

Rpt. 4b

# REPORT ON OIL ENGINE MACHINERY.

No. 86497

Received at London Office

-2 DEC 1930

Date of writing Report 28<sup>th</sup> Nov 1930. Port of NEWCASTLE-ON-TYNE. When handed in at Local Office

No. in Survey held at Newcastle. Date, First Survey 28 March Last Survey 26<sup>th</sup> Nov 1930. Reg. Book. Number of Visits 93.

89448 on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel M.V. "ATTILA" Tons {Gross 7913 Net 4729

Built at Walker By whom built Messrs. W. G. Armstrong Whitworth & Co. Ltd. Yard No. 1066 When built 1930.

Engines made at Scotswood By whom made Messrs. W. G. Armstrong Whitworth & Co. Ltd. Engine No. 94 When made 1930.

Donkey Boilers made at Scotswood By whom made Messrs. W. G. Armstrong Whitworth & Co. Ltd. Boiler No. 94. When made 1930.

Brake Horse Power 3300. Owners JAKHELLN. Port belonging to OSLO.

Net Horse Power as per Rule 776. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended Ocean Going. 23 5/8 4 1/4

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

Maximum pressure in cylinders 300 lb/sq. in. Diameter of cylinders 600 mm Length of stroke 1060 mm No. of cylinders 8. No. of cranks 8.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 860 mm Is there a bearing between each crank Yes.

Revolutions per minute 128 Flywheel dia. 2075 mm Weight 4.6 tons Means of ignition Compression Kind of fuel used Crude Oil.

Crank Shaft, dia. of journals as per Rule 403 mm as fitted 420 mm Crank pin dia. 420 mm Crank Webs Mid. length breadth 500 mm Thickness parallel to axis shrunk Thickness around eye-hole Solid.

Intermediate Shafts, diameter as per Rule 12.03 mm as fitted 12.03 mm Thrust Shaft, diameter at collars as per Rule 403 mm as fitted 420 mm

Tube Shaft, diameter as per Rule 13.28 mm as fitted 13.28 mm Is the shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 13.75 mm as fitted 13.75 mm Thickness between bushes as per Rule 4.99 mm as fitted 4.99 mm 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 junctions made by fusion through the whole thickness of the liner Continuous 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 Yes. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yes.

Propeller, dia. 15' 0" Pitch 11' 3" No. of blades 4. Material Bronze whether Moveable Solid Total Developed Surface 80 sq. feet

Method of reversing Engines Semo Motor Is a governor or other arrangement fitted to prevent racing of the engine Yes. Means of lubrication Forced

Thickness of cylinder liners 20 mm Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Ragged. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine in funnel Yes.

Cooling Water Pumps, No. Three Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.

Bilge Pumps worked from the Main Engines, No. 2. Diameter 6" Stroke 15 3/4" Can one be overhauled while the other is at work Yes.

Pumps connected to the Main Bilge Line No. and Size Two. one @ 8" x 9" x 12" & one @ 10 1/2" x 14" x 24" How driven Steam

Ballast Pumps, No. and size one @ 10 1/2" x 14" x 24" Lubricating Oil Pumps, including Spare Pump, No. and size Two. one @ 6 1/2" x 9" one @ 7" x 7" x 15"

Are two independent means arranged for circulating water through the Oil Cooler None fitted. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge pumps, No. and size:—In Machinery Spaces Two @ 3 1/2" dia, Two @ 2 1/2" dia, Two @ 5" dia.

Holds, &c. Fore Peak 3" dia aft Peak 4" dia Ford Cofferdam 4" dia aft Cofferdam 4" dia Hold 2 @ 2" dia!

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One @ 5" dia

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. Are the Bilge Suctions in the Machinery Spaces 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 Both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform 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.

Do all pipes pass through the bunkers None How are they protected Yes.

Do all pipes pass through the deep tanks Yes. 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 Yes.

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes.

