

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

(Received at London Office NOV 15 1938)

3 NOV 1938

Date of writing Report 19 When handed in at Local Office 19 Port of LIVERPOOL

No. in Reg. Book. 70196 Survey held at Birkenhead Date, First Survey June 24th Last Survey Nov. 3rd 1938 (No. of Visits 54)

on the Machinery of the Wood, Iron or Steel TSMV ATHEL MONARCH

Tonnage { Gross 8995 Net 5350 Vessel built at Pt Glasgow By whom W. Hamilton & Co Ltd When 1928-4

Nominal Horse Power { 709 Engines made at Greenock By whom J. G. Kincaid & Co When 1928

No. of Main Boilers 1 Boilers, when made (Main) (Donkey) 1928

No. of Donkey Boilers 2 Owners United Molasses Co Ltd Owners' Address (if not already recorded in Appendix to Register Book.)

Steam Pressure in Main Boilers 1 Managers Port Liverpool Voyage

in Donkey Boilers 180 Surveyed Afloat & in Dry Dock Cammell Laird & Co (State name of Dock.)

Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

Last Report No. Port Damage, Alterations

Particulars of Examination and Repairs (if any) and C.S.

(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? Caribonne & Turner w/o Cammell Laird & Co

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

" " Donkey " " No

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

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) good

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? To what pressure were they afterwards adjusted under steam?

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? Yes

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

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? No

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

Has the shaft now fitted been previously used? Yes Has it a continuous liner? Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? Yes

State date of examination of Screw Shaft 14.9.38 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft Good fit.

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

If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? As stated.

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

If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done On account of DAMAGE

stated to have been caused by (1) Heavy weather on various dates prior to 18 March 1938

(see deferred reports) and (2) Heavy weather on various dates 18 March & 13 June 1938

(3) Collision with City of Edinburgh 27 June 1938 in Cammell Laird's Basin, (4) Fire Damage

in accommodation whilst in Cammell Laird's Basin on 3rd Sept 1938.

Now done: Vessel in Dry Dock: the propellers, sea connections & fastenings

examined. Both screw shafts drawn & examined, further examined in lathe,

liners skimmed up. Stern bushes rewooded. Stern glands and neck bushes

renewed (G.M.) Starboard rope guard renewed. Starboard propeller pitch verified.

On account of cracks in bedplates, the Port & Starboard main engines

dismantled and lifted ashore. CONTINUED

General Observations, Opinion, and Recommendation:— The Machinery of this Vessel is

(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, B.&M.S. 9.11, & L.M.C. 9.11, or

in good condition and in my opinion eligible to remain as classed, with

fresh record of L.M.C. CS 2.36 11.38 now. without special condition regarding main engine bedplates.

Note: Both Screw shafts (CL) seen 9.38

Survey Fee (per Section 29) Part CS 10.10.0 Fees applied for

Special Damage or Repair Fee (if any) 10.10.0 10 NOV 1938

As damage 36.16.0 Received by me 3/12 1938

Travelling expenses (if chargeable) 4.4.0 15 NOV 1938

Committee's Minute C.S. without special conditions.

Assigned 11.38

Both S 9.38.

CHARACTER. X for Special Survey Date of last Survey and of Periodical Surveys.	Years and months elapsed.	Machinery and Boiler Surveys (including date of N.B., if any).
+100 A1 3.38		+LMC
SS Rdt 7: 2-36		CS 2.36
		10.36
		DBS 3.38
		TS CL
		PN 2.36
		S 10.36
		Oil Eng.

SEE LIMITATION LIST.
OIL ENGINE
CONTINUOUS SURVEY

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

Present condition of funnel(s) good

To what pressure were they afterwards adjusted under steam?

To what pressure were they afterwards adjusted under steam?

, and of the Donkey Boilers? Yes

, and of the Donkey Boilers? Yes

, and of the Donkey Boilers?

Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? Yes

Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? Good fit.

Is electric light and power fitted? Yes

As stated.

As stated

On account of DAMAGE

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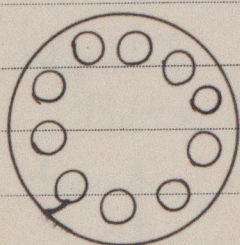
renewed (G.M.) Starboard rope guard renewed. Starboard propeller pitch verified.

ATHEL MONARCH

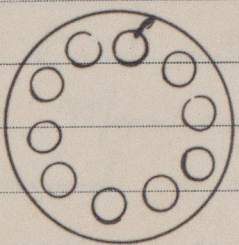
Main engine settings satisfactorily repaired (see Hull report).

