

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

(Received at London Office -1 JAN 1937)

Date of writing Report: 17 Dec 1936 When handed in at Local Office: 17 Dec 1936 Port of New York

Survey held at Philadelphia Pa + New York Date, First Survey 21 Nov Last Survey 15 Dec 1936  
 (No. of Visits 16)

187 on the Machinery of the Wood, Iron or Steel S/S THODE FAGELUND

Gross 5757 Vessel built at Sunderland By whom Sir Jas Loring + Sons Ld When 1920  
 Net 3604 Engines made at Newcastle By whom Palmer Co Ld When 1920

390 Boilers, when made (Main) 1920 (Donkey)

2 Main Boilers Owners Wich Wilhelmson Owners' Address Port Tonsleg Voyage B. Aires  
 (if not already recorded in Appendix to Register Book.)

150 lbs Donkey Boilers Managers Per 100 S. PHILA.  
 Main Boilers Per 6 BROOKLYN N.Y.  
 Donkey Boilers Cross Dry Dock

If Surveyed Afloat or in Dry Dock (State name of Dock.)

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

CHARACTER for Special Survey and Date of last Survey and of Periodical Surveys.	Year and month when surveyed.	Machinery and Boiler Surveys (including date of N.B. if any).
<u>7100 A1 Shelter</u>		<u>7 LMCMS 3.32</u>
<u>dk with freeboard</u>		<u>BS 7.35</u>
<u>1636</u>		<u>TSC 9.34</u>
<u>35 Oct No 3 9.32</u>		<u>Putted for oil</u>
<u>Carrying oil fuel</u>		<u>fuel 19.50 F.P</u>
<u>F.P above 150° F</u>		<u>above 150° F</u>
<u>in DT</u>		

Particulars of Examination and Repairs (if any) BS + M.S.

Special Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly 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 details being detailed in the body of the report, should be briefly summarised at the end of the report. State also the names and initials of any letters respecting this case. S 17/11/36.

When the Surveyor has not made a special damage report he is required to state whether he has offered his services for this purpose, and why they were declined.

Has a damage report been made by anyone else? If so, by whom? PORT YES  
STARB M.B. EXAM IN AUG LAST & ALMOST CONTINUOUSLY UNDER STEAM AT THIS TIME

Has the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? NO

Has the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? NO

When was not done, state for what reasons? STARB M.B. EXAM IN AUG LAST & ALMOST CONTINUOUSLY UNDER STEAM AT THIS TIME

What parts of the Boilers could not be thus thoroughly examined? None

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? None

Latest date of internal examination of each boiler PORT 12/12/36 Present condition of funnel(s) GOOD

Has the Surveyor examine the Safety Valves of the Main Boiler? NO To what pressure were they afterwards adjusted under steam? 155 lbs

Has the Surveyor examine the Safety Valves of Donkey Boiler? NO To what pressure were they afterwards adjusted under steam? None

Has the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? NO and of the Donkey Boilers? None

Has the Surveyor examine the drain plugs of the Main Boilers? NO and of the Donkey Boiler? None

Has the Surveyor examine all the mountings of the Main Boilers? NO and of the Donkey Boiler? None

Has the 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? Yes

Has the shaft now been changed? Yes If so, state reasons None

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

Date of examination of Screw Shaft 12/12/36 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft None

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

When the Survey is not complete, state what arrangements have been made for its completion and what remains to be done B.S. On vessel's return to USA

in 3 months time. Port + Starboard Main Boilers to be again examined. M.S. Crank shaft main bearings to be examined. Circulating Pump + Bilge Pumps to be examined. Condenser to be examined + tested. Sea-cocks to be examined next dry docking. Electrical Installation to examine + test. This will be done when, + if, vessel is reboilered.

Please see Secretary's letter S dated 17 Nov 1936

On a/c of circumstances of this case, it was considered advisable for J.S. Heck to join in survey at Philadelphia.

It is necessary to detail this report at length, therefore please see following sheets attached.

General 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 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 L.M.C. 140 lb., E.D., &c.)

The machinery of this vessel is now in safe working condition for the voyage to Buenos Aires + Legible, in our opinion, to remain as classed without fresh record subject to (1) Center Boiler not to be used (2) Working pressure of Port + Starboard Boilers being reduced to 150 lbs, (3) Port + Starboard Boilers being again examined return to USA or in 3 months time whichever is the least. Vessel to have record MS 12.36 when the survey is complete

Fee (per Section 29).....	N.Y. 1/2	\$ 250	Rees applied for Dec 2 36
LATE FEES PHILA	PHILA	150	
Damage or Repair Fee (if any) (per Section 29.)	PHILA	20	
Exp. PHILA	PHILA	30	
Printing expenses (if chargeable)	N.Y.	10	
	N.Y.	23.25	Received by me, 19

W.A. Runkham John S. Heck  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 23 1936

Signed Deferred for Comp. M.S. + Blr. Repairs

use reduced to 150 lbs.

FRI 26 FEB 1937 TUE 28 SEP 1937

Lloyd's Register Foundation

W222-0108 (1/4)

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

S.S. "THODE FAGELUND"MAIN BOILERS

The following examinations and repairs were made at Philadelphia.

Starboard Boiler

J.S. Heck and W. H. Runham attending

Examined externally under steam and when cold and found tight and showing no sign of strain.

W. H. Runham attending-

Insulation removed from butt straps, riveting tested and found good. One slight leak in circumferential seam at bottom of forward head caulked and made tight.

The boiler was not examined internally as it had been examined at Montreal in August last but in our opinion it is safe for three months. On account of condition of the other two boilers it should be again examined on vessel's return to New York in about three months' time.

