

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

Received at London Office 24 FEB 1926

Date of writing Report 19th Feb. 1926. When handed in at Local Office 19.2.26 Port of GLASGOW

No. in Survey held at GLASGOW Date, First Survey 2.7.25 Last Survey 5th Feb. 1926
Reg. Book. Number of Visits 42

on the ^{Single} Twin } Screw vessels New Steel Mt. Accra. M/S No 616 AUXILIARY ENGINES (3) Tons ^{Gross} _{Net}

Master Built at BELFAST By whom built HARLAND & WOLFF LTD Yard No. 616 When built 1926

Engines made at GLASGOW By whom made HARLAND & WOLFF LTD Engine No. 616 When made 1926

Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 297 EACH KWTS. 200 EACH Owners Messrs Elder Dempster Co. Ltd. Port belonging to Liverpool.

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

TYPE ENGINES, &c.—Type of Engines ^{AUX.} DIESEL Auxiliary 3 type 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

Length of stroke 520 mm 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 ✓
as fitted 235 mm ✓

Diameter of crank pins 235 mm ✓ Breadth of crank webs ^{METAL} as per Rule 103 mm ✓ as fitted 125 mm ✓ Thickness of ditto as per Rule 131.6 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 do 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 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 ✓ Diameter of propeller ✓

Pitch of propeller ✓ No. of blades ✓ state whether moveable ✓ Total surface ✓ square feet
Top 34.5 mm ✓
Bottom 30 mm ✓

Method of ^{STARTING} COMPRESSED AIR is a governor or other arrangement fitted to prevent racing of the engines when detached YES Thickness of cylinder liners 7/27 Bot 30 mm ✓

Are the cylinders fitted with safety valves YES Means of lubrication FORCED & SLIGHT FEED Are the exhaust pipes and silencers water cooled or lagged with
non-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 ✓

Is there a bilge pump on the vessel ✓ No. of cooling water pumps ✓ Is the sea suction provided with an efficient strainer which can be cleared ✓

Can one be overhauled while the other is at work ✓ No. of bilge pumps fitted to the main engines ✓ Diameter of ditto ✓ Stroke ✓

Are the pumps ✓ No. of auxiliary pumps connected to the main bilge lines ✓ How driven ✓

Are the pumps in holds, etc. ✓ No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room ✓

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 tunnel ✓ 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) Diameters 270 x 235 x 60 mm Stroke 270 mm Driven by 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 88 LITRES

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

Thickness .58" MIN. working pressure by Rules 1375 LBS/SQ ✓ No. of starting air receivers 1 Internal diameter 295 mm

Starting cubic capacity 150 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 1300 LBS/SQ ✓ Is each receiver, which can be isolated,
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
surfaces REMOVABLE ENDS Is there a drain arrangement fitted at the lowest part of each receiver YES



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS	4-11-25 to 24-11-25	15 LBS/SQ	50 LBS/SQ	Hmb.	
JACKETS	16-10-25 to 18-11-25	15 LBS/SQ	50 LBS/SQ	Hmb.	
PISTON WATER PASSAGES	TRUNK PISTONS				
MAIN COMPRESSORS—1st STAGE	26-10-25 to 23-11-25	7 1/2 LBS/SQ	500 LBS/SQ	Hmb. & J.D.B.	
2nd " M.P.		220 LBS/SQ			
3rd " H.P.	23-10-25 to 30-11-25	1000 LBS/SQ	2000 LBS/SQ	Hmb.	
AIR RECEIVERS—STARTING	21-10-25	1000 LBS/SQ	2000 LBS/SQ	Hmb.	A.V. N. 774
INJECTION	21-10-25	1000 LBS/SQ	2000 LBS/SQ	Hmb.	A.V. N. 775-6, 7.
AIR PIPES SAFETY VALVES	31-12-25	ADJUSTED TO 1000 LBS/SQ		Hmb.	
FUEL PIPES					
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting *No*
(If not, state date of approval)

Receivers. *STANDARD*

Separate Tanks *SEE MAIN ENGINE R*

SPARE GEAR

*Will be supplied as per attached list.
Spare gear now fitted on board & all in order.*

The foregoing is a correct description,
For **HARLAND & WOLFF, LTD.**
S. C. Green. Manufacturer.

MANAGER, PINNISTON WORKS

Dates of Survey while building
 During progress of work in shops -- *1925 July 2, Aug 4, 21, Sept 2, 4, 18, 25, Oct 5, 9, 16, 21, 23, 26, 30, Nov 2, 4, 6, 9, 11, 12, 13, 19, 20, 23, 24, 26, 28, Dec 1, 4, 7, 16, 21, 30, 31, 1926, Feb 1, 4, 5.*
 During erection on board vessel --
 Total No. of visits *42.*

Dates of Examination of principal parts—Cylinder *16/10/25 to 18/11/25* Covers *4/11/25 to 24/11/25* Pistons *17 & 30/11/25* Rods ✓ Connecting rods *11/12/25*
 Crank shaft *N.1. 31/8/25 N.616* 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. *N.616 LLOYD Hmb.* Material of thrust shaft ✓ Identification Mark on Do. ✓
 Material of tunnel shafts ✓ Identification Marks on Do. ✓ Material of screw shafts ✓ Identification Marks 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 *N/S "GLENSHIEL" (AUXILIARY ENGINES)*

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

These Auxiliary Engines have been built under Special Survey, the materials and workmanship are sound and good. They have now been shipped to Belfast for installation in the vessel there. Auxiliary engines & generators secured in place & tried under full working conditions.

The amount of Entry Fee ... £ ✓
 Special *3 ENGINES.* £ *25 : 10/*
 Donkey Boiler Fee ... £ ✓
 Travelling Expenses (if any) £ ✓

When applied for, *To be collected at Belfast.*
 When received, *5th July 1926*

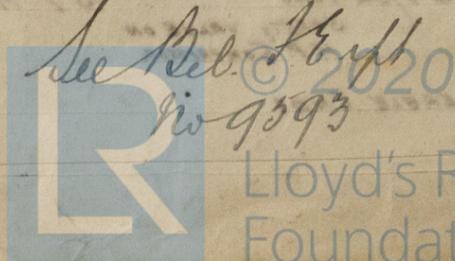
William Duff
H. M. Currier
 Engineer Surveyor to Lloyd's Register of Shipping

FRI. 20 AUG 1926

Committee's Minute

Assigned *Deferred.*

GLASGOW



Lloyd's Register Foundation