New main engine bedplates of improved design lined up in shop, and main bearings fitted after remetalting.

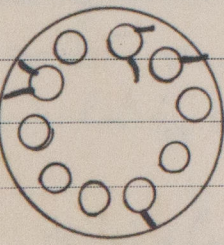
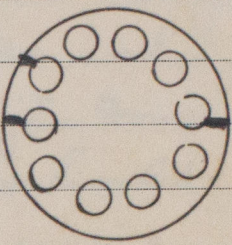
Crankshafts examined and the four sections sent to J.G. Kincaid of Greenock for repair. New journals have been fitted to both centre couplings of Port & Starboard engines, & the after coupling of Port shaft, on account of hammering of coupling faces, cracks in way of bolt holes. (as shown in sketches) and distortion of enlarged bolt holes:



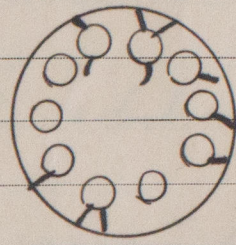
PORT FWD CRANK.
CENTRE COUP.



PORT AFT CRANK.
AFT COUP. CENTRE COUP.



STAR AFT
CEN. COUP.



STAR. FWD. CRANK.
CEN COUP.

LOOKING ON COUPLING FACES.

Subsequently whilst the shafts were at Greenock the Nos 3 & 6 PORT Journals, and Nos 2, 3 & 6 STAR. journals, Port No 5 crankpin, and Star. No 3 crankpin were also renewed.

[See blue print & forging report attached].

Marks on shafts: PORT. LR 8270 WGM 1.9.38.

STAR. LR 8270 WGM 14.9.38.

The crankshaft journals were all skimmed up true to diameter, afterwards satisfactorily bedded to new bedplates in the shop, and lined up on board after vessel afloat.

Intermediate & thrust & screwshafting lined up from bush, new bedplates placed on board and lined up, all new chocks and side chocks fitted and verified. Holding down bolts renewed as necessary (75% fitted bolts). Alignment afterwards checked & found good.

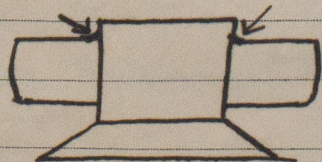
Examined all cylinders, liners, pistons and covers and crossheads.

Cyl. jackets removed & all cooling surfaces cleaned; pistons removed from rods, joint faces machined & undercut. Cooling surfaces cleaned. Cylinder cover cooling surfaces cleaned.

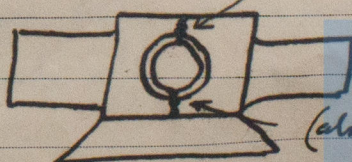
Port No 5 & Starb No 5 cyl. covers renewed on account of cracks in way of ind. tube passages.

Pistons Port No 1, 5 & 6 and Starb No 1 renewed on account of cracked crowns.

Crossheads examined, and P. No 2, 3 & 4 & S. No 4 crosshead blocks renewed on account of cracks as shown.



P. 2.3. S. 4.



P. No 4.

(also see Photograph)

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Bottom end bearings: Port η° 2 + 6 lower half, η° 4 upper
+ lower halves re-metalled.

Top end frames re-metalled: (lower halves only)

P η° 1 fwd. P. η° 2, 3 + 4 fwd + aft.

S. η° 1 fwd. S. η° 2, 3, 4, 5 + 6 fwd + aft.

All valves overhauled + renewed as necessary: all push
rod pins ground true, valve rocking lever bushes + push rod bushes
renewed. Port main compressor bedplate (cracked) also renewed.

Main engines afterwards satisfactorily erected on board and
adjusted, + tried under working conditions.

Port + Star. Main engine driven circulating water + lub. oil
pumps examined + overhauled.

Steering engine examined. Windlass examined
and repaired as under. Lub. oil coolers + condensers
cleaned + tested.

Aux. circulating pump impeller casing cracked: a new
casing, impeller + shaft fitted.

Repairs (in addition to above). Star. Thrust coupling. 2 coupling bolts renewed.

P. S. centre + aft crank shaft coupling holes reamed + bolts renewed.

Bridge gauges remarked.

Main bearing bolts, top + bottom end bolts + tie bolts annealed
+ sound.

Ridges ground off cyl. liners: new piston rings fitted.

Thrust block bearings re-metalled.

Sump plates cleaned + tested + refitted.

