

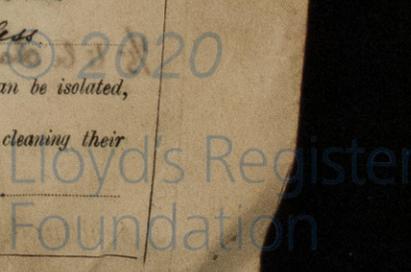
REPORT ON OIL ENGINE MACHINERY.

No. 82673

Date of writing Report *19* When handed in at Local Office *8 SEP 1921* Port of *LIVERPOOL* Received at London Office *SAT. 10 SEP. 1921*
 in Survey held at *Birkenhead* Date, First Survey *Sept 20th / 20* Last Survey *Aug 30th 1921*
 Book. *305* on the *Single* Screw vessels *"MALIA"* (Starboard Engine) Number of Visits *70*
Twin
Triple
 Built at *Port Glasgow* By whom built *W. Hamilton & Co. Yard No. 377* When built *1921*
 Lines made at *Birkenhead* By whom made *Cammell Laird & Co. Engine No. 2092* When made *1921*
 Key Boilers made at By whom made
 Horse Power *550* Owners *T. & J. Brocklebank* Boiler No. When made
 Horse Power as per Rule *124* Is Refrigerating Machinery fitted for cargo purposes Port belonging to *Liverpool*
 Is Electric Light fitted

ENGINES, &c.—Type of Engines *Cammell Laird Fullagar* 2 or 4 stroke cycle *2* Single or double acting *Single*
 Working pressure in cylinders *550 lbs/p* No. of cylinders *Four* No. of cranks *Four* Diameter of cylinders *14"*
 of stroke *20"* Revolutions per minute *120* Means of ignition *High Compression* Kind of fuel used *Heavy Oil*
 Distance between bearings (Page 92, Section 2, par. 7 of Rules) *5'-8 1/4"*
 Distance between centres of main bearings *4'-8 3/4"* Is a flywheel fitted *Yes* Diameter of crank shaft journals as per Rule *Approved*
 as fitted *9 1/2"*
 Diameter of crank pins *9 1/2"* Breadth of crank webs as per Rule *Approved* as fitted *11 1/2"* Thickness of ditto as per Rule *Approved*
 as fitted *6"*
 Diameter of tunnel shaft as per Rule *Approved* as fitted *9 1/2"*
 Diameter of thrust shaft as per Rule *Approved* as fitted *9 1/2"*
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube
 If the liner is in more than one length are the joints burned
 Is the space charged with a plastic material insoluble in water and non-corrosive
 If without liners, is the shaft arranged to run in oil
 Length of stern bush
 Diameter of propeller
 state whether moveable
 Total surface square feet
 Is a governor or other arrangement fitted to prevent racing of the engine when disengaged *Yes* Thickness of cylinder liners *1 43/64"*
 Means of lubrication *Forced* Are the exhaust pipes and silencers water cooled or lagged with
 lagging material *Some W.C. Some lagged* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
Exhaust led up funnel
 No. of cooling water pumps *None* Is the sea suction provided with an efficient strainer which can be cleared
 No. of bilge pumps fitted to the main engines *None* Diameter of ditto *None* Stroke
 No. of auxiliary pumps connected to the main bilge lines
 How driven
 No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room
 No. of ballast pumps *None* How driven
 Sizes of pumps
 last pump fitted with a direct suction from the engine room bilges
 State size
 Is a separate auxiliary pump suction fitted in
 Are all the bilge suction pipes fitted with roses
 Are the roses in Engine Room always accessible
 Are all connections with the sea direct on the skin of the ship
 Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates
 Are they each fitted with a discharge valve always accessible on the plating of the vessel
 Are the bilge suction pipes, cocks and valves arranged so as to prevent any
 connection between the sea and the bilges
 Is the screw shaft tunnel watertight
 Is it fitted with a watertight door
 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 stages *3* Diameters *16 1/2", 14 1/2", 3 1/2"* Stroke *14"* Driven by *Main Engine*
 No. of stages *None* Diameters *None* Stroke *None* Driven by
 No. of stages *None* Diameters *None* Stroke *None* Driven by
 No. of stages *Four* *Rectangular* Diameters *33 1/2" x 15 1/4"* Stroke *20"* Driven by *Main Engine*
 Are the air compressors and their coolers made so as to be easy of access *Yes*

