

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

(Received at London Office)

LC 1931 -2 DEC

Writing Report 27 November 1931 When handed in at Local Office Port of Copenhagen

Survey held at Copenhagen Date, First Survey 27 November Last Survey 27 November 1931  
(No. of Visits 12)

on the Machinery of the Wood, Iron or Steel PETSAMO

Gross 4612 Vessel built at Glasgow By whom W. Beardmore & Co Ltd. When 1907-9  
Net 2894 Engines made at Glasgow By whom W. Beardmore & Co Ltd. When 1907-9  
al 463 Boilers, when made (Main) 1907-9 (Donkey) -  
ower 3913 Owners H. A. Elfring Owners' Address Port Hango Voyage Finland  
ain Boilers 1906 Managers -  
nkey Boilers - If Surveyed Afloat or in Dry Dock Dry dock  
essure - (State name of Dock) H. Bernmark & Wain  
a Boilers - Particulars of Classification (which must be inserted  
key Boilers - precisely as in Register Book & Supplements).

Report No. - Port -

Particulars of Examination and Repairs (if any)

al Surveys, when held, must be reported in detail and seriatim 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 summarized at the end of the report. State also the  
and initials of any letters respecting this case. E 9/11 - 11/11 - 12/11 - 13/11

ge cases where the Surveyor has not made a special damage report he is required to state whether he  
ed his services for this purpose, and why they were declined? ✓

amage report made by anyone else? If so, by whom? ✓

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

" Donkey " " " ✓

is 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  
or to assure himself of the thorough efficiency of those parts of each Boiler? ✓

Surveyor examine the Safety Valves of the Main Boiler? yes To what pressure were they afterwards adjusted under steam? At the request of owner 165 lb 10"

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? yes, and of the Donkey Boilers? ✓

Surveyor examine the drain plugs of the Main Boilers? None, and of the Donkey Boiler? ✓

Surveyor examine all the mountings of the Main Boilers? yes, and of the Donkey Boiler? ✓

W shaft now been drawn and examined? yes Is it fitted with continuous liner? yes Is an approved appliance fitted at the after end of No  
the shaft to permit of it being efficiently lubricated?

t now been changed? yes If so, state reasons The liner was scored and slack at fore & after end

shaft now fitted been previously used? No Has it a continuous liner? yes Is an approved appliance fitted at the after end of No  
the shaft to permit of it being efficiently lubricated?

distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft Just Clearance

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

Damage

led to be due to grounding on Evergrund at Hunnafloir, Iceland  
the 25<sup>th</sup> July 1931.

Now done: The propeller shaft drawn in and examined and the brass  
found scored and somewhat slack at fore and after end.  
shaft replaced by a new spare shaft kept on board marked: LLOYD'S  
7248 W. G. M. 29.7.07. A certificate could not be produced.  
shaft, which is fitted with a continuous liner examined and found good.  
aftermost sternbush drawn out, the lignum vitae bored out to suit the dia-  
ter of the new shaft and the sternbush again fitted in place.  
scored guard ring at the after end of the sternbush renewed.  
cement in way of the nuts for the propeller blades removed, the nuts  
(PTO)

al Observations, Opinion, and Recommendation:—

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

Recommend the vessel's machinery to remain as classed and to have  
ion of Tail shaft new 11.31 and L.M.C. 11.31 - subject to the rivets in the  
longitudinal shell seams of the boiler being specially examined before  
end of May 1932.

(per Section 29) 265.00 Fees applied for 30.11.1931

age or Repair Fee (if any) 135.00

per Section 29. 30.00

expenses (if chargeable) 2.50

Diagram 22.00

Received by me, 12.1.1932

Committee's Minute FRI. 18 DEC 1931

ed L.M.C. 11-31. S(N) 11-31

Subject -

CERTIFICATE WRITTEN

TUE. 16 AUG 1932

FRI. 7 JUL 1933

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation

w69-0192/14



Copenhagen

Continuation of Report No. 8665 dated 27<sup>th</sup> November 1921 on theSteel S. PETSAMO

tested and tightened up as required and the cement relaid.  
The 6 coupling bolts renewed.

The stem tube, stem bush, the liquor valve and the propeller examined and found good.

The dove pin in the forward L.P. crank web and shaft journal which was found a little slack replaced by a new one.

The crank-thrust and intermediate shaft stopped examined and found good with bearings, brasses and bolts.

The condenser tested and found leaky in way of the forward tube plate and in way of the tubes.

All condenser tubes drawn and the forward tube plate removed.

The condenser cleaned, examined internally and found good.

The tubes tested and 519 defective tubes and 1500 screw females

renewed. The forward tube plate again packed on and tubes re-packed.

The condenser tested examined and found good and tight.

The centrifugal circulating pump opened up, and the outer-  
aftermost bearing found somewhat worn. The shaft dressed up  
and the bush in the bearing renewed.

The air- and bilge pumps opened up examined and found  
good with buckets, valves and connections.

The reconnections and their fastenings examined and found  
good.

The steering engine opened up examined and found good.

A damage report has been issued as per copy enclosed.

Special Periodical Survey.

The following repairs now effected.

The H.P. piston rod skimmed over and metallic packings fitted, 2 screw stay nuts renewed.

The slide valve house of the forward feed pump (Weir) renewed.

The ballast pump bucket rods skimmed over and rebushed.

The division plate in the aftermost condenser cover repaired.

One spring for the L.P. piston packing ring renewed.

