

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 6 NOV 1928

Date of writing Report 10th Nov 1928 When handed in at Local Office 19 Port of HAMBURG
 No. in Survey held at KIEL Date, First Survey 4th May Last Survey 2nd Nov. 1928
 Reg. Book. on the Steel Twin Sc. S. 'ELENA' (Number of Visits 33) Tons { Gross 2609
 Net 1147
 Built at KIEL By whom built HOWALDTSWERKE A.G. Yard No. 690 When built 1928
 Engines made at KIEL By whom made HOWALDTSWERKE A.G. Engine No. 783/24 when made 1928
 Boilers made at KIEL By whom made HOWALDTSWERKE A.G. Boiler No. 1440/41 when made 1928
 Registered Horse Power 2 x 625 Owners CURACOSCHE SCHEEPV. MAATS. Port belonging to WILLEMSTAD
 Nom. Horse Power as per Rule 238 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Trade for which Vessel is intended CARRYING PETROLEUM IN BULK.

ENGINES, &c.—Description of Engines 2 vertical 3 cylinder triple expansion steam engines Revs. per minute 180
 Dia. of Cylinders 325 x 520 x 865 in. Length of Stroke 630 in. No. of Cylinders 2 x 3 No. of Cranks 2 x 3
 Crank shaft, dia. of journals as per Rule 171 in. Crank pin dia. 180 in. Crank webs Mid. length breadth 336 in. Thickness parallel to axis 110 in.
 as fitted 180 in. Mid. length thickness 110 in. Thickness around eye-hole 77 in.
 Intermediate Shafts, diameter as per Rule 163 in. Thrust shaft, diameter at collars as per Rule 171 in.
 as fitted 163 in. as fitted 180 in.
 Tube Shafts, diameter as per Rule 180 in. Screw Shaft, diameter as per Rule 186 in. Is the tubo screw shaft fitted with a continuous liner yes
 as fitted 180 in. as fitted 186 in.
 Bronze Liners, thickness in way of bushes as per Rule 13 in. Thickness between bushes as per Rule 10 in. Is the after end of the liner made watertight in the propeller boss yes
 as fitted 14 in. as fitted 11 in.
 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 no
 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
 Length of Bearing in Stern Bush next to and supporting propeller in bracket 700 in. - stem 860 in.
 Propeller, dia. 2500 in. Pitch 2000 in. No. of Blades 4 Material bronze Whether Moveable no Total Developed Surface 2.18 sq. feet
 Feed Pumps worked from the Main Engines, No. 2 Diameter 90 in. Stroke 230 in. Can one be overhauled while the other is at work yes
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 90 in. Stroke 230 in. Can one be overhauled while the other is at work yes
 Feed Pumps { No. and size 2 - 6" x 8 1/2" x 18" Pumps connected to the { No. and size 1 - 2 cyl. 6" x 6" x 6" - 2 of 90 in. diam. 230 stroke - also 2 of 90 in. diam. 230 stroke - also 2 of 90 in. diam. 230 stroke
 How driven steam (Kiel) Main Bilge Line { How driven steam driven - main engine - steam driven
 Ballast Pumps, No. and size 2 - 2 cyl. 6" x 7 1/2" x 6" Lubricating Oil Pumps, including Spare Pump, No. and size 1
 Are two independent means arranged for circulating water through the Oil Cooler no oil cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 1 of 3 1/4" - 2 of 3" - 2 of 2 1/2" - from after Peak 1 of 3" - 1 of 2" diam.
 In Holds, &c. 2 Pumps Fore-ship steam driven - 1 - 2 cyl. 6" x 6" x 6" - 1 cyl. 8" x 8" x 10" connected to Fore Peak 1 of 3 1/2" - Peak Tank top 2 of 3 1/2" - from hold 2 of 4" - Cofferdam 1 of 4" - from Wing Tank No. 3 - 2 of 4"
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 7 3/4" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1
 Are all the Bilge Suction Pipes in holds and no 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 and 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 none How are they protected no
 What pipes pass through the deep tanks none 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 no tunnel Is it fitted with a watertight door worked from machinery aft

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 4168 sq. ft.
 Is Forced Draft fitted yes No. and Description of Boilers 2 single end, multitubular Working Pressure 180 lbs
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes
 IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? no
 PLANS. Are approved plans forwarded herewith for Shafting yes Main Boilers yes Auxiliary Boilers no Donkey Boilers no
 (If not state date of approval)
 Superheaters no General Pumping Arrangements yes Oil fuel Burning Piping Arrangements See Pump Arrangements

SPARE GEAR. State the articles supplied:— 2 top + 2 bottom end bolts with nuts - 2 main bearing bolts - 1 set of coupling bolts - 1 set of feed and bilge pump valves - 1 set of piston rings - 24 dozen assorted bolts + nuts - iron of various sizes - 100 plates and nuts - 1 crank shaft - 1 propeller shaft - 2 propellers - 1 pair of top end + 1 pair of bottom end brackets - 1 guide shoe complete with bolts - 1 eccentric strap complete - 12 slide valve spindles - 12 junk ring bolts - 10 boiler tubes - 20 condenser tubes - 10 rings for each pair of cylinders - 1 escape valve.