Kincaid oil cooler: 24 tubes renewed

Aux condenser: 10 tubes + both doors renewed.

Cir. discharge pipe from manoeuvring compressor re-welded

Port m. eng. cir. pump discharge valve renewed

Minor repairs effected.

ALTERATIONS.

"Cochranouloff" type fuel valves for mechanical injection
have now been fitted to the main engines, similar to those
fitted on TSMV 'Athulchief' (Liv. rpt. η° 110716) and 'Athulcrani'
(Liv. rpt. η° 111441).

The original fuel pumps are used to supply the fuel to the
new valves. Six new spare fuel valves + spare parts supplied.

The main compressors have not been removed but the
pistons have been hung up + conn. rods disconnected.

The blast air bottles have been removed ashore: the blast
air pipes disconnected + blanked off.

ATHEL MONARCH.

Two new motor driven F.W. circⁿ pumps fitted on a flat in ER & connected to the Archauloff valves.

The manoeuv. compressor air line now connected to the main air line. All fuel pipe lines to main engs. pickled & cleaned.

Electric wiring removed for access & afterwards replaced and renewed or altered as required (see below).

Drains from settling tanks now led from change cock to O.F. drain tank in lieu of bilge.

Balance weights removed from P & S No. 1 crossheads & forward balance weights on compressor cranks removed.

Machinery afterwards tried under working conditions & found satisfactory.

W & T Repairs:

Windlass (Part Overhaul, Part Damage): cylinders feet broken. Cylinders removed, feet pegged & welded, & rescrewed. Forged steel bands fitted over cylinder blocks. Now satisfactory.

Dynamo engines: new piston valves, & piston rings fitted to both engines.

New CI 4-way branch piece steam to dynamos tested & fitted.

Lub. oil pipes in P & S timing casings renewed.

New spare (oversize) coupling bolts supplied.

P & S. Main eng. circⁿ pumps fitted with new suction shut off valves.

Port propeller dished up (blades).

For'd pump room sea valve inlet lugs welded: new grating fitted.

All sea valve inlet gratings removed, inlets scaled & cleaned.

M. Eng. expansion sleeves skimmed up.

Port air reservoir scraped & painted internally.

Manoeuv. compressor intercoolers cleaned: tubes renewed as necessary.

Dyn. engine piston rod skimmed.

Donkey boilers: main & aux. check valves rejoined to shell.

Wasted plates built up.

Number of minor repairs effected.

For + LMC. CS.

Examined:-

Main engine bedplates renewed.

Port & Starboard all cylinders, pistons, covers, crossheads, bottom ends, main bearings, main compressor bottom ends & journals, thrust & intermediate shafting.

P. & S. Screwshafts. Propellers, fastenings & sea connections.

P & S main engine circulating & lub. oil pumps.

Large & small auxiliary compressors complete, with intercoolers.

Main compressors disconnected: blast bottles removed ashore.

(continued)

ATHEL MONARCHCS continued

Two new F.W. circulating pumps for Archambault valves.

Port & starb. starting air reservoirs internally.

Aux. condenser and its pump.

Both feed pumps.

Aux. circulating pump.

Ballast pump.

Bilge pump.

Dynamo engines.

Daily service tanks.

Engines under working conditions.

Cut Reed

Electrical Installation.

On account of Damage No 4 - Fire damage in accommodation aft whilst in Cammell Lairds Basin on 30th Sept 1938.

How Done:- The whole of the upper accommodation in the poop together with the deck lights reversed & new fittings, switches & fuse boards fitted.

On account of main engines having to be removed due to other damages

How Done:- The whole of the lighting circuits in the engine room reversed & new fittings & switches & 2 new fuse boards provided. New interior provided for separator motor fuse board.

Addition:- Two 1.2 H.P. valve cooling pump motors complete with switches, starters & cables installed.

On completion of above work same examined and tested for insulation resistance & found satisfactory.

L-C-Clayton

Noted

6/11/38

22-23

12/20/21
 12/21/21
 12/22/21
 12/23/21
 12/24/21
 12/25/21
 12/26/21
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 12/31/21

Handwritten: The Great Hall
of the University

[Faint handwritten text, likely bleed-through from the reverse side.]

[Faint handwritten notes, possibly bleed-through from the reverse side.]

Handwritten musical notation on a single staff, featuring various note values and rests.

1875

[Faint handwritten notes or signatures]

мо. АІНЕМОНАРСН

DIVERPOOL REPORT No. 111594

1 plan a photograph as artwork