

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

No. 10953

(Received at London Office) -2 NOV 1936

Survey Report 29th Oct. 1936 When handed in at Local Office 31st Oct. 1936 Port of Gothenburg
Survey held at Gothenburg Date, First Survey 11th May Last Survey 13th Oct. 1936
on the Machinery of the Wood, Iron or Steel 5/5 "FRATERNITAS" (No. of Visits 44)

Vessel built at Belfast By whom Harland & Wolff Ltd When 1905-8
Engines made at Belfast By whom Harland & Wolff Ltd When 1905
Boilers, when made (Main) 1905 (Donkey) 1929.
Owners Fraternitaskompagniet Aktieselskabet Owners' Address
Managers H. P. Moller (if not already recorded in Appendix to Register Book.)
Port Copenhagen Voyage
If Surveyed Afloat or in Dry Dock Both. (State name of Dock.) Litarshen
Port No. Port

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.
Machinery and Boiler Surveys (including date of N.B., if any).
100 T 1 7.30
LME 7.30
BS 10.34
NDR 8.29
CL 9.34
Carrying whole oil in bulk
Fitted for oil fuel
F.P. ABOVE 150° F.
UNDERTAKING CASE
Carrying Oil Fuel, Flash Point above 150° F in D.B. tanks at aft

Particulars of Examination and Repairs (if any) Attention Damage
Surveys, when held, must be reported in detail and variation 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 damage (the cause of which must be stated) should be separated from repairs due to other causes; and initials of any letters respecting this case.
Cases where the Surveyor has not made a special damage report he is required to state whether he has services for this purpose, and why they were declined offered to Owners, not required
Damage report made by anyone else? If so, by whom? None made
Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes
Donkey Yes
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 to assure himself of the thorough efficiency of those parts of each Boiler?
date of internal examination of each boiler 20th July 1936; P.B. 19th Aug. 1936 Present condition of funnel(s) Good
Surveyor examine the Safety Valves of the Main Boiler? Yes To what pressure were they afterwards adjusted under steam? 218 lb/sq
Surveyor examine the Safety Valves of Donkey Boiler? Yes To what pressure were they afterwards adjusted under steam? 125 lb/sq
Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes P.B. 60 lb/sq (8 off); 43 lb/sq (7 off) and of the Donkey Boilers? Yes
Surveyor examine the drain plugs of the Main Boilers? None fitted and of the Donkey Boiler? None fitted
Surveyor examine all the mountings of the Main Boilers? Yes and of the Donkey Boiler? Yes
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
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 19th June 1936 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft 4 in.
Line parts, when referred to by numbers, should be counted from forward. Is electric light and/or power fitted? Yes
Survey is not complete, state what arrangements have been made for its completion and what remains to be done Complete.

Damage, the cause of which was not stated.

Damage repairs now effected.
The propeller boss renewed (cracked)
All blades fixed and 1 blade dressed up by means of E.W. at tip.

The LMC survey has been held as follows.
The propeller, propeller shaft, sea cocks and valves and fastenings and sea connections examined.

The cylinders, pistons, slide valves with casings, covers and rods, crank and intermediate shafting, condensers, all pumps and the (continued)

General Observations, Opinion, and Recommendation:— The machinery of this vessel 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., F.D., &c.)
CS 3,34,
is eligible in our opinion to remain as now classed in the Register Book with record of "Sail shaft seen" 8.36 and notations of 7C 10.36 and P.B. BS 10.36

Fees applied for 71/10 1936
Damage or Repair Fee (if any) 70:00
Fees applied for 71/10 1936
Received by me S. Berntsen P.O. Sjogren Steen Johansson
Engineer Surveyor to Lloyd's Register of Shipping.
FRI. 4 DEC 1936
Committee's Minute
ned + Lm. 6. 10.36
OR BS 10.36

UNDERTAKING CASE
CERTIFICATE WRITTEN
Lloyd's Register Foundation

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pipes, cocks, valves and strainers of the pumping arrangement examined.