Main Air Compressors, No. One. No. of stages 3. Diameters 5 1/2" x 4 1/2" x 1 1/2" Stroke 600 mm Driven by Main Engine

Auxiliary Air Compressors, No. One (2000 ft) No. of stages 3. Diameters 13 1/2" x 10 1/4" x 3 1/4" Stroke 8" Driven by Steam

Small Auxiliary Air Compressors, No. One (800 ft) No. of stages 3. Diameters 10 1/2" x 8 1/4" x 2 1/2" Stroke 6" Driven by Steam

Revolving Air Pumps, No. One (Tandem) Diameter 14 00 mm Stroke 680 mm Driven by Main Engine.

Auxiliary Engines crank shafts, diameter as per Rule as fitted

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes. Are the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Steam

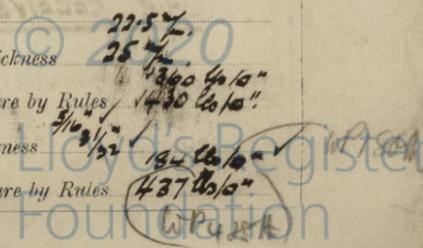
Is there a drain arrangement fitted at the lowest part of each receiver Yes. 8-4 on ft 28 cu ft. Internal diameter 540 mm thickness 25 mm

High Pressure Air Receivers, No. 4 @ 1000 lb. Cubic capacity of each 472 cu ft. Material Seamless steel Range of tensile strength 28-32 tons Working pressure by Rules 130 lb/sq. in.

Working Air Receivers, No. 2 @ 425 lb. Total cubic capacity 540 cu ft. Material Riveted steel Range of tensile strength 28-32 tons Working pressure by Rules 130 lb/sq. in.

Length.	Water Capac
Feet.	Tons.
13.7	134
15.7	179
18.0	387

004206-004212-0190



**DONKEY BOILERS FITTED?**

*Yes*

If so, is a report now forwarded?

*8.5.30*

PLANS. Are approved plans forwarded herewith for Shafting *23.12.29 & 27.1.30* Receivers *7.8.30* Separate Tanks *30.8.30*  
 Donkey Boilers *8.5.30* General Pumping Arrangements *30.5.30* Oil Fuel Burning Arrangements *16.9.30*

SPARE GEAR *1 cyl cover complete with all valves etc & one complete set of valves for one cylinder springs etc, fuel needle valves for half the number of cylinders, 1 piston complete with all piston rings, studs & nuts, 1 set of piston rings for 1 piston, 2 telescopic cooling pipes for one piston, 1 set of oke wheels for the Cam shaft drive, 1 set of studs & nuts for one cyl cover, 2 crosshead bearing bolts & nuts, 2 crank pin bearing bolts, 1 set of bolts for crank shaft coupling, 1 set of bolts for the intermediate shaft coupling, 2 cyl liners, 1 piston skirt, 1 pair of main bearing brasses. Main & Aux Compressors & Pumps. 1 set of piston rings for each compressor piston, 1 half set of suction & delivery valves for each stage, 2 bottom end bolts for the main compressor, 10% of the suction & delivery valves, 2 bottom end & 2 top end bolts for the scavange air pump, 1 set of piston rings, valves & seats etc for each stage of aux compressor, all working parts for one fuel pump. Auxiliary Pumps. 1 suction & one delivery valve for Oil Fuel Transfer Pump, 1 suction & delivery valve for bilge pump, a quantity of assorted bolts & nuts, a length of pipe of each size used for the fuel del & injection air pipes & the air del from main & aux compressors to receivers with unions & flanges suitable for each. 1 screw shaft & propeller & other spare gear.*  
 The foregoing is a correct description,

FOR *J. H. Farrell & Co.*  
 SIR W. G. ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED. Manufacturer.

