

# REPORT ON OIL ENGINE MACHINERY.

No. 12  
-1 DEC 1936

Received at London Office

Date of writing Report 28. 11. 1936 When handed in at Local Office 28. 11. 1936 Port of DANZIG.

No. in Survey held at Elbing + Danzig Date, First Survey 28th September Last Survey 7th Nov 1936  
Reg. Book. Number of Visits 91

90420 on the <sup>Single</sup> Twin <sub>Triple</sub> Screw vessel 'TARIFA' Tons { Gross 4229 Net 4425

Master J. Built at Danzig By whom built F. Schichau G. u. b. H. Yard No. 1357 When built 1936

Engines made at Elbing By whom made F. Schichau G. u. b. H. Engines No. 3636/37 When made 1936

Donkey Boilers made at Kiel By whom made Deutsche Werke A. G. Kiel Boiler No. 1170 When made 1936

Brake Horse Power 8800 Owners W. Wilhelmsen. Oslo. Port belonging to Tonaberg

Nom. Horse Power as per Rule 1827. Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes

II ENGINES, &c.—Type of Engines Schichau Sulzer. 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 60 Kp cm<sup>2</sup> No. of cylinders 16 No. of cranks 16 Diameter of cylinders 650 mm

Length of stroke 1200 mm Revolutions per minute 125 Means of ignition Compression Kind of fuel used Diesel oil

Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 840 mm

Distance between centres of main bearings 1220 mm Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule as approved as fitted 460 mm

Diameter of crank pins 460 mm Breadth of crank webs as per Rule as approved as fitted 209 mm Thickness of ditto as per Rule as approved as fitted 285 mm

Diameter of flywheel shaft as per Rule as approved as fitted 460 mm Diameter of tunnel shaft as per Rule as approved as fitted 350 mm Diameter of thrust shaft as per Rule as approved as fitted 460 mm

Diameter of screw shafts as per Rule as approved as fitted 416 mm Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes

Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the joints burned

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 If without liners, is the shaft arranged to run in oil

Type of outer gland fitted to stern tube Length of stern bush 1800 mm Diameter of propellers 4350 mm

Pitch of propellers 4900 mm No. of blades 4 state whether moveable fixed Total surface Each 7.2 square feet

Method of reversing Oil pressure Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners 46 mm

Are the cylinders fitted with safety valves Yes Means of lubrication Forced Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

No. of cooling water pumps 3 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

No. of bilge pumps fitted to the main engines none Diameter of ditto Stroke

Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines 3 How driven Electrically

Sizes of pumps 80, 80, +150 mm dia No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 22150 + 1290 mm dia

and in holds, etc. 2. 1295 + 1290 mm dia No. of ballast pumps 1 How driven Electrically Sizes of pumps 150 mm dia

Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size 150 mm dia Is a separate auxiliary pump suction fitted in engine room and size

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes

Are the siltices on Engine Room bulkheads always accessible Yes Are all connections with the sea direct on the skin of the ship Yes

Are they valves or cocks both Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates Yes

Are the discharge pipes 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 all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the screw shaft tunnel watertight Yes Is it fitted with a watertight door Yes

Worked from main deck If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

No. of main air compressors No. of stages Diameters Stroke Driven by

No. of auxiliary air compressors 2 No. of stages 2 Diameters 105 + 270 mm Stroke 220 mm Driven by Electric motor

No. of small auxiliary air compressors 1 No. of stages 2 Diameters 45 + 105 mm Stroke 83 + 91 mm Driven by Hand

No. of scavenging air pumps 2 Diameters 1600 mm Stroke 640 mm Driven by main Engine

Diameter of auxiliary Diesel Engine crank shafts as per Rule as approved as fitted Hamburg Reports No. 22007 + 22008 + 22009. Are the air compressors and their coolers made so as to be easy of access Yes

III RECEIVERS:—AUXILIARY STARTING No. of high pressure air receivers 1 Internal diameter 374 mm Cubic capacity of each 200 litres

