

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 44511

Received at London Office

25 MAR 1925

Date of writing Report 21<sup>st</sup> March 1925 When handed in at Local Office 23. 3. 1925 Port of GLASGOWNo. in Survey held at GLASGOW  
Reg. Book. 5422Date, First Survey 14. 6. 24 Last Survey 19<sup>th</sup> MARCH 1925

Number of Visits 60.

90963 on the Single } Screw vessels "THISTLEROS"  
Twin }  
Triple }Tons { Gross 4615  
Net 2705

Master Built at GLASGOW By whom built D.W. HENDERSON LTD. Yard No. 675M When built 1925

Engines made at GLASGOW By whom made HARLAND &amp; WOLFF LTD. Engine No. 675M When made 1925

Donkey Boilers made at ANNAN By whom made COCHRAN &amp; CO Boiler No. 16390 When made 1924

Brake Horse Power 1850 Owners MESSRS ALLAN BLACK &amp; CO Port belonging to SUNDERLAND

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

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

Maximum pressure in cylinders 500 LBS/□ ✓ No. of cylinders 6 ✓ No. of cranks 6 ✓ Diameter of cylinders 740<sup>mm</sup> ✓Length of stroke 1500<sup>mm</sup> ✓ Revolutions per minute 90 ✓ 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<sup>mm</sup> ✓Distance between centres of main bearings 1450<sup>mm</sup> ✓ Is a flywheel fitted YES ✓ Diameter of crank shaft journals as per Rule 470<sup>mm</sup> ✓  
as fitted 485<sup>mm</sup>Diameter of crank pins 485<sup>mm</sup> ✓ METAL ROUND as per Rule 206<sup>mm</sup> ✓ Thickness of ditto as per Rule 294<sup>mm</sup> ✓  
as fitted 485<sup>mm</sup> EYE HOLE as fitted 210<sup>mm</sup> as fitted 310<sup>mm</sup>Diameter of flywheel shaft as per Rule 470<sup>mm</sup> ✓ Diameter of tunnel shaft as per Rule 12<sup>3/4</sup>" ✓ Diameter of thrust shaft as per Rule 13<sup>3/8</sup>" ✓  
as fitted 485<sup>mm</sup> as fitted 13<sup>1/2</sup>" as fitted 14<sup>3/8</sup>"Diameter of screw shaft as per Rule 14" ✓ Is the screw shaft fitted with a continuous liner the whole length of the stern tube YES ✓  
as fitted 14<sup>3/4</sup>"

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 WOOD LINED No O.G. Length of stern bush AFT END 5'-8" FORE END 1'-6" Diameter of propeller 15'-6" ✓

Pitch of propeller 12'-3" to 13'-9" SET. 13<sup>FT</sup> ✓ No. of blades 4 ✓ state whether moveable BUILT ✓ Total surface 76 ✓ square feet  
TOP 60<sup>mm</sup> ✓  
BOT 40<sup>mm</sup> ✓Method of reversing AIR ✓ Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES ✓ Thickness of cylinder liners BOT 40<sup>mm</sup> ✓

Are the cylinders fitted with safety valves YES ✓ Means of lubrication SIGHT &amp; FORCED FEED ✓ Are the exhaust pipes and silencers water cooled or lagged with

non-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 ✓

No. of cooling water pumps 2 ✓ 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 BALLAST ✓ BILGE ✓ How driven ELECTRIC MOTOR ✓

Sizes of pumps BILGE 8"x8" DUPLEX ✓ No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 20 3/2", 40 3/2" ✓

and in holds, etc. 10 @ 3 1/2", TUNNEL WELL 1 @ 3 1/2" DIA. ✓ No. of ballast pumps ONE ✓ How driven ELECTRIC ✓ Sizes of pumps 9"x10" 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

Engine Room and size ✓ 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 NONE ✓ 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 &amp; BELOW ✓ 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 UPPER 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 1 (65<sup>KG/CM<sup>2</sup></sup>) ✓ No. of stages 3 ✓ Diameters 750x675x150<sup>mm</sup> ✓ Stroke 460<sup>mm</sup> ✓ Driven by MAIN ENGINE ✓No. of auxiliary air compressors 1 (65<sup>KG/CM<sup>2</sup></sup>) ✓ No. of stages 3 ✓ Diameter 360x315x72<sup>mm</sup> ✓ Stroke 230<sup>mm</sup> ✓ Driven by ELECTRIC MOTOR ✓No. of small auxiliary air compressors 1 (65<sup>KG/CM<sup>2</sup></sup>) ✓ No. of stages 2 ✓ Diameters 106x34<sup>mm</sup> ✓ Stroke 80<sup>mm</sup> ✓ Driven by STEAM CYLINDER ✓

No. of scavenging air pumps ✓ Diameter ✓ Stroke ✓ Driven by ✓

Diameter of auxiliary Diesel Engine crank shafts as per Rule 167<sup>mm</sup> ✓ Are the air compressors and their coolers made so as to be easy of access YES ✓  
as fitted 170<sup>mm</sup>AIR RECEIVERS:—No of high pressure air receivers 6 Internal diameter 30 295<sup>mm</sup> ✓ Cubic capacity of each 30 150 LITRES ✓  
30 295<sup>mm</sup> ✓ 30 88 LITRES ✓

material SOLID DRAWN STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS ✓ Range of tensile strength 27/32 TONS ✓

thickness MINIMUM .57" working pressure by Rules 1350 LBS/□ ✓ No. of starting air receivers Two ✓ Internal diameter 6'-0 3/5" ✓

