

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 _{Net} 943
 Engines made at Fredrikstad By whom made Fredrikstad Mek. Verksted Engine No. 1075 When built 1936
 Boilers made at Fredrikstad By whom made Fredrikstad Mek. Verksted Boiler Nos 106-107 When made 1931
 Registered Horse Power Owners Sederstatistisklaget "GYLFE" Port belonging to Helsingborg
 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 x 390 and 2 x 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. shrunk 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
 as fitted — as fitted 320 mm. Is the _{screw} shaft fitted with a continuous liner
 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 propeller boss Yes
 as fitted 18 mm. as fitted 14 mm.
 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. 3870 mm. Pitch 42.67 mm. No. of Blades 4 Material Mang. 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 x 175 x 450 mm. Pumps connected to the { No. and size Two 150 x 150 x 150
 How driven steam driven, vertical duplex Main Bilge Line { How driven steam driven, duplex
 Ballast Pumps, No. and size One 190 x 200 x 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 57 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 Seen below
 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 deck

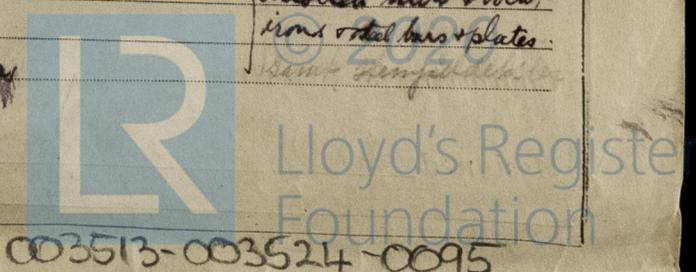
MAIN BOILERS, &c.—(Letter for record 23/3/36) Total Heating Surface of Boilers 382.8 m² 4120 ft²
 Is Forced Draft fitted Yes No. and Description of Boilers Two multitubular S.E. Scotch. Working Pressure 15.5 kg/cm²
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? No. — See Bottenhagen Rpt. 10, dated 11/3/36. boiler
 IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded? Yes 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, 23/10/1936 Main Boilers 26/6/30 Auxiliary Boilers — Donkey Boilers —
 Superheaters 14/7/36 General Pumping Arrangements 18/5/36, piping 20/4/36 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 end & top end bearing
 1 tail shaft. Coupling bolts, 1 set 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. Set 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 end bearing
 1 set feed pump valves
 1 set feed check valves & covers
 1 piston rod and 1 set bottom end brasses for circ. pump. — Springs for H.P. & L.P. safety valves. — Bilge pump valves & seats. Assorted nuts & bolts. Iron & steel bars & plates.

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

Manufacturer.



003513-003524-0095

Dates of Survey while building

During progress of work in shops -- 30th July; - 11th August; - 14th & 24th September; - 1st, 5th, 8th, 15th, 22nd & 27th October

During erection on board vessel -- 4th, 7th, 11th, 20th, 24th & 25th November - 1936; also 24th June, discussion of plans

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 1/11 & 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 ^{Lloyds} F.M.V. 28.1-2-3 15.10.36 P.E. Thrust shaft material S.M. Steel Identification Mark ^{Lloyds} N° 1045-15.10.36

Intermediate shafts, material S.M. Steel Identification Marks ^{Lloyds} N° 1042-44 15.7.36 N° 2372-74 15.7.36 Tube shaft, material Identification Mark

Screw shaft, material S.M. Steel Identification Mark ^{Lloyds} N° 9385 23.9.36 Steam Pipes, material Steel ✓ Test pressure 46.5 kg/cm² 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./cm².

The copy of the original boiler report is returned herewith (No. 114 23/3/36). One 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**. **Boilers built 1938 refitted 1936**

Fitted for oil fuel, flash point above 150° F.

The amount of Entry Fee ...	£ 59. 70 :	When applied for,	
Special ...	£ 116. 5. 15 :	29/12/1936	
Donkey Boiler Fee ...	£ ✓ :	When received,	
Travelling Expenses (if any) charged on Bill Rpt.	£ 21. 1. 37 :	20/11	

Perforator's Prude
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI 29 JAN 1937**

Assigned **LHC 12.36 Spl.**
Boilers made '31 fitted '36
Fitted for oil fuel 12.36 Spl. above 150° F.
 J.D. C.



Certificate to be sent to this office

The Surveyors are requested not to write on or below the space for Committee's Minute.