

REPORT ON OIL ENGINE MACHINERY.

No. 45270

30 DEC 1925

Received at London Office

Date of writing Report

19

When handed in at Local Office

26.12.25 Port of GLASGOW

No. in Survey held at GLASGOW

Date, First Survey 15.8.24 Last Survey 18th Dec 1925

Reg. Book.

Number of Visits 49

on the ^{Single} ~~Triple~~ Screw vessel "KING MALCOLM"Tons { Gross 5064
Net 3127

Master Built at GLASGOW By whom built D. W. HENDERSON, LTD. Yard No. 692 M. When built 1925

Engines made at GLASGOW By whom made HARLAND & WOLFF LTD. Engine No. 692 When made 1925

Donkey Boilers made at ANNAN By whom made COCHRAN & CO. Boiler No. 16775 When made 1925

Brake Horse Power 1850 Owners BRITISH MOTORSHIP CO. LTD. Port belonging to LONDON

Nom. Horse Power as per Rule 489 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

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

Maximum pressure in cylinders 500 LBS/SQ IN. No. of cylinders SIX No. of cranks SIX Diameter of cylinders 740 mm

Length of stroke 1500 mm Revolutions per minute 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) 1004 mm

Distance between centres of main bearings 1450 mm Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 470 mm

Diameter of crank pins 485 mm METAL ROUND as per Rule 206 mm Thickness of ditto as per Rule 294 mm

Diameter of flywheel shaft as per Rule 470 mm as fitted 485 mm Diameter of tunnel shaft as per Rule 13 3/8" as fitted 13 1/2" Thickness of ditto as per Rule 294 mm as fitted 310 mm

Diameter of screw shaft as per Rule 14" as fitted 14 1/4" 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 YES

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 YES

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

Type of outer gland fitted to stern tube WOOD LINED, No. 0.9 Length of stern bush 5'-8" GLAND BUSH 1'-6" Diameter of propeller 15'-6"

Pitch of propeller 12'-3" 18'-9" SET 13'-0" No. of blades 4 state whether moveable YES Total surface 76 square feet

Method of reversing COMPRESSED AIR Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Thickness of cylinder liners TOP 60 mm BOT. 40 mm

Are the cylinders fitted with safety valves YES Means of lubrication FORCED & SIGHT FEED Are the exhaust pipes and silencers water cooled & lagged with conducting material YES

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

No. of cooling water pumps TWO Is the sea suction provided with an efficient strainer which can be cleared in 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 YES No. of auxiliary pumps connected to the main bilge lines TWO How driven ELECTRIC MOTOR

Suction of pumps BALLAST 9" X 10" DUPLEX No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps: In engine room 20 1/2" X 20 3/4" DIA. 40 3" COPPER DRANS.

In holds, etc. 8 1/2" FOR 2 HOLDS, 20 3" AFT HOLD, 10 3" TUNNEL No. of ballast pumps ONE How driven ELECTRIC MOTOR Sizes of pumps 9" X 10" DUPLEX

Is the ballast pump fitted with a direct suction from the engine room bilges YES State size 5" DIA. Is a separate auxiliary pump suction fitted in the Room and size YES

Are all the bilge suction pipes fitted with roses OR TAIL PIPES YES Are the roses in Engine Room always accessible YES

Are the sluices 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 YES 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 YES 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

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

No. of main air compressors ONE (65 cu. ft.) No. of stages 3 Diameters 750 x 675 x 150 mm Stroke 460 mm Driven by MAIN ENGINE

No. of auxiliary air compressors ONE (65 cu. ft.) No. of stages 3 Diameters 360 x 315 x 72 mm Stroke 230 mm Driven by ELECTRIC MOTOR

No. of small auxiliary air compressors ONE (65 cu. ft.) No. of stages 2 Diameters 106 x 84 mm Stroke 80 mm Driven by STEAM CYLINDER

No. of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule 167 mm as fitted 170 mm Are the air compressors and their coolers made so as to be easy of access YES

RECEIVERS:—No. of high pressure air receivers SIX Internal diameter 295 mm Cubic capacity of each 3 @ 150 LITRES EACH 30 88 "

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

Thickness .57" working pressure by Rules 1350 LBS/SQ IN. No. of starting air receivers TWO Internal diameter 6'-0 3/8"

Cubic capacity 1078 CU. FT. Material STEEL Seamless, lap welded or riveted longitudinal joint T. R. D. B. S.