Total cubic capacity Material STEEL ✓ Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. ✓

Range of tensile strength 27/32 TONS ✓ thickness SHELL 1/32" ✓ Working pressure by rules 360.75 LBS/□ ✓ Is each receiver, which can be isolated,

fitted with a safety valve as per Rule ONE ON CANNON PIPE Can the internal surfaces of the receivers be examined YES ✓ What means are provided for cleaning them

inner surfaces LOOSE ENDS &amp; MANHOLE DOORS ✓ Is there a drain arrangement fitted at the lowest part of each receiver YES ✓



IS A DONKEY BOILER FITTED? YES

If so, is a report now forwarded? YES. GLASGOW N. 43932

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	✓	✓	✓	✓	
COVERS	20-10-24 TO 23-10-24	15 LBS/□	50 LBS/□	Nmb	
JACKETS	20-10-24 TO 23-10-24	15 LBS/□	60 LBS/□	Nmb	
PISTON WATER PASSAGES	15-9-24 TO 22-9-24	15 LBS/□	60 LBS/□	Nmb. A.D.M.	
MAIN COMPRESSORS—1st STAGE	L.P. 10-9-24	71 LBS/□	150 LBS/□	A.D.M.	
2nd	M.P. 10-9-24	220 LBS/□	500 LBS/□	A.D.M.	
3rd	H.P. 22-8-24	1000 LBS/□	2000 LBS/□	Nmb	
AIR RECEIVERS—STARTING	26-11-24	356 LBS/□	585 LBS/□	W.B.	
INJECTION	6-11-24 TO 20-11-24	1000 LBS/□	2000 LBS/□	Nmb	BELFAST REPORT N. 9245
AIR PIPES ETC. STARTING	22-9-24 TO 27-2-25	356 LBS/□	712 LBS/□	Nmb.	AV. N. 674.5-6-7-8-9.
FUEL PIPES SECTION FILLING	24-2-25	✓	30 LBS/□	✓	
FUEL PUMPS	✓	✓	✓	✓	
SILENCER	✓	✓	✓	✓	
WATER JACKET	✓	✓	✓	✓	
SEPARATE FUEL TANKS	10-12-24 & 16/12/24	✓	10 LBS/□	Nmb.	

PLANS. Are approved plans forwarded herewith for shafting No London Letter 19/2/24 Receivers No Report attached Separate Tanks YES

SPARE GEAR

Supplied as per attached list.

The foregoing is a correct description,  
For HARLAND & WOLFF, LTD.

S. C. Green

MANAGER FINNIESTON WORKS

Manufacturer.

Dates of Survey while building  
During progress of work in shops—1924. June 14-16. July 3-4-31. Aug 1-5-15-18-21-22-26-27-28-29. Sept 2-8-10-11-15-16-18-22-26.  
During erection on board vessel—1925. Jan 9. Feb 2-4-5-16-17-24-27. Mar 10-19.  
Total No. of visits 60

Dates of Examination of principal parts—Cylinders 20/23/10/24 Covers 20/23/10/24 Pistons 15/22/9/24 Rods 3/10/24 Connecting rods 1/10/24  
Crank shaft 7/10/24 Thrust shaft 10/11/24 Tunnel shafts 10/11/24 Screw shaft 27/5/24 Propeller 3/11/24 Stern tube 3/11/24 Engine seatings 14/11/24  
Engines holding down bolts 5/2/25 Completion of pumping arrangements 10/3/25 Engines tried under working conditions 19/3/25  
Completion of fitting sea connections 5/2/24 Stern tube 28/11/24 Screw shaft and propeller 28/11/24  
Material of crank shaft STEEL Identification Mark on Do. N. 675 Material of thrust shaft STEEL Identification Mark on Do. 294 T.H. 29/7/24  
Material of tunnel shafts STEEL Identification Marks on Do. SEE UNDER Material of screw shafts STEEL Identification Marks on Do. 285 T.H. 29/7/24  
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 "ELMWORTH"

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

TUNNEL SHAFTS:— N. 1 904 220YDS 307 T.H. 1/3/24 N. 2 902 220YDS 320 T.H. 12/3/24 N. 3 1028 220YDS 337 T.H. 22/3/24 N. 4 1271 220YDS 7234 S.P. 24/9/24.

This machinery has been constructed under special survey in accordance with the rules and approved plans. The materials and workmanship are sound and good, it has been fitted on board the vessel in an efficient manner, tried under full power working condition and everything found satisfactory and is in my opinion eligible to be classed with record of + L.M.C. 3-25.

It is submitted that this vessel is eligible for

THE RECORD + LMC 3-25. CL DB 100 T.B. Oil Engines. 4SC.SA. 6 Cy 29 5/8" - 59 1/8" 489 NHP.

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

The amount of Entry Fee ... £ 5 : 0 When applied for,  
Special ... £ 98 : 7/- 23/3/1925.  
Donkey Boiler Fee ... £ ✓  
Travelling Expenses (if any) £ ✓ When received, 22/4/25

Committee's Minute GLASGOW 24 MAR 1925

Assigned + LMC 3,25

CERTIFICATE WRITTEN  
22-4-25



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Foundation