

REPORT ON OIL ENGINE MACHINERY.

No. 45666
19 MAY 1926

Received at London Office

Date of writing Report

When handed in at Local Office

17.5.26 Port of GLASGOW

To. in Survey held at GLASGOW

Date, First Survey 4.9.25 Last Survey 10.4 May 1926

eg. Book.

Number of Visits

7931 on the ^{Single} Twin } Screw vessels APAPA

M/s No 695 AUXILIARY ENGINES (3)

Tons { Gross
Net

Master Built at BELFAST By whom built HARLAND & WOLFE LTD Yard No. 695 When built 1926

Engines made at GLASGOW By whom made HARLAND & WOLFE LTD Engine No. 695 When made 1926

Monkey Boilers made at By whom made Boiler No. When made

Indicated Horse Power 297 EACH Owners MESSRS ELDER Dempster & Co. Ltd Port belonging to Liverpool

Net Horse Power as per Rule 85 EACH Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted YES

MAIN ENGINES, &c.—Type of Engines DIESEL 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 500 LBS/SQ No. of cylinders 4 EACH No. of cranks 4 Diameter of cylinders 410 mm 16.14

Length of stroke 520 mm 20.47 Revolutions per minute 200 Means of ignition COMPRESSION Kind of fuel used ABOVE 150°F

Is there a bearing between each crank YES Span of bearings (Page 92, Section 2, par. 7 of Rules) 484 mm

Distance between centres of main bearings 830 mm Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 235 mm 9.25

Diameter of crank pins 235 mm Breadth of crank webs METAL as per Rule 103 mm as fitted 25 mm Thickness of ditto as per Rule 31.6 mm as fitted 117 mm

Diameter of flywheel shaft as per Rule 235 mm as fitted 235 mm Diameter of tunnel shaft as per Rule as fitted Diameter of thrust shaft as per Rule as fitted

Diameter of screw shaft as per Rule as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube

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

Does 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

Are two liners are fitted, is the shaft lapped or protected between the liners If without liners, is the shaft arranged to run in oil

Is the outer gland fitted to stern tube Length of stern bush Diameter of propeller

Number of propeller No. of blades state whether moveable Total surface square feet 700 34.5 mm

Method of starting COMPRESSED AIR Is a governor or other arrangement fitted to prevent racing of the engine when detached YES Thickness of cylinder liners 11.0 mm 30 mm

Are the cylinders fitted with safety valves YES Means of lubrication FORCED & SIGHT FEED Are the exhaust pipes and silencers water cooled or lagged with conducting material 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 Is the sea suction provided with an efficient strainer which can be cleared

Are there pumps in the vessel No. of bilge pumps fitted to the main engines Diameter of ditto Stroke

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

Number of pumps No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room

Are there pumps in holds, etc. No. of ballast pumps How driven Sizes of pumps

Is the ballast pump fitted with a direct suction from the engine room bilges State size Is a separate auxiliary pump suction fitted in

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

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

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

Are the discharge pipes above or below the deep water line Are they each fitted with a discharge valve always accessible on the plating of the vessel

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

communication between the sea and the bilges Is the screw shaft tunnel watertight Is it fitted with a watertight door

Is the bilge pumped from If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

AUX. ENGINE of main air compressors 1 EACH ENGINE No. of stages 3 (65 kg/cm²) Diameter 270 x 235 x 60 mm Stroke 270 mm Driven by DIESEL AUX. ENGINE

of auxiliary air compressors 2 No. of stages 2 (25 kg/cm²) Diameters 460 x 405 mm Stroke 260 mm Driven by ELECTRIC MOTOR

of small auxiliary air compressors 1 No. of stages 2 (65 kg/cm²) Diameters 106 x 34 mm Stroke 80 mm Driven by STEAM CYLINDER

of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access YES

RECEIVERS:—No. of high pressure air receivers 3 Internal diameter 295 mm Cubic capacity of each 8.8 LITRES

Material SOLID DRAWN STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS Range of tensile strength 28/32 TONS

Thickness .57" MIN. working pressure by Rules 1350 LBS/SQ No. of starting air receivers 1 Internal diameter 295 mm

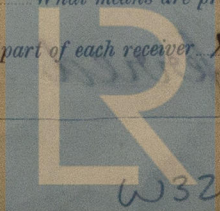
Cubic capacity 150 LITRES Material SOLID DRAWN STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS

Range of tensile strength 28/32 TONS thickness .59" MIN. Working pressure by rules 1400 LBS/SQ Is each receiver, which can be isolated,

fitted with a safety valve as per Rule H.P. COMPRESSOR Can the internal surfaces of the receivers be examined YES

What means are provided for cleaning their

Internal surfaces REMOVABLE ENDS Is there a drain arrangement fitted at the lowest part of each receiver YES



Lloyd's Register
Foundation

If so, is a report now forwarded?