Material Siemens Martin Steel Seamless, lap welded or riveted longitudinal joint Seamless Range of tensile strength 50 Kp cm<sup>2</sup>

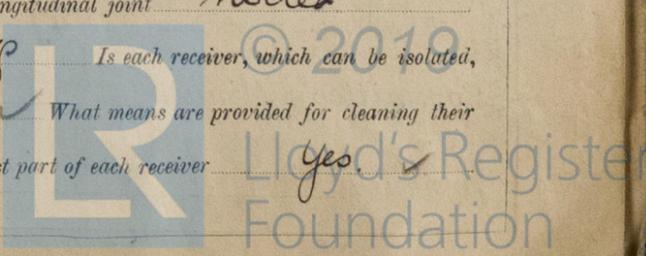
Thickness 8 mm working pressure by Rules 42 Kp cm<sup>2</sup> No. of starting air receivers 4 Internal diameter 1252 mm

Actual cubic capacity 16 cbm + each Material Siemens Martin Steel Seamless, lap welded or riveted longitudinal joint riveted

Range of tensile strength 42.8 - 49.8 Kp cm<sup>2</sup> thickness 28 mm Working pressure by rules 32.5 Kp cm<sup>2</sup> Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes

Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces mechanical Is there a drain arrangement fitted at the lowest part of each receiver Yes

W264-0281



IS A DONKEY BOILER FITTED? *Yes.*

If so, is a report now forwarded? *Yes.* See also Hamburg Report No 21940

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	<i>dates between 17/3/36 and 14/7/36</i>	60 Kgp/cm <sup>2</sup>	110 Kgp/cm <sup>2</sup>	J.C.D with dates	
" " COVERS	<i>dates between 10/3/36 and 14/9/36</i>	60 Kgp/cm <sup>2</sup>	110 Kgp/cm <sup>2</sup>	J.C.D. with dates	
" " JACKETS	<i>dates between 10/3/36 and 14/9/36</i>	2 Kgp/cm <sup>2</sup>	6 Kgp/cm <sup>2</sup>	J.C.D. with dates	
" " OIL WATER PASSAGES	<i>dates between 10/11/36 and 25/5/36</i>	2 Kgp/cm <sup>2</sup>	6 Kgp/cm <sup>2</sup>	J.C.D with dates	
MAIN COMPRESSORS—1st STAGE					
" 2nd "					
" 3rd "					
AIR RECEIVERS—STARTING	<i>28th July 1936</i>	30 Kgp/cm <sup>2</sup>	45 Kgp/cm <sup>2</sup>	J.C.D. with date	
" INJECTION					
AIR PIPES	<i>dates between 24/4/36 and 19/9/36</i>	30 Kgp/cm <sup>2</sup>	80 Kgp/cm <sup>2</sup>	J.C.D. with dates	
FUEL PIPES	<i>dates between 29/5/36 and 19/9/36</i>	230 Kgp/cm <sup>2</sup>	1000 Kgp/cm <sup>2</sup>	J.C.D. with dates	
FUEL PUMPS	<i>dates between 25/5/36 and 5/6/36</i>	230 Kgp/cm <sup>2</sup>	1000 Kgp/cm <sup>2</sup>	J.C.D. with dates	
SILENCER					
" WATER JACKET			<i>head of pressure 2.5 m.</i>		
SEPARATE FUEL TANKS	<i>12/10/36</i>				

PLANS. Are approved plans forwarded herewith for shafting *no. 4 December 1935* Receivers  
(If not, state date of approval)

Separate Tanks

SPARE GEAR *all spare gear as required in Section 9 of the Society's Rules for Heavy oil engines and their auxiliaries have been supplied.*

The foregoing is a correct description,

*F. Schichau G.m.b.H. Elbing*

ppa. *[Signature]* i.v. *[Signature]* Manufacturer.

