrs. Metropolitan-Vickers Electrical Co. Manchester for repair.

All steam, feed, bilge, ballast & oil fuel piping in engine & boiler spaces removed ashore together with all valve chocks, branch & bulkhead pieces, the remainder being examined in place.

All sea suction & overboard discharge cocks & valves removed ashore & examined.

All four boilers cleaned & examined in place both internally & externally.

Final Observations, Opinion, and Recommendation:— This vessel's machinery is now in good condition & eligible, in our opinion, to remain as classed & to have fresh registrations of +L.M.C 2-41 & CL. 9/40.

Fee (per Section 20) £ : :

£ : :

Fees applied for

28-3-1941

ELK

Received by me,

19

Damage or Repair Fee (if any) £ : :

£ 63-0-0

(per Section 20)

60/-

ng expenses (if chargeable) £ : :

£ : :

WED 16 APR 1941

19

Mittee's Minute

+ LMC 2-41

Signed

Mr. H. W. K. Knowles,
Engineer Surveyor to Lloyd's Register of Shipping.
R. C. Clayton
Lloyd's Register
W. G. B. D. T. B. (114)

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

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

S/S "GRACIA"REPAIRS.

MAIN PROPELLING MACHINERY. The main engines (Turbines & Gears) were removed in their entirety to Messrs. Metropolitan-Vickers Electrical Co. Manchester, dismantled, examined & the following recommendations were made for repair & overhaul:-

H.P. TURBINE. One bottom half cylinder renewed.

The first ahead row of the velocity wheel - new blades fitted, also to the ahead velocity diaphragm segments.

The rotor of this turbine was slightly bent, but has been satisfactorily dealt with.

The rotor & casing blading throughout has been generally overhauled & an amount of miscellaneous small detail work satisfactorily carried out.

L.P. TURBINE. Complete new top & bottom half cylinders have been supplied.

One new turbine spripple fitted. New blades fitted to first row astern wheel.

New blades have also been fitted to the L.P. 1st & 2nd astern velocity diaphragm segments & this turbine generally overhauled & placed in satisfactory condition. A number of miscellaneous details have also been effected.

GEARCASE. The lower half of this case was fractured & has been repaired in accordance with a drawing now attached. Following this, extensive alignment operations were carried out on pinion & main wheel lines. New bearings were supplied throughout, plus spares, & all gears rebedded & new coupling bolts supplied.

GENERAL REPAIRS. The Aspinwall Safety Governors were reconditioned together with the steam strainers, relief valves & nozzle control valves. Oil sprayer pipes were pickled & cleaned, & new carbon gland rings were supplied where necessary.

The main engines & gears were afterwards despatched to Messrs. The Manchester Docks Co. for installation on board.

INTERMEDIATE & SCREW SHAFTING. Each length of intermediate shafting, also working & spare screwshafts, examined whilst in the lathe, found good & the coupling faces skinned to a good surface. Continuous liner of working screwshaft found somewhat scored, & has been skinned up. Continuous liner of spare screwshaft skinned up to the same size as on working shaft. Sternbrush removed from sterntube, examined & found good. Lignum vitae completely renewed. Sterntube hydraulically tested in place on board & found sound & tight. Coupling bolts renewed as required. Propeller examined & found in good order.

AUXILIARY MACHINERY. The following pumps were examined & repaired at Manchester D.D.C. Ltd:- Aux. Circ. Pump C.I. Suction valve chest renewed & generally overhauled.

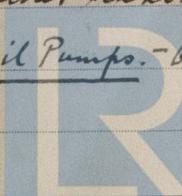
Gen. Service Pump. Generally overhauled.

Circ. Pump for Refrig. Machinery. Generally overhauled.

The following items were despatched to Messrs. G. J. Weir Ltd. & dealt with as necessary:- Two Main Feed Pumps & One Aux. Feed Pump, with their float tanks.

Dual Air Pump. Oil Fuel Transfer Pump. Two Lub. Oil Pumps. - both renewed.

Feed Heater - Cast iron bottom header renewed.



© 2020

Lloyd's Register
Foundation

S/S "GRACIA".

BOILERS. All four boilers cleaned, examined internally & externally, together with all mountings, etc.. The boilers were picked up & their stools removed for access to double-bottom tank repairs.

A few c.c. screw stays found broken in scattered positions & have been renewed. All seams & riveting carefully examined & riveting tested. Minor seam leakages made good by welding or caulking as required.

Main & Auxiliary stop valves & safety valves examined in place on the boilers.