The electric installation examined and tested.

All main boilers, smoke boiler and press boilers examined in- & externally with safety valves and mountings and their safety valves adjusted under steam as above.

The main steam pipes examined.

The daily fuel oil tanks examined with fittings and connections.

Repairs effected due to wear and tear

The white metal in 11 main bearing halves renewed.

The lower half of 1 main bearing renewed.

The alignment of the shafting readjusted.

The white metal of No 2 I.P. crosshead brasses renewed.

Small feed water pump.

The water cylinder cover renewed.

The water piston rod and gland renewed.

The water piston rings renewed.

Main feed water pump.

The steam gland renewed.

The water piston rings renewed.

The slide-valve and the valve face planed.

Sanitary pump.

The steam and water piston rods renewed.

The steam and water piston rings renewed.

Main circulating pump.

The impeller shaft renewed.

Ballast pump.

The slide valve rod skimmed in lathe.

Air pump.

All valves renewed (slingshot).

Port fuel oil pump for the smoke boiler.

The steam cylinder renewed (cracked).

Main condenser.

A number of tubes renewed and the condenser tested by water pressure.

Auxiliary condenser.

Both end covers and a few tubes renewed.

Pumping arrangement.

8 bilge valves and 1 valve spindle renewed.

Port main boiler.

2 screw stays renewed.

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2 stiffening T-bars at the bottom of centre combustion chamber renewed.

1 additional glass water gauge fitted

Centre forward main boiler.

1 additional glass water gauge fitted.

Press boilers

All vertical pressboilers taken ashore, sealed, coated, re-insulated and refitted.

All mountings renewed.

2 small vertical pressboilers have now been altered to be used as settling tanks.

2 Hantman-boilers taken ashore, sealed, repaired as follows, and refitted.

Forward circumferential seam (at filling end) riveted.

Centre circumferential seam riveted.

Both boilers tested by water pressure to 70 lbs/sq. in., coated and re-insulated after repairs effected.

Alterations4 Hantman boilers, taken ashore from the 5/8 "Rosmoor II", have been placed in order by the renewal of the shell and end plates and have now been installed on board.

The scantlings are in accordance with plan approved for a working pressure of 70 lbs/sq. in.

The apparatus were on completion tested by hydraulic pressure to 105 lbs/sq. in. and found tight and sound at this pressure.

The apparatus were marked:

No 359

No 360

LLOYD'S TEST 105 LBS.

LLOYD'S TEST 105 LBS

WP 70 LBS

WP 70 LBS

E.B. 10. 9. 36

S.J. 17. 9. 36. R.

No 363

No 364

LLOYD'S TEST 105 LBS

LLOYD'S TEST 105 LBS

WP 70 LBS

WP 70 LBS

S.J. 25. 9. 36. R.

S.J. 26. 9. 36. R.

2 new Hoerner waste oil boilers which have been built under Special Survey by the Oslo Surveyors according to certificates attached have now been fitted on board.

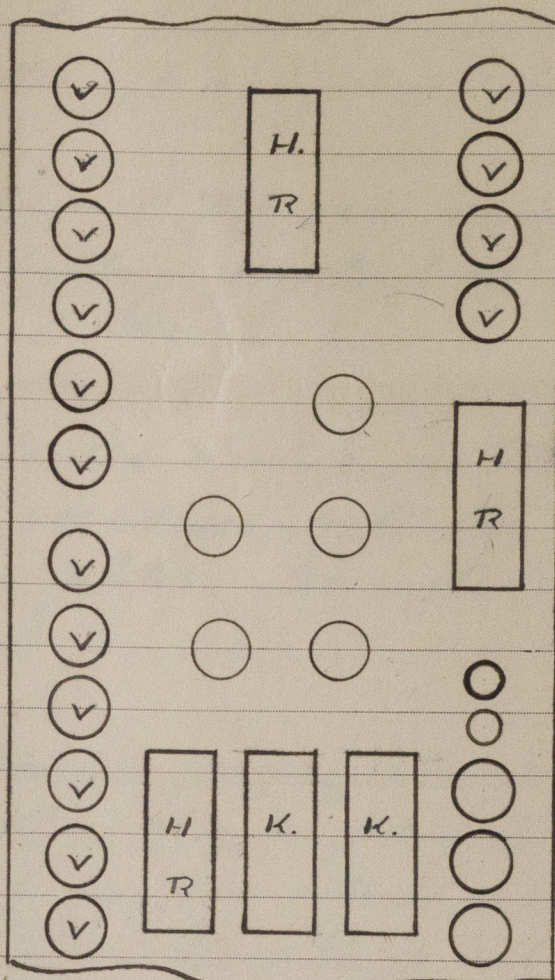
(Continued)