Dates of Survey while building  
 During progress of work in shops - *1935. Sept 28, Nov 1. 8. 15. 22. 29. Dec 6. 10. 27. 1936. Jan 3. 11. 14. 16. 21. 24. Feb 7. 10. 18. 28. March 3. 6. 10. 13. 17. 20. 24. 27. 31. April 3. 8. 16. 21. 24. 29. May 8. 12. 15. 18. 22. 26. 28. June 5. 12. 15. 19. 26. 30. July 3. 7. 10. 14. 17. 21. 28. Aug 3. 11. 18. 21. 25. Sept 4. 11. 18. 25. Oct 2. 9. 16. 23. 30. Nov 6. 13. 20. 27. Dec 4. 11. 18. 25. 1936. Jan 1. 8. 15. 22. 29. Feb 5. 12. 19. 26. 3. 10. 17. 24. 31. April 7. 14. 21. 28. May 5. 12. 19. 26. 2. 9. 16. 23. 30. June 6. 13. 20. 27. July 4. 11. 18. 25. Aug 2. 9. 16. 23. 30. Sept 6. 13. 20. 27. Oct 4. 11. 18. 25. Nov 2. 9. 16. 23. 30. Dec 7. 14. 21. 28.*

Dates of Examination of principal parts—Cylinders *17/3/36 + 14/7/36* Covers *10/3/36 + 14/9/36* Pistons *10/11/36 + 25/5/36* Rods *15/5/36* Connecting rods *17-21/7/36*  
 Crank shafts *15/6/36* Thrust shafts *15/6/36* Tunnel shafts *19-25/9/36* Screw shafts *20/7/36* Propellers *21/3/36* Stern tubes *15/6/36* Engine seatings *20/8/36*  
 Engines holding down bolts *16/9/36* Completion of pumping arrangements *29/10/36* Engines tried under working conditions *5-7/11/36*  
 Completion of fitting sea connections *12/8/36* Stern tubes *12/8/36* Screw shafts and propellers *12/8/36*  
 Material of crank shafts *745-747 M.B. 15/6/36* Identification Mark on Do. *11937-11939 M.B. 9/3/36* Material of thrust shafts *744 H.B. 15/6/36* Identification Mark on Do. *11936 M.B. 9/3/36*  
 Material of tunnel shafts *32-36 J.C.D. 19/8/36* Identification Marks on Do. *45-47 J.C.D. 21/8/36* Material of screw shafts *725 H.B. 15/6/36* Identification Marks on Do. *11099 J.L. 20/7/36*

Is the flash point of the oil to be used over 150° F. *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.) *These engines have been built under Special Survey in accordance with the Society's Rules, the approved plans, and Secretary's letters, material and workmanship are of good quality. The machinery has been tested under full working and manoeuvring conditions during sea trials giving entire satisfaction, and is eligible in my opinion to have record of + LMC 11.36 Oil Engines.*

Special attention has been given to the capacity of the starting air receivers (as per Secretary's letter of the 27<sup>th</sup> November 1935). The capacity was found sufficient for twelve consecutive startings of each main engine.

The amount of Entry Fee	£ 9 : 18	When applied for,
Special	£ 240 : 6	19
AIR RECEIVERS	£ 13 : 18	When received,
Donkey Boiler Fee	£ 47 : 0	£230-14/- pd. 17/12/36
Travelling Expenses (if any)	£ 47 : 0	Balance pd 12-1-37 2/5/1

*Richard Shaw*  
 Engineer Surveyor to Lloyd's Register of Shipping.  
*James C. Dykes*  
 Surveyor to Lloyd's Register of Shipping

Committee's Minute *TUE. 22 DEC 1936*  
 Assigned *+ dmb. 11.36*  
*1 D.B. 100k*  
*1 D.B. (WTS) 100k*  
*old. Ch*

FRI 5 MAR 1937  
 FRI 7 MAY 1937  
 FRI 6 AUG 1937



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