The foregoing is a correct description,

Howaldtswerke A.G.

Manufacturer.



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Lloyd's Register Foundation

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4/5-18/5-23/5-30/5-1/6-4/6-8/6-27/6-23/7-26/7-3/8-8/8-10/8-13/8-17/8-22/8-24/8
 During progress of work in shops - - 27/8-29/8-3/9-5/9/28
 Dates of Survey while building
 During erection on board vessel - - - 12/9-14/9-21/9-24/9-26/9-28/9-3/10-5/10-8/10-12/10-17/10-2/11/28
 Total No. of visits 33.

Dates of Examination of principal parts—Cylinders 27/5-4/8-13/8-17/8/28 Slides 27/5-4/8/28 17/8/28 Covers 13/8-17/8/28
 Pistons 3/8-10/8-22/8-24/8/28 Piston Rods 10/8-24/8/28 Connecting rods 13/8-17/8/28
 Crank shaft 8/6-3/8/28 Thrust shaft 3/8-29/8/28 Intermediate shafts 29/8/28
 Tube shaft Screw shaft 28/9-3/9-5/9/28 Propeller 3/9-5/9/28
 Stern tube 3/8-5/9/28 Engine and boiler seatings 3/9-5/9/28 Engines holding down bolts 28/9/28
 Completion of fitting sea connections 6/9/28
 Completion of pumping arrangements 17/10/28 Boilers fixed 3/10/28 Engines tried under steam 2/11/28
 Main boiler safety valves adjusted 17/10/28 Thickness of adjusting washers $5\frac{1}{2}$ - 8.5 - $9\frac{1}{2}$ Aft. $9\frac{1}{2}$ Aft. $9\frac{1}{2}$
 Crank shaft material S.M. Steel. Identification Mark F.W. 3.8.28. Thrust shaft material S.M. Steel. Identification Mark T.B. 6.7.28.
 Intermediate shafts, material S.M. Steel. Identification Marks T.B. 6.7.28. Tube shaft, material Identification Mark
 Screw shaft, material S.M. Steel. Identification Mark F.W. 3.8.28 Steam Pipes, material Leamington Steel Test pressure 540 lbs. Date of Test 21/9/28
 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 oil tanker If so, have the requirements of the Rules been complied with
 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. Material and workmanship of this machinery are of good quality and the outfit is ample. The materials used in the construction are made at works recognized by the Committee and have been tested in accordance with the requirements of the Rules. The machinery has been constructed and fitted on board under Special Survey in accordance with the approved plan, the Secretary's letters, and otherwise in conformity with the requirements of the Rules. All Rules requirements resp. the use of oil as fuel (Section 20) have been complied with. Pipe-heaters and fittings (supplied from the U.K.) have been tested after jointing to 400 lbs per sq. inch (28 kg) - steam heating coils to 360 lbs per sq. inch, and were found to be in order. I attended to an 8 hour trial trip, when the machinery has given full satisfaction under full working and manoeuvring conditions. This machinery is eligible in my opinion eligible for notification: "L.T.M.C. - 11.28" "Fitted for oil fuel 11.28. F.P. above 150°F" - "Tail Shaft C.L."

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 11.28 C.L. F.D.

T.6cy 13 $\frac{13}{16}$ " (W), 20 $\frac{1}{2}$ " (W), 34 $\frac{1}{16}$ " (W) Fitted for oil fuel 11.28. F.P. above 150°F
 - 24 $\frac{7}{16}$ "
 29/11/28

A. Friedrich
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 4 : - : When applied for,
 Special ... £ 59 : 10 : 23. 11. 19 28
 Donkey Boiler Fee ... £ - : - :
 Travelling Expenses (if any) £ 12 : 8 : 21/12/28

Committee's Minute FRI. 30 NOV 1928

Assigned *Thurs 11.28* J.D. C.L.

Fitted for oil fuel 11.28 F.P. above 150°F



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