The main feed valves removed from the 2 aftermost boilers, new  
seats fitted and the valves re-packed with new fastenings.

The starboard cylinder with slide valve casing renewed complete  
on the steam windlass.

The cylinder- and slide valve covers lifted, junkings of pistons  
removed and slide valves drawn.

The cylinders, casings, covers, pistons and rods, slide valves, faces  
and spindles, connecting rods with brasses and bolts, crossheads  
and guides, eccentrics and rods, quadrants, reversing engine  
and levers etc. with fastenings and connections examined and found

Steel S. PETSAMO

The feed pumps, the ballast pump and the donkey engine  
up with their buckets, valves and connections examined and  
found good.

The bilge injection valve, tank- and bilge suction pipes,  
brasses and valves examined and found good.

The steam windlass examined and found good.

Tested the machinery under steam and found it to work  
satisfactorily.

The manoeuvring tested and found good.

The electric installation examined and tested as per Rule and  
found good.

In the main boiler combustion chambers a number of small cracks  
and rivet holes to edge of plate have been repaired as below stated.

Welding being done by the electric process.

Starboard boiler: Port combustion chamber: 1 screw stay nut renewed, 1 crack  
in furnace flange connection to back tube plate welded.

Lower combustion chamber: 1 screw stay nut renewed, 5 cracks in furnace  
flange connection and 3 in back plate welded.

Starboard lower combustion chamber: 7 cracks in furnace flange connection  
6 in back plate welded. A slight crack on the underside of the  
flange near the back end welded.

Starboard combustion chamber: 8 cracks in furnace flange connection welded.

Starboard boiler: Port combustion chamber: 3 cracks in back plate and 3 in  
flange welded.

Lower combustion chamber: 8 cracks in furnace flange connection welded.

Starboard lower combustion chamber: 2 cracks in furnace flange and 3 in back plate

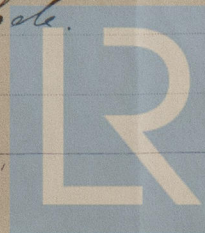
Starboard boiler: Port combustion chamber: 3 cracks in furnace flange connection and  
back plate welded.

Lower combustion chamber: 4 cracks in furnace flange connection and  
back plate welded.

Starboard lower combustion chamber: 3 cracks in furnace flange and 8 in  
back plate welded.

Starboard combustion chamber: 5 cracks in furnace flange and 1 in  
back plate welded.

Various leaky places in way of the circumferential seams  
and aft, in way of the ends of shell butt straps, and in way  
of the corners of the connections between upper and lower part of  
the plates, caulked or repaired by electric welding as required.  
The edge of the centre man hole of the port boiler built up by  
electric welding and the door refitted in the hole.



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II

Continuation of Report No. 8665 dated 27<sup>th</sup> November 1931 on the

Shel. Sc. PETSAMO

Examined internally and externally, the 3 main boilers and as stated in our letter dated 6<sup>th</sup> November 1931 a number of new plugs in the lower butt strapped joints of the shell.

Chief engineer stated that these plugs had been fitted recently. remaining rivets were tested by hammer, without any additional rivets being found at that time.

requested in the Secretary's telegram dated 12<sup>th</sup> November

4 plugs in the port shell seam of the port boiler were removed and the holes rimmed up. The shell plates and butt straps were specially examined through these holes and found not to be cracked.

While the work was going on some rivet heads were knocked off on the inside of the butt strap; the rivets were again hammered on and more rivet heads were now knocked off - all on the inside. As this would require a number of rivets in the vicinity of the other to be replaced by screwed plugs or by fitted bolts, and as further some of the remaining rivets previously had been repaired by welding, it was recommended to replace, rivets on which the heads could be knocked off, all bolts which had been repaired by welding and all screwed plugs in seams, which had to be dealt with due to bad rivet heads, by new rivets.

In the port boiler 15 new rivets were fitted in the port shell seam and 11 ditto in the starboard shell seam.

In the forward boiler 6 rivets were fitted in the port seam.

The shell plates and butt straps examined through the holes without cracks being found in any case.

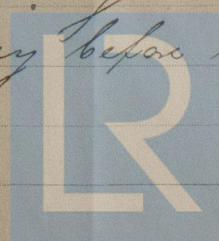
The new rivets are pan-headed inside and countersunk outside. Messrs Burmeister & Wain stated that they were not able to make a head outside as on the original rivets - due to the large diameter -  $1\frac{5}{8}$ " -  $1\frac{3}{4}$ "

In the remaining shell seams, which did not require repairs the screwed plugs have been retained.

We beg to enclose a sketch showing the position of the new rivets and of the screwed plugs.

On completion of the work the longitudinal joints were hammer tested and found to be good - as far as could be seen - and the boilers were tested by hydraulic pressure to 230 lbs per sq. in. examined and found good and satisfactory.

Recommended the rivets in the lower longitudinal shell seams of all 3 main boilers to be specially examined within a period of 6 months, say before the end of May 1932.



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III

Continuation of Report No. 8665 dated 27<sup>th</sup> November 1936 on the

Steel S. PETSAMO

Examined internally and externally the 3 main boilers  
found them with safety valves, manholes and doors  
pipes and mountings in good and safe working  
condition.

Adjusted the safety valves under steam, at the  
request of the owners to 165 lbs per sq. in. only on all 3 boilers.

The owners request not to have the record of boiler pressure  
entered in the Register Book.

S.M.



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Foundations 4/14





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