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	✓	✓	✓	✓	
" " COVERS	9-2-26 to 3-5-26	15 LBS/□	50 LBS/□	4 m.b.	
" " JACKETS.....	25-1-26 to 8-3-26	15 LBS/□	50 LBS	4 m.b.	
" PISTON WATER PASSAGES.....	TRUNK PISTONS	✓	✓	✓	
MAIN COMPRESSORS—1st STAGE.. L.P.	} 25-1-26 to 8-2-26	71 LBS/□	} 500 LBS/□	4 m.b. 2 H.P.S.	
" 2nd " M.P.		220 LBS/□			
" 3rd " H.P.		1000 LBS/□			
AIR RECEIVERS—STARTING	30-11-25	1000 LBS/□	2000 LBS/□	4 m.b.	A.V. N ^o 778
" INJECTION	30-11-25	1000 LBS/□	2000 LBS/□	4 m.b.	A.V. N ^{os} 779-80
AIR PIPES SAFETY VALVES.....	29-1-26	ADJUSTED TO 1000 LBS/□		4 m.b.	
FUEL PIPES.....	✓	✓	✓	✓	
FUEL PUMPS	✓	✓	✓	✓	
SILENCER	✓	✓	✓	✓	
" WATER JACKET	✓	✓	✓	✓	
SEPARATE FUEL TANKS	✓	✓	✓	✓	

Receivers *STANDARD*

Separate Tanks SEE MAIN ENGINE

Will be supplied as per attached list.

J. C. Green,

Manufacturer.

MANAGER FINNIESTON WORKS

Dates of Survey while building	During progress of work in shops -- } During erection on board vessel -- } <u>1925</u> Sept 4-18 Oct 5-16 Nov 10-11-12-17-30 Dec 3-4-7-11-14-16-29 (1926) Jan 19-20-21-25-26-27-29 Feb. 1-3-4-9-10-16-24-25-26 Mar. 1-2-8-12 Apr 1 May 3-10 Total No. of visits <u>41</u>
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Dates of Examination of principal parts—Cylinders 25/12/61 7/3/62 Covers 9/2/61 7/3/62 Pistons 24/2/61 2/3/62 Rods ✓ Connecting rods 24/2/61

Crank shaft ^{N. 213 11/12/18} Thrust shaft ✓ Tunnel shafts ✓ Screw shaft ✓ Propeller ✓ Stern tube ✓ Engine seatings ✓

Engines holding down bolts ✓ *Completion of pumping arrangements* ✓ *Engines tried under working conditions* ✓

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shaft **STEEL** Identification Mark on Do. **LL0405** Material of thrust shaft ☒ Identification Mark on Do. ☒

Is the flash point of the oil to be used over 150° F. **YES**

Is this machinery duplicate of a previous case YES If so, state name of vessel M/S "GLENSHIEL" (AUXILIARY ENGINES)

General Remarks (State quality of workmanship, opinions as to class, &c.)

Three Auxiliary Engines have been built under special survey, the material and workmanship are sound and good. They have now been shipped to Belfast for installation in the vessel there.

These Engines have been efficiently installed and fastened on board the vessel. They have been tried out under working conditions with satisfactory results.

Ref. Annex.

The amount of Entry Fee ... £ : : When applied for.

Special **3 ENGINES.** £ 25 : 10/-: A19

Donkey Boiler Fee	...	£	:	:	When received.
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Travelling Expenses (if any) £ : : 5th July 197

Committee's Minute GLASGOW 18 MAY 1926

Assigned Deferred.

TUES. 1 FEB 1927

Wm: Crumick
Engineer Surveyor to Lloyd's Register of Shipping.

Del: Sept
No. 9678