Range of tensile strength 28/32 TONS thickness END 1 1/2" x 1 1/2" SHELL 1 1/2" Working pressure by rules 360.7 LBS/SQ IN. Is each receiver, which can be isolated, with a safety valve as per Rule ONE ON COMMON PIPE Can the internal surfaces of the receivers be examined YES

What means are provided for cleaning their surfaces LOOSE ENDS & MANHOLE DOORS. Is there a drain arrangement fitted at the lowest part of each receiver YES

W184-0178

IS A DONKEY BOILER FITTED? YES

If so, is a report now forwarded? Yes Glasgow N. 4456

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS	11-3-25 to 16-3-25	15 LBS/SQ	50 LBS/SQ	Amib	
JACKETS	11-3-25 to 16-3-25	15 LBS/SQ	50 LBS/SQ	Amib	
PISTON WATER PASSAGES	23-2-25 to 5-3-25	15 LBS/SQ	50 LBS/SQ	Amib	
MAIN COMPRESSORS—1st STAGE	24-2-25 to 25-2-25	71 LBS/SQ	150 LBS/SQ	Amib	
2nd	24-2-25	220 LBS/SQ	500 LBS/SQ	Amib	
3rd	25-2-25	1000 LBS/SQ	2000 LBS/SQ	Amib	
AIR RECEIVERS—STARTING	2-7-25	356 LBS/SQ	585 LBS/SQ	W.B.	BELFAST REPORT N. 937
INJECTION	13-3-25 to 8-4-25	1000 LBS/SQ	2000 LBS/SQ	Amib	A.V. N. 686-7-8-9-90
AIR PIPES ETC. STARTING	10-3-25 to 16-9-25	356 LBS/SQ	712 LBS/SQ	Amib & W.L.	
FUEL PIPES FILLING & SUCTIONS	10-9-25		30 LBS/SQ		
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS	10-7-25		10 LBS/SQ	Amib	

PLANS. Are approved plans forwarded herewith for shafting SENT M/S "ELM WORTH" Receivers 24/12/24 Separate Tanks Standard

SPARE GEAR

Supplied as per attached list.

The foregoing is a correct description,

For HARLAND & WOLFF, LTD.

F. C. Green

Manufacturer.

MANAGER FINNIESTON WORKS

Dates of Survey while building
During progress of work in shops—1924. Aug 15. Oct 22. Nov 12. 1925. July 12. July 3. 9. 10. 11. 13. 17. 18. 19. 22. 24. 25. 26.
During erection on board vessel—Mar 5. 9. 10. 11. 12. 13. 14. 15. 20. 23. 30. Apr 6. 8. 14. 21. 24. May 5. 13. 26. 28. June 5. 9. 10.
Total No. of visits 49.

Dates of Examination of principal parts—Cylinders 11/3/25 Covers 11/3/25 Pistons 23/2/25 Rods 19/2/25 Connecting rods 18/2/25
Crank shaft 11/3/25 Thrust shaft 5/6/25 Tunnel shafts 5/6/25 Screw shaft 17/2/25 Propeller 16/3/25 Stern tube 26/5/25 Engine seatings 8/3/25
Engines holding down bolts 3/9/25 Completion of pumping arrangements 24/9/25 Engines tried under working conditions 18/12/25
Completion of fitting sea connections 6/7/25 Stern tube 30/6/25 Screw shaft and propeller 6/7/25
Material of crank shaft STEEL Identification Mark on Do. SEE UNDER Material of thrust shaft STEEL Identification Mark on Do. 1435 240/05 486 T.H.
Material of tunnel shafts STEEL Identification Marks on Do. SEE UNDER Material of screw shafts STEEL Identification Marks on Do. 1781 240/05 562 T.H.
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 "KING JAMES"

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

TUNNEL SHAFTS:— N. 1 1852 2334 1863 240/05 570 730 584 T.H. 19/12/24 T.P. 6/3/25 T.H. 6/25

This machinery has been constructed under special survey in accordance with the rules and approved plans. The materials and workmanship are sound and good and it has been fitted on board the vessel in an efficient manner, tried under full power working conditions and everything found satisfactory and is in my opinion eligible to be classed with record of L.M.C. 12-25.

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 98 : 7 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 26-12-25
When received, 26

Committee's Minute GLASGOW 29 DEC 1925

Assigned + LMC 12,25

H. M. Crinick
Engineer Surveyor to Lloyd's Register of Shipping



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Foundation