1/2 "FRATERNITAS" No 75343 in the Register Book

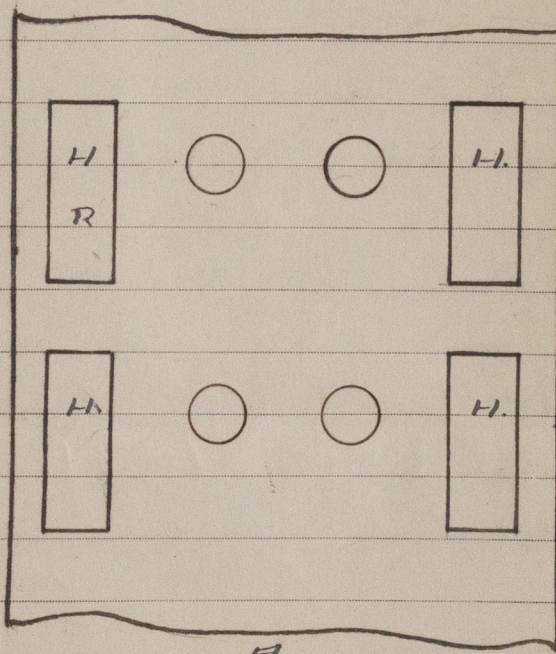
The piping arrangement in the whaling factory has been altered to suit the new arrangement.

General arrangement for the press-boilers.

F.



machinery and boiler space



H.

V - Vertical boilers. 16 @ 60 lb.

HR - Rebuilt Hartman boilers. 1 @ 43.

H - Hartman boilers. 3 @ 43.

K - New Kraemer boilers. 2 @ 43.

15'

The safety valves of all vertical press-boilers adjusted under steam to 60 lbs/sq" (16 off) of the new Kraemer boilers to 60 lbs/sq" (23 off) and of the Hartman boilers to 43 lbs/sq" (7 off.)

Electric installation.

The small generator rewound and the commutator skimmed in lathe.

The main generators overhauled and the commutators skimmed in lathe.

The electric installation in all cabins and ships renewed.

(Continued)

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The cables to the whale oil separator renewed.
 The cables with fittings in the tunnel renewed.
 Nearly all cables in the machinery- and boiler room renewed.

The cables for the side navigation lamps renewed.
 The cable for the forward navigation lamp renewed.
 The cable for the aft navigation lamp renewed.

In order to suit the new arrangement of coaling boilers a few lighting points have been altered and some additional fitted.

The work to the electric installation has been carried out in accordance with the requirements of the Rules and on completion the installation has been tested and found good.

Alterations to pumping arrangement.

In connection with the fitting of 3 trim tanks aft, the piping arrangement has been altered according to plans approved in the London Office 12/8-36 and the pipes connected to the ballast pump.

2 "bilge hats" forward and 2 aft have been fitted for additional clearing of the cargo tank deck (3rd deck) and suction pipes fitted from these "hats" to two new bilge pumps.

Note.

A plan of the old Hartman boilers is forwarded herewith. On this plan the makers have indicated the working pressure to be 3 kg/cm^2 (43 lbs./sq. in.) and therefore the Owners desire to keep this pressure for all the Hartman boilers and the safety valves have been adjusted accordingly.

T. O. Ljögren