As far as can be seen, there is nothing seriously wrong with this boiler at present, but the leak under the front head is an indication that it may be progressing to the same condition as the other two boilers. Therefore, it would probably be to the Owners interest to renew it at the same time as the other two boilers.

If it is desired to attempt to save this boiler, it should be stripped, some rivets removed for examination, and the boiler be tested to  $1\frac{1}{2}$  times working pressure, and riveting hammer tested at same time.

Centre Boiler

J. S. Heck and W. H. Runham attending

The Port Butt strap had been found cracked and electric welded at Buenos Aires. The crack had extended beyond the welding and butt strap and riveting were leaking badly. About twenty rivets at bottom of forward head leaking badly and one broken. Several broken rivets found in Port Butt Strap, and at least one broken rivet in Starboard Butt Strap. As the Port Butt Strap would have to be renewed in any event, part of it was removed. The lower half of Shell Plate was then found badly cracked for about 2' and the crack runs farther under the butt strap. See Photo and Sketch No.1 herewith.

This boiler is not fit to be used again and should be renewed as soon as a new one can be built.

Port Boiler

J. S. Heck and W. H. Runham attending

Port Combustion Chamber Wrapper found cracked and temporarily repaired by electric welding at Buenos Aires. Three or four rivet heads in combustion chamber had fallen off.

Temporary Repairs made by removing rivets, veeing out cracks and electric welding, & re-driving rivets

Insulation removed from Starboard Butt Strap, riveting tested and found good.

W. H. Runham Attending-

Insulation removed from Port Butt Strap, riveting tested and appeared good.

Boiler tested to 200 lbs. In the course of testing one rivet head fell off <sup>PORT BUTT</sup> STRAP OF boiler and ~~some~~ others leaked. They were repaired by electric welding and boiler was then found tight and satisfactory.

Boiler examined under steam, found tight and satisfactory and safety valves tried under steam, and found to blow at 180 lbs.

Examination and Repairs made at New York J. S. Heck attending

It had been previously arranged to give vessel a certificate to proceed on two boilers for six months, but on Wednesday, 2nd December, Mr. Runham telephoned and stated that vessel was at sea, but that on the basis of his test he considered the port boiler safe for three months, but no longer. On further consideration at New York it was felt that the boiler pressure should be reduced. Accordingly telephoned Owners representative at New York and asked for further examination of Port Boiler on arrival at New York, to which he readily agreed. Telephoned Philadelphia, but found certificate had already been sent out.

On Thursday, 3rd December, examined Port Boiler under steam and found condition definitely worse than at Philadelphia. Another rivet head had fallen out of Port Butt Strap. Port Butt Strap and about twenty rivets leaking badly. After boiler had cooled down, four rivets were broken off with an ordinary ~~rubbing~~ hammer and others appeared broken. Took out several broken rivets and found shell plate cracked in way - See Sketch No.2. Informed Owners representative, boiler, in my opinion, unsafe to go to sea until repaired.

This made the vessel helpless. There were about 700 tons of cargo on board, and about 2000 tons waiting on the dock. It would take up to six months to get new boilers.

The inside butt straps were carefully examined and four rivets were removed from the Starboard Butt Straps and no other sign of cracking found. These parts had stood a test of 200 lbs. at Philadelphia.

After discussion, it was decided that a Temporary Repair could be made allowing the vessel to make the voyage to Buenos Aires and return at reduced working pressure.

J. S. H.



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Upon removal of the Port Outer Butt Strap, the shell plate was found badly cracked in upper half (see Photo and Sketch<sup>#2</sup> attached). The lower half of shell plate appeared good.

Therefore, a strong Temporary Repair has been made by renewing the Port Outer Butt Strap with a tested plate and extending the same upwards to take four rows of single shear rivets above the inside butt strap. See sketch<sup>No.3</sup> herewith.

This work has been done satisfactorily, the Port Boiler was tested to 175 lbs. by hydraulic pressure and found or made good at that pressure. The safety valves of Port and Starboard Boilers were adjusted under steam to 155 lbs. The Boilers were examined under full head of steam and found or made absolutely tight, and the vessel proceeded on her voyage to Buenos Aires.

The Port and Starboard Boilers are now in safe working condition at 150 lbs. pressure for the voyage to Buenos Aires and return.

The Port and Centre Boilers require to be renewed. It would be in Owners' interest to renew the Starboard Boiler at the same time. The Owners however have not yet had time to decide where the vessel will be reboilered, or whether she will be reboilered at all.

Therefore, no definite recommendations have been made on this point other than that "Working pressure to be reduced to 150 lbs. Center Boiler not to be used. Port and Starboard Boilers to be again examined in three months time."

Copy of certificate attached.

A special report on condition of boilers will follow.

Summary of Temporary Repairs Made.

at Philadelphia.

Port Main Boiler

Port Combustion Chamber

32 rivets renewed in Wrapper Sheet.

Wrapper plate (fractured for about 4') veed out and electric welded.

12' seam welded, 50 rivets caulked.

Small fracture at top of chamber veed out and electric welded.

Port Butt Strap

1 rivet head welded on

7 rivets caulked and electric welded

Starboard Main Boiler

About 3" of front head seam caulked.

at New York

Port Main Boiler

Port Butt Strap renewed as Temporary Repair

About two dozen leaky rivets at bottom of heads electric welded and caulked

4 rivets taken out of Starboard Butt Strap for examination replaced with screwed stays and heads electric welded on.

M. S.

Now done at Philadelphia and New York as part L.M.C.

Cylinders, pistons and slide valves examined and found good.

Crank Pins examined and found good.

Line Shafting examined and found good.

Air Pump, Feed Pumps, Ballast Pumps and Fuel Oil Pumps examined and found good.