

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 9917

Received at London Office 22 FEB 1928

Date of writing Report

19

When handed in at Local Office

21 - 2 - 1928 Port of

Beefast

No. in Survey held at  
Reg. Book.

Beefast

Date, First Survey 22 April 1928 Last Survey 15 Feb. 1928

Number of Visits 70

41486 on the <sup>Single</sup> ~~Twin~~ <sub>Triple</sub> Screw vessels

KING JOHN

Tons { Gross 4520  
Net 2690

Master

Built at Beefast

By whom built Harland & Wolff Ltd. Yard No. 760 When built 1928

Engines made at

Beefast

By whom made Harland & Wolff Ltd.

Engine No. 760 When made 1928

Donkey Boilers made at

Annan

By whom made Cochran & Co. Annan, Ltd.

Boiler No. 104124 When made 1927

Brake Horse Power 1900

Owners King Line Ltd. (Dodd, Thomson & 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 *Harland Wolff - Br. Type Diesel* 2 or 4 stroke cycle *4* Single or double acting *Single*

Maximum pressure in cylinders *500 lbs* No. of cylinders *Six* No. of cranks *Six* Diameter of cylinders *740 mm*

Length of stroke *1500 mm* <sup>59 1/16"</sup> Revolutions per minute *90* Means of ignition *Compression* Kind of fuel used *diesel oil*

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 1170 mm*  
*as fitted 1185 mm. bore 115 mm*

Diameter of crank pins *485 mm* Breadth of crank webs *as per Rule 625.1 mm* Thickness of ditto *as per Rule 263.2 mm*  
*as fitted 790 mm. as fitted 310 mm*

Diameter of flywheel shaft *as per Rule* *As Thrust Shaft* Diameter of tunnel shaft *as per Rule 13.16"* Diameter of thrust shaft *as per Rule 13.81"*  
*as fitted 15" as fitted 13 1/2" as fitted 14 1/4"*

Diameter of screw shaft *as per Rule 14.175"* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes*  
*as fitted 15"*

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 Length of stern bush *60"* Diameter of propeller *15' 9"*

Pitch of propeller *12' 6"* No. of blades *4* state whether moveable *No.* Total surface *82* square feet

Method of reversing *semi motor* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Thickness of cylinder liners *3 mm*

Are the cylinders fitted with safety valves *Yes* Means of lubrication *forced* Are the exhaust pipes and silencers water cooled or lagged with

insulating 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

*led up funnel* 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 — Diameter of ditto — Stroke —

Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines *3* How driven *motor*

Sizes of pumps *1 Bilge 80 lons 2 Ballast 100 lons* No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room *2 1/2"* *topedam suction 1 1/2"*

and in holds, etc. *No. 1 3" No. 2 2 1/2" Deep Tank 2 1/2" No. 3 2 1/2" Ap. Coffdam One 1 1/2"* No. of ballast pumps *2* How driven *motor* Sizes of pumps *8" 8" 100 lons/hr*

Is the ballast pump fitted with a direct suction from the engine room bilges *Yes* State size *2 1/2"* Is a separate auxiliary pump suction fitted in

Engine Room and size *Yes 2 1/2"* Are all the bilge suction pipes fitted with roses *Yes* Are the roses in Engine Room always accessible *Yes*

Are the valves on Engine Room bulkheads always accessible

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 *both* 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 *Main 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 *One* No. of stages *3* Diameters *70-675-150 mm* Stroke *460 mm* Driven by *Main Engines*

No. of auxiliary air compressors *Three* No. of stages *3* Diameters *320-240-82 mm* Stroke *280 mm* Driven by *Aux Diesels*

No. of small auxiliary air compressors *One* No. of stages *2* Diameters *106-34 mm* Stroke *80 mm* Driven by *Steam*

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

Diameter of auxiliary Diesel Engine crank shafts *as per Rule 180 mm. as fitted* Are the air compressors and their coolers made so as to be easy of access *Yes*

**AIR RECEIVERS:**—No. of high pressure air receivers *Six* Internal diameter *295 mm* Cubic capacity of each *3 1/2 cu ft 3/160 litres*

material *Steel* Seamless, lap welded or riveted longitudinal joint *Seamless* Range of tensile strength *26-30 tons*

thickness *30 mm* working pressure by Rules *29/2 1/2 lb* No. of starting air receivers *2* Internal diameter *72 3/8"*

Total cubic capacity *1076 cu ft* Material *Steel* Seamless, lap welded or riveted longitudinal joint *welded longitudinal joint*

Range of tensile strength *28-32 tons* thickness *1 3/8"* Working pressure by rules *360 lb* Is each receiver, which can be isolated,

fitted with a safety valve as per Rule *Yes* Can the internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their

inter surfaces *manhole access* 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

