

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 14 JAN 1937

Date of writing Report 30/12-1936 When handed in at Local Office 19 Port of Oslo  
 No. in Survey held at Fredrikstad Date, First Survey 24 June 1936 Last Survey 23/12-1936  
 Reg. Book. on the steel single screw steamer "HERMA GORTHOEN" (Number of Visits 25)  
 Built at Fredrikstad By whom built Fredrikstad Mek. Verksted Yard No. 281 Tons { Gross 1846  
 Engines made at Fredrikstad By whom made Fredrikstad Mek. Verksted Engine No. 1075 Net 943  
 Boilers made at Fredrikstad By whom made Fredrikstad Mek. Verksted Boiler Nos 106-107 When built 1936  
 Registered Horse Power Owners Soderhavetslaget "GYLFE" Port belonging to Kalsingborg  
 Nom. Horse Power as per Rule 277 ✓ Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted yes  
 Trade for which Vessel is intended General

ENGINES, &c. — Description of Engines Four crank compound, inverted vertical Revs. per minute 100  
 Dia. of Cylinders 2 × 390 and 2 × 960 mm Length of Stroke 875 mm No. of Cylinders 4 No. of Cranks 4  
 Crank shaft, dia. of journals as per Rule 289.7 mm Crank pin dia. 297 mm Crank webs Mid. length breadth 566 mm Thickness parallel to axis 185 mm  
 as fitted 294 mm Mid. length thickness 185 mm Thickness around eye-hole 132 mm  
 Intermediate Shafts, diameter as per Rule 275.9 mm Thrust shaft, diameter at collars as per Rule 289.7 mm  
 as fitted 278 mm as fitted 294  
 Tube Shafts, diameter as per Rule — Screw Shaft, diameter as per Rule 317.4 mm Is the { tube } shaft fitted with a continuous liner { yes  
 as fitted — as fitted 320 mm { screw }  
 Bronze Liners, thickness in way of bushes as per Rule 17.2 mm Thickness between bushes as per Rule 12.9 mm Is the after end of the liner made watertight in the  
 as fitted 18 mm as fitted 14 mm propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓  
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓  
 If two liners are fitted, is the shaft lapped or protected between the liners ✓ Is an approved Oil Gland or other appliance fitted at the after end of the tube  
 shaft ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 1570 mm  
 Propeller, dia. 3800 mm Pitch 42.67 mm No. of Blades 4 Material Hard bronze whether Moveable ✓ Total Developed Surface 3992 sq. feet  
 Feed Pumps worked from the Main Engines, No. — Diameter — Stroke — Can one be overhauled while the other is at work  
 Bilge Pumps worked from the Main Engines, No. — Diameter — Stroke — Can one be overhauled while the other is at work  
 Feed Pumps { No. and size Two, 240 × 175 × 450 mm Pumps connected to the { No. and size Two 150 × 150 × 150  
 How driven steam driven, vertical duplex Main Bilge Line { How driven steam driven, duplex  
 Ballast Pumps, No. and size One 190 × 200 × 175 mm Lubricating Oil Pumps, including Spare Pump, No. and size —  
 Are two independent means arranged for circulating water through the Oil Cooler — Suctions, connected to both Main Bilge Pumps and Auxiliary  
 Bilge Pumps; — In Engine and Boiler Room Port side: Two 65 mm SB side: Two 65 mm + Two 51 mm suction from settling tank  
 In Pump Room gutterways to oil transfer pump In Holds, &c. Fore hold: one 50 mm P.S.; one 90 mm P.S.  
 After hold: one 75 mm P.S.; one 75 mm P.S. aft; one 75 mm from tunnel well  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size one, 170 mm Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 No. and size Two, 95 mm Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes yes  
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes  
 Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks Valves  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Overboard Discharges above or below the deep water line yes  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes  
 What Pipes pass through the bunkers ✓ How are they protected ✓  
 What pipes pass through the deep tanks ✓ Have they been tested as per Rule ✓  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one  
 compartment to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from forehold

MAIN BOILERS, &c. — (Letter for record 23/3/36 24/6/36 16/10/36) Total Heating Surface of Boilers 382.8 m<sup>2</sup> 4120 ft<sup>2</sup>  
 Is Forced Draft fitted yes No. and Description of Boilers Two multitubular S.E. Scotch Working Pressure 15.5 kg/cm<sup>2</sup>  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? no — See Bottenhug Rpt. 10, dated 11/3/36 2 R.M. Sanders, 1st Rpt. No. 3574  
 IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? ✓ 220 lb.  
 Is the donkey boiler intended to be used for domestic purposes only ✓

PLANS. Are approved plans forwarded herewith for Shafting 16/3, 17/4, 23/4, 1936 Main Boilers 26/6/30 Auxiliary Boilers — Donkey Boilers —  
 (If not state date of approval) Superheaters 14/7/36 General Pumping Arrangements 18/5/36, piping 2/4/36 Oil fuel Burning Piping Arrangements 22/10/36  
 SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓

State the principal additional spare gear supplied

complete bottom and a top and bearing  
 1 tail shaft. Coupling bolts. 1st of each size  
 8 segments for thrust bearing  
 6 condenser tubes with packings  
 3 compl. burners for oil fuel burning app.  
 6 piston rings for H.P. piston  
 6 ring for H.P. slide valve (piston type)  
 3 piston rings for L.P. piston  
 6 boiler tube stoppers. 1st boiler tubes (4)  
 1 set packing rings for piston & slide valve rods  
 1 set pump valves for air pump.  
 1 impeller shaft for circulating pump  
 1 set packing rings for feed water pumps  
 1 piston rod for elect. light engine  
 1 bottom and bearing  
 1 set feed pump valves  
 1 set feed check valves & covers  
 1 piston rod and 1 set  
 bottom and brasses for  
 circ. pump. — Springs for  
 H.P. & L.P. safety valves.  
 Bilge pump valves & seats  
 Assorted nuts & bolts  
 Iron & steel bars & plates  
 Same as mentioned in

The foregoing is a correct description,  
 pr. % FREDRIKSTAD MEK. VERKSTED

Manufacturer.

003513-003524-0095

Lloyd's Register  
 Foundation



During progress of work in shops - - 30th July; - 11th August; - 14th & 24th September; - 1st, 5th, 8th, 16th, 22nd & 27th October  
 4th, 7th, 11th, 20th, 24th & 25th November - 1936; also 24th June, discussion of plans  
 During erection on board vessel - - 1st, 7th, 8th, 11th, 12th, 16th, 22nd & 23rd November 1936  
 Total No. of visits 25.

Dates of Examination of principal parts - Cylinders 14/9, 1/10 & 8/10 Slides 27/10 & 7/11 Covers 15/10, 4/11  
 Pistons 27/10 & 7/11 Piston Rods 27/10 & 7/11 Connecting rods 27/10 & 7/11  
 Crank shaft 14/9, 24/9, 1/10 & 15/10/36 Thrust shaft 15/10 & 11/11/36 Intermediate shafts 15/10 & 11/11/36  
 Tube shaft ✓ Screw shaft 11/11 & 24/11 Propeller 22/10/36; fitted 24/11/36  
 Stern tube 27/10, 20/11 & 24/11 Engine and boiler seatings 27/10 8/12 Engines holding down bolts 8/12/36  
 Completion of fitting sea connections 20/11  
 Completion of pumping arrangements 16/12 Boilers fixed 8/12/36 Engines tried under steam 22nd & 23rd Dec. 1936  
 Main boiler safety valves adjusted 22/12 Thickness of adjusting washers ✓  
 Crank shaft material S.M. Steel Identification Mark <sup>Lloyds</sup> M.V. 28.1-2-3 15.10.36 P.E. Thrust shaft material S.M. Steel Identification Mark <sup>Lloyds</sup> N° 1045-58.15.29.36  
 Intermediate shafts, material S.M. Steel Identification Marks <sup>Lloyds</sup> N° 1042-44 15.7.36 15.7.36 Tube shaft, material Identification Mark  
 Screw shaft, material S.M. Steel Identification Mark <sup>Lloyds</sup> N° 9385-23.9.36 Steam Pipes, material Steel ✓ Test pressure 46.5 kg/cm<sup>2</sup> Date of Test 11/12 & 12/12  
 Is an installation fitted for burning oil fuel yes ✓ Is the flash point of the oil to be used over 150°F. yes ✓  
 Have the requirements of the Rules for the use of oil as fuel been complied with yes ✓  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ If so, have the requirements of the Rules been complied with ✓  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with yes ✓  
 Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

This machinery has been constructed in accordance with the approved plans and in conformity with Secretary's letter concerning this vessel. All materials, where required by the Rules, have been tested by the Society's Surveyors. The main engine cylinders were tested by hydraulic pressure. - All steam piping, incl. superheater piping with headers, feed pipes and oil fuel piping have been tested as per Rules and found in order.

The pumping arrangements have been carried out as approved and amended. The workmanship throughout is good. - The heating coils in double bottom tanks and settling tanks were tested after completion & found tight.

The machinery has been examined under working conditions at trials alongside the quay and on the trial trip.

The boilers have been examined & tested on completion of repairs, which were carried out in accordance with approved plans. - The boilers were also examined under steam, when the safety valves were adjusted to 15.5 kg./cm<sup>2</sup>. The copy of the original boiler report is returned herewith (Boiler No 23/3/36). None of the approved plans are returned now, as triplicate plans were in all cases submitted.

It is recommended that this vessel's machinery be classed in the Society's Register Book, with notation **LHC 12.36**. **Boiler built 1931 refitted 1936**. Fitted for oil fuel, flash point above 150°F.

The amount of Entry Fee ... £ 59.70 : When applied for, 29/12/1936  
 Special ... £ 116.5.15 :  
 Donkey Boiler Fee ... £ ✓ :  
 Travelling Expenses (if any) £ :  
 Charged on Bill Rpt. 21.1.37

Performed by *Performed by* *Peride*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI 29 JAN 1937**  
 + LHC 12.36 Spc.  
 Assigned *Boilers made 31 fitted 36*  
*Fitted for oil fuel 12.36 SP. above 150°F.*  
*22, 9*