Dates of Survey while building	During progress of work in shops --	<i>1930</i> <i>Mon. 28. Apr. 28.30. May 21. June 5. 10. 15. 16. 18. 19. July 1. 2. 4. 7. 9. 15. 16. 17. 18. 23. 25. 28. 29. 30. 31. Aug. 1. 6. 8. 15. 20.</i>
	During erection on board vessel --	<i>21. 22. 23. 25. 26. 27. 28. 29. Sep. 1. 2. 3. 4. 5. 8. 9. 10. 12. 15. 16. 17. 18. 19. 22. 23. 24. 25. 26. 27. 29. 30. Oct. 1. 3. 4. 6. 7. 8. 10. 14. 16. 20. 22. 23. 24. 27. 28. 29. 30. 31. Nov. 2. 4. 5. 6. 10. 11. 12. 13. 14. 15. 17. 18. 21. 25. 26.</i>
	Total No. of visits	<i>93.</i>
Dates of Examination of principal parts	Cylinders	<i>9.9.30.</i>
	Covers	<i>28.5.30.</i>
	Pistons	<i>24.9.30.</i>
	Rods	<i>26.8.30.</i>
	Connecting rods	<i>18.9.30.</i>
Crank shaft	<i>21.9.30.</i>	COMPRESSOR shaft <i>21.8.30.</i>
	FLYWHEEL	Thrust shaft <i>24.7.30.</i>
	Intermediate shafts	<i>25.9.30.</i>
	Tube shaft	<i>✓</i>
Screw shaft	<i>25.9.30.</i>	Propeller <i>25.9.30.</i>
	Stern tube	<i>27.9.30.</i>
	Engine seatings	<i>7.10.30.</i>
	Engines holding down bolts	<i>27.10.30.</i>
Completion of fitting sea connections	<i>7.10.30.</i>	Completion of pumping arrangements <i>19.11.30.</i>
	Engines tried under working conditions	<i>26.11.30.</i>
Crank shaft, Material	<i>Steel</i>	Identification Mark <i>8247 &amp; 3550.</i>
	COMPRESSOR shaft, Material	<i>Steel</i>
	Identification Mark	<i>7898.</i>
FLYWHEEL	Thrust shaft, Material	<i>Steel</i>
	Identification Mark	<i>1815.</i>
	Intermediate shafts, Material	<i>Steel</i>
	Identification Marks	<i>1985.</i>
Tube shaft, Material	<i>✓</i>	Identification Mark <i>✓</i>
	Screw shaft, Material	<i>Steel</i>
	Identification Mark	<i>Share 1926. Working 1925.</i>
Is the flash point of the oil to be used over 150° F.	<i>Yes.</i>	
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with	<i>Yes.</i>	
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo	<i>Oil Tanker</i>	If so, have the requirements of the Rules been complied with <i>✓</i>
Is this machinery duplicate of a previous case	<i>No.</i>	If so, state name of vessel <i>✓</i>

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery has been built under Special Survey and in accordance with the Societys Rules & approved Plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board, tested & manoeuvred on completion under working conditions and found satisfactory. The machinery of this vessel is eligible in my opinion to be classed and to have the notation of "oil engine" and records of LMC 11, 30 and TS Ct.*

The amount of Entry Fee	£ 6 : - : -	When applied for, <i>-1 DEC 1930</i>
Special	£ 113 : 16 : -	
Donkey Boilers Fee	£ 22 : 16 : -	When received, <i>13.12.30</i>
AIR RECEIVERS	£ 6 : 6 : -	

*L. J. Pickett.*  
 Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute *TUE. 9 DEC 1930*  
 Assigned *+ Lmc. 11.30 oil Eng. Cf. 2 SB-150*

Newcastle-on-Tyne

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

Rpt. 5a.  
 Date of writing  
 No. in Reg. Book.  
 89443.  
 Master  
 Engines ma  
 Boilers ma  
 Nominal H  
 MULTI  
 Manufact  
 Total Hea  
 No. and D  
 Tested by  
 Area of F  
 Area of e  
 In case of  
 Smallest a  
 Smallest a  
 Largest in  
 Thickness  
 long. seam  
 Percentag  
 Percentag  
 Thickness  
 Material  
 Length of  
 Dimensio  
 End plat  
 How are  
 Tube pla  
 Mean pi  
 Girders  
 at centre  
 in each  
 Tensile  
 Pitch of  
 Working  
 Thicknes  
 Pitch of  
 Working  
 Diameter  
 Working  
 Diameter