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....	10 <sup>th</sup> to 18 <sup>th</sup> Oct. 1927	500 lbs	1000 lbs	R.L.A.	
COVERS .....	3 <sup>rd</sup> to 19 <sup>th</sup> Nov. 1927		50 lbs	R.L.A.	
JACKETS.....					
PISTON WATER PASSAGES.....	3 <sup>rd</sup> to 14 <sup>th</sup> Nov. 1927	75 lbs	150 lbs	R.L.A.	
MAIN COMPRESSORS—1st STAGE.....	do.	250 lbs	500 lbs	R.L.A.	
2nd „ .....	11 <sup>th</sup> Oct. 1927	1000 lbs	2000 lbs	R.L.A.	
3rd „ .....	21 <sup>st</sup> Oct. 1927	356 lbs	585 lbs	R.L.A.	
AIR RECEIVERS—STARTING .....	2 <sup>nd</sup> to 9 <sup>th</sup> Dec. 1927	1000 lbs	2000 lbs	R.L.A.	
INJECTION .....	9 <sup>th</sup> to 19 <sup>th</sup> Jan. 1927.	356 lbs	712 lbs	R.L.A.	
AIR PIPES .....					
FUEL PIPES .....	7 <sup>th</sup> Nov. to 12 <sup>th</sup> Dec. 1927.	1000 lbs	2000 lbs	R.L.A.	
FUEL PUMPS .....	29 <sup>th</sup> Nov. 1927		5 lbs.	R.L.A.	
SILENCER .....					
WATER JACKET .....	17 <sup>th</sup> Nov. 1927.		8 lbs.	R.L.A.	
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for shafting 11.12.26 Receivers 30.11.26 Separate Tanks 21.1.27  
(If not, state date of approval)

SPARE GEAR

In excess of Lloyd's Register requirements - see separate list.

The foregoing is a correct description,  
For HARLAND AND WOLFF LIMITED.

F. E. Lebeck

Manufacturer.

1927  
Dates of Survey while building  
During progress of work in shops - 22 May 10.23 July 27 Aug 2.9.10.11.16.19.23.24.25.26 Sept. 1.2.6.7.19 Oct.  
During erection on board vessel - 5.6.10.11.12.13.14.17.18.21.25.31 Nov. 1.2.3.4.7.8.9.10.11.12.14.15.16.17.18.  
Total No. of visits 21.23.24.25.28.29.30 Dec. 1.2.6.9.12.13.16 Jan. 6.9.10.19.26 Feb. 10.13.15.  
70

Dates of Examination of principal parts—Cylinders 3<sup>rd</sup> to 19<sup>th</sup> Nov. 1927 Covers 10<sup>th</sup> to 18<sup>th</sup> Oct. 1927 Pistons 7.11.27 Rods 3.10.27 Connecting rods 21.10.27  
Crank shaft 21.10.27 Thrust shaft 30.11.27 Tunnel shafts 24.11.27 Screw shaft 15.11.27 Propeller 12.11.27 Stern tube 10.11.27 Engine seatings 24.11.27  
Engines holding down bolts 26.1.28 Completion of pumping arrangements 13.2.28 Engines tried under working conditions 16.2.28  
Completion of fitting sea connections 24.11.27 Stern tube 24.11.27 Screw shaft and propeller 24.11.27  
Material of crank shaft S.M.O.H. STEEL Identification Mark on Do. 1588 R.L.A. Material of thrust shaft S.M.O.H. STEEL Identification Mark on Do. 1833 R.L.A.  
Material of tunnel shafts S.M.O.H. STEEL Identification Marks on Do. 1817.1818.1840 R.L.A. Material of screw shafts S.M.O.H. STEEL Identification Marks on Do. 1775 R.L.A.

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 "KING EDGAR" BALIA

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

The machinery of this vessel has been constructed under special survey. The materials and workmanship are in and good. The main and auxiliary engines were tried out with satisfactory results. The fuel oil lines were tested to hydraulic pressure. The air relief valves were adjusted to lift at their respective pressures. The donkey boiler safety valve was adjusted under steam. In my opinion the vessel is now eligible for notation in the Society's Register. Book + L.M.C. 2.28 C.L. Fitted for oil fuel 2.28 F.P. above 150°F donkey boiler pressure 100 lbs.

The amount of Entry Fee ... £ 5 : -  
Special ... £ 98 : 7  
Donkey Boiler Fee ... £ 8 : 8  
Travelling Expenses (if any) £ : :  
When applied for, 20 Feb. 1928  
When received, 5.3.28

Committee's Minute

FRI. 2 MAR 1928

Assigned

+ L.M.C. 2.28 C.L.  
Oil engines 100 lbs.

R. Lee Amers

Engineer Surveyor to Lloyd's Register of Shipping.



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