RECEIVERS:—No of high pressure air receivers *3 (2 ex Fullagar)* Internal diameter *15"* Cubic capacity of each *2.74 cu. ft.*
 Material *Steel* Seamless, lap welded or riveted longitudinal joint *Seamless* Range of tensile strength *Admiralty Steel (Approved)*
 Working pressure by Rules *2000 lbs/p* No. of starting air receivers *12* Internal diameter *17 25/32"*
 Capacity *220 cu. ft.* Material *Steel* Seamless, lap welded or riveted longitudinal joint *Seamless*
 Tensile strength *28-32 tons* thickness *1 1/4"* Working pressure by rules *1000 lbs/p* Is each receiver, which can be isolated,
 safety valve as per Rule *Safety valve fitted to Arr. Compress.* Can the internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their
Detachable end covers 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	Not tested	Limits above	thickness		
COVERS	None				
JACKETS	27-5-21, 7-6-21, 9-6-21	5 lbs/sq	50 lbs/sq	LCH	
PISTON WATER PASSAGES	17-5-21, 18-5-21, 19-5-21, 24-5-21, 31-5-21	10 lbs/sq	100 lbs/sq	LCH	
MAIN COMPRESSORS—1st STAGE	12-4-21	20 lbs/sq	500 lbs/sq	LCH	Common Cylinder Slipped Trunk Piston
2nd "	12-4-21	125 lbs/sq	500 lbs/sq	LCH	
3rd "	3-6-21	900 lbs/sq	1800 lbs/sq	LCH	
AIR RECEIVERS—STARTING	29-6-21	1000 lbs/sq	2000 lbs/sq	LCH	
INJECTION	18-2-21	1000 lbs/sq	2000 lbs/sq	W.G.H.	
AIR PIPES	27-5-21 - 30-8-21	1000 lbs/sq	2000 lbs/sq	LCH	
FUEL PIPES	16-6-21	900 lbs/sq	1800 lbs/sq	LCH	
FUEL PUMPS	7-6-21	900 lbs/sq	1800 lbs/sq	LCH	
SILENCER	Not tested	Atmospheric		LCH	
WATER JACKET	None				
SEPARATE FUEL TANKS	1-3-21, 9-3-21	Weight of oil	6 lbs/sq	LCH	

PLANS. Are approved plans forwarded herewith for shafting (If not, state date of approval)

Yes

Receivers

Yes

Separate Tanks

Yes

SPARE GEAR

See Attached List

This spare gear required to be checked on board

The foregoing is a correct description,
CAMMELL LAIRD AND COMPANY LIMITED.

J. W. Laird
Manufacturer.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits

Dates of Examination of principal parts—Cylinders 21-12-20-25-7-21 Covers None Pistons 9-12-20 Rods 3-2-21-31-5-21 Connecting rods 17-1-21
Crank shaft 3-2-21-16-2-21 Thrust shaft 28-4-21 Tunnel shafts 28-5-21 Screw shaft 13-6-21 Propeller 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 *Stemens Steel* Identification Mark on Do. 2802, W.G.H. 5378 J.P. Material of thrust shaft *Stemens Steel* Identification Mark on Do. 2728
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 *M/s. "Fullagar"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *This Cammell Laird Fullagar Oil Engine has been built under Special Survey & to the approved plans & Secretary's letters (E) dated 15-9-21. The workmanship & materials are good & when tried at full power the shop was found satisfactory in every respect & is eligible in our opinion for the L.M.C. when fitted as the Starboard engine in the M/s "MALIA". The Port Engine for the above vessel had been taken from the M/s FULLAGAR (No 1634 of the Register). See Liverpool Report No 1077 herewith.*

This engine is being fitted on board in Glasgow.

The amount of Entry Fee £ 4.00
Special £ 31.00
Total £ 35.00

Donkey Boiler Fee £
1/6 to be charge for fitting
Travelling Expenses (if any) £

When applied for
- 8 SEP 1921

When received
5-11-21

John Dykes & Digby R. Collins
Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute LIVERPOOL - 9 SEP 1921

Assigned

Transmit to London



Lloyd's Register of Shipping