C.I. Safety valve chest on Centre boiler found cracked & has been renewed. All other mountings removed from boilers owing to evidence of leakage at the joints to boiler shells. Studs renewed & facings made good as required, & all mountings replaced. All four boilers subsequently hydraulically tested to 250 lbs/sq" with all mountings in place & found sound & tight. Mountings generally overhauled. Safety valves of all four boilers subsequently adjusted to 200 lbs/sq".

STEERING ENGINE. - removed ashore, stripped & examined, together with its telemotors gears. (Vertical twin-cylinder steam engine). One cast iron column & the soleplate found fractured & have been renewed. Wormwheel spindle found worn & defective in keyways & has been renewed. All other parts reconditioned as required.

WINDLASS. - opened out, examined & generally reconditioned.

RE-ASSEMBLY. All shafting re-aligned & coupled up, special attention being given to the chocks under gearcase & turbines.

All auxiliary machinery satisfactorily fixed to their seatings.

All four boilers properly replaced on their stools after completion of double-bottom tank repairs. Collision chocks repaired as necessary & replaced.

Main & auxiliary steam & feed piping efficiently coupled up.

Steam smothering system satisfactorily replaced, tested & found in order.

Oil fuel burning pipelines & fittings replaced in accessible & well-lighted positions, examined under working conditions & found in order.

The whole of the machinery was subsequently tried under steam & all found in good condition.

Electrical Installation Repairs: Both dynamos taken ashore & overhauled. Engine room & wheelhouse rewired. Wiring & fittings throughout overhauled & put in satisfactory condition.

Additions:- Degaussing cables fitted run through tween decks in heavy gauge metal casing & through refrigerated spaces & bulkheads in heavy gauge pipe. Switchboard fitted in dynamo flat & control board in wheelhouse.

On Completion of work with the whole installation was examined, tried & tested for insulation resistance & found satisfactory.

R.C. Clayton

W398

© 2020

Lloyd's Register Foundation

S/S "GRACIA"

Both Oil Fuel Pumping & Heating Units were despatched to Messrs.

Walters Slipway & Eng. Co. Ltd. in their entirety for overhaul. The oil headers of both heaters were renewed & a number of other incidentals carried out.

The following items were despatched to Messrs. Thom & Lamont Ltd. for attention:-

Ballast Pump. - Cast Iron end casting renewed completely, & other parts reconditioned

Bilge Pump. - ditto - - - - -

Fresh Water Pump. - ditto - - - - -

The Main Circulating Pump & its engine were badly fractured in various places & were completely renewed by Messrs. Drysdale Ltd.

Main Condenser. - Stripped & examined. A large number of tubes found wasted in way of ferrules. All tubes renewed. One C.I. end door fractured & now renewed. Condenser tested on completion & found good.

Aux. Condenser. - Stripped & examined. Some tubes found defective in way of ferrules & renewed as required. Condenser subsequently tested & found sound & tight.

Lub. Oil Cooler. - Cast Iron casing fractured & now renewed. Other parts generally overhauled. Cooler tested on completion & found in order.

Feed Water Filter - badly fractured & renewed by Messrs. Hocking Ltd.

SEA INLET & OVERBOARD DISCHARGE VALVES & COCKS. All removed ashore & examined.

The following ^{Cast Iron} castings were found to be fractured & were renewed:-

Main Circulating Inlet Valve. Main Overboard Discharge Valve.

Ballast Inlet Valve. Aux. Circulating Inlet Valve. Bilge Injection Valve.

The remainder were generally overhauled. All were replaced with new studs through ship's side plating.

BALLAST, BILGE & OIL FUEL PIPING & FITTINGS. The whole of these systems examined,

those parts in the machinery spaces being removed ashore for this purpose.

A number of ^{Cast Iron} pipes & fittings found broken & have been renewed. Repairs effected to other items as required & the whole of these systems tested hydraulically after assembly on board with satisfactory results.

MAIN & AUX. STEAM PIPING IN MACHINERY SPACES. - All removed ashore, examined,

tested hydraulically to 2xW.P. & found & placed in good order.

MAIN & AUX. FEED PIPING. - All removed ashore, examined, tested hydraulically to 3xW.P.

& found & placed in good condition. All lengths annealed. One length renewed. Two cast iron distribution valve chests in Boiler Room, one each for Main & Aux. Feed, found fractured & now renewed. Both new valve chests satisfactorily tested by hydraulic pressure to 500lb/ft².

SEATINGS FOR MAIN & AUX. MACHINERY. - Removed for repairs to themselves & for access

to tank top repairs. For further particulars, see Hull Report. Riveting & fitting work tested after re-assembly on board & all found satisfactory.