

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office MAY 16 1938

Date of writing Report 30/4/1938 When handed in at Local Office 13/5/1938 Port of Oslo
 No. in Survey held at Fredrikstad Date, First Survey 2nd August 1937 Last Survey 2nd May 1938
 Reg. Book. on the steel single screw steamer "VIVA" (Number of Visits 30) Tons { Gross 3798 Net 2194
 Built at Fredrikstad By whom built Fredrikstad Mek. Verktsted Yard No. 287 When built 1938
 Engines made at Fredrikstad By whom made Fredrikstad Mek. Verktsted Engine No. 1092 When made 1938
 Boilers made at Fredrikstad By whom made Fredrikstad Mek. Verktsted Boiler No. 1345/46 When made 1938
 Registered Horse Power at 1850 HP. Owners M/Viva (C. H. Sorensen & Sorener) Port belonging to Arcudal
 Nom. Horse Power as per Rule 353 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which Vessel is intended general trade ("tramp")

ENGINES, &c.—Description of Engines 4-cylinder inverted double compound Revs. per minute at 100
 Dia. of Cylinders Two 425 - Two 1015 mm Length of Stroke 930 mm No. of Cylinders Four No. of Cranks Four
 Crank shaft, dia. of journals as per Rule 311.49 Crank pin dia. 318 mm Crank webs Mid. length breadth 198 mm Thickness parallel to axis 198 mm
 Intermediate Shafts, diameter as per Rule 296.6 mm Thrust shaft, diameter at collars as per Rule 311.49
 Tube Shafts, diameter as fitted 298 Screw Shaft, diameter as per Rule 344.3 mm Is the tube shaft fitted with a continuous liner Yes
 Bronze Liners, thickness in way of bushes as per Rule 18.5 aft - 19 mm fwd Thickness between bushes as per Rule 15 mm Is the after end of the liner made watertight in the propeller boss yes
 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 yes
 If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no
 Propeller, dia. 4500 Pitch 3880 No. of Blades 4 Material hang. bronze whether Moveable no Total Developed Surface 78.04 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 530 mm, 30 tons/ hour Pumps connected to the { No. and size Two, 6" x 8" x 6" and 10" x 12" x 10" (ballast pump)
 How driven Simplex, steam Main Bilge Line { How driven Steam duplex
 Ballast Pumps, No. and size one 10" x 12" x 10", duplex 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 Two SB 2 1/2", one port 2 1/2"
 In Pump Room ✓ In Holds, &c. Fore hold: Two 3 1/4", main hold, two 3", deep tank, two 2 1/2"
 Copperdams: one from each, 2", after hold: two 3 1/2", two 3", tunnel well, one 3"
 Main Water Circulating Pump Direct Bilge Suctions, No. and size one 7 7/8" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one, 4 1/2"
 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 + cocks
 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 above
 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 Bilge pipes to No. 1 main hold Have they been tested as per Rule Yes
 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 deck

MAIN BOILERS, &c.—(Letter for record E. 11/3/37) Total Heating Surface of Boilers 512 m² (5510 ft²)
 Is Forced Draft fitted Yes No. and Description of Boilers Two cylindrical (Scotch type) Working Pressure 15.5 kg./cm²
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? ✓
 Is the donkey boiler intended to be used for domestic purposes only ✓
PLANS. Are approved plans forwarded herewith for Shafting 24/3/37 Main Boilers 14/4/37 Auxiliary Boilers ✓ Donkey Boilers ✓
 Superheaters 10/4/37 General Pumping Arrangements 16/4/37 Oil fuel Burning Piping Arrangements 5/2/38

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes
 State the principal additional spare gear supplied: 1 Tail shaft, 1 HP. piston rod, 1 HP. slide valve rod, 1 set L.P. piston rings, 1 set piston rings for aux. machinery steam pistons, 1 slide valve for F.D. engine, centre pump seats, light engine, 1 condenser tubes ferrules, 1 gasket ring.

The foregoing is a correct description,

Fredrikstad Mek. Verktsted
 Manufacturer.



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If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship? No. 101 E. - The ...

1937: 3/8 - 18/8 - 6/9 - 20/9 - 11/10 - 14/10 - 29/10 - 17/11 - 6/12 - 16/12 -
 During progress of work in shops - - 1938: 4/1 - 13/4 - 21/1 - 26/1 - 2/2 - 5/2 - 11/2 - 22/2 - 25/2 - 2/3 - 11/3 - 16/3 -
 Dates of Survey while building } During erection on board vessel - - - } 29/3 - 6/4 - 13/4 - 20/4 - 25/4 - 29/4 - 2/5 - 3/5
 Total No. of visits 30

Dates of Examination of principal parts - Cylinders 11/10/37 17/11/37 26/11 1/12 Slides 11/10/37 17/11/37 Covers 17/11 - 26/11/37 - 4/1/38
 Pistons 11/10/37 - 17/11 - 16/12/37 - 4/1/38 Piston Rods 6/12 - 16/12/37 - 18/1/38 Connecting rods 17/11 - 16/12/37 - 4/1/38
 Crank shaft 2/11/37 - 17/11 - 1/3/38 Thrust shaft 2/11/37 - 17/11 - 1/3/38 Intermediate shafts 17/11 - 1/3/38
 Tube shaft ✓ Screw shaft 4/9 - 20/9 - 11/10/37 - 17/11 - 1/2/38 Propellers 2/3/38, 11/3/38
 Stern tube 11/3/38, 16/3/38 Engine and boiler seatings 11/2 - 25/2 - 2/3/38 Engines holding down bolts 17/11 - 16/12/37 - 4/1/38
 Completion of fitting sea connections 11/3/38
 Completion of pumping arrangements 29/4/38 Boilers fixed 13/4/38 Engines tried under steam 29/4/38 3/5/38
 Main boiler safety valves adjusted 3/5/38 Thickness of adjusting washers Compression nuts
 Crank shaft material S.M. steel Identification Mark FS 1.9.37. 3712 Thrust shaft material S.M. steel Identification Mark V.S. 3.9.37
 Intermediate shafts, material S.M. steel Identification Marks 888-889-890 V.S. 24.8.37 - 927 V.S. 3.9.37 34.8.37 13323 MB. 27.8.37
 Screw shaft, material S.M. steel Identification Mark R 287 F.M.V. 1.3.38. P.E. Steam Pipes, material S.M. seamless steel Test pressure 46.5 kg/cm² Date of Test 13/4 20/4
 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 no If so, have the requirements of the Rules been complied with yes
 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 no 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 accordance with the Secretary's letters concerning the 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 pipes & headers, feed pipes, oil fuel pipes & bilge pipes in deep tanks were tested as per Rules. The pumping arrangements have been constructed and fitted as approved. The workmanship throughout is good. - The heating coils for oil fuel were tested after assembly in place, the settling tanks were tested after completion and all found satisfactory.
 The machinery was examined under working conditions during dock trials and during a 12 hours trial trip.
 Forging & casting reports are enclosed herewith.

Certificate to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute(s)

The amount of Entry Fee ...	£ 99.50	When applied for,	10/15/38
Special ...	£ 1551.20	When received,	9.6.19.38
Donkey Boiler Fee ...	£ ✓		
Travelling Expenses (if any) ...	£ entered on hull Rpt.		11.6

Purdie Julian Rolis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned fitted for oil fuel 5.38 H.P. at 150° F.
 Spt. J.R. G.

FRI. 24 JUN 1938

