

REPORT ON OIL ENGINE MACHINERY.

No. 10002

10 11 1928

Received at London Office

Date of writing Report 19... When handed in at Local Office 19... Port of Belfast
 No. in Survey held at Belfast Date, First Survey July 27 1927 Last Survey July 5th 1928
 Reg. Book. Number of Visits 67

41530 on the Single Twin Triple Quadruple Screw vessel STEEL SC. KING WILLIAM. Tons Gross 5227 Net 3139
 Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 765 When built 1928
 Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 765 When made 1928
 Donkey Boilers made at Annan By whom made Cochran & Co. Annan Ltd. Boiler No. 10429 When made 1928
 Brake Horse Power 1900 Owners King Line Ltd. (Dodd, Hanson & 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
 Trade for which vessel is intended Ocean-going

OIL ENGINES, &c.—Type of Engines Harland & Wolff - B.M. Type Diesel 2 or 4 stroke cycle 4 Single or double acting Single
 Maximum pressure in cylinders 500 lbs Diameter of cylinders 740 mm. Length of stroke 1500 mm. No. of cylinders 6 No. of cranks 6
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 mm. Is there a bearing between each crank Yes
 Revolutions per minute 90 Flywheel dia. 2500 mm. Weight 16000 Kilogs. Means of ignition Compression Kind of fuel used diesel oil
 Crank Shaft, dia. of journals as per Rule 470mm Crank pin dia. 485 mm. Crank Webs Mid. length breadth 790mm. Thickness parallel to axis 310mm
as fitted 485mm bore 115mm. Mid. length thickness 310 mm. Thickness around eyehole 210 mm
 Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 13.16" Thrust Shaft, diameter at collars as per Rule 13.81"
as fitted Thrust Shaft. as fitted 13 1/2" as fitted 14 1/4"
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 14.475" Is the tube shaft fitted with a continuous liner Yes
as fitted as fitted 15" as fitted screw

Bronze Liners, thickness in way of bushes as per Rule 7 1/16" Thickness between bushes as per rule 5/16" 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 junctions made by fusion through the whole thickness of the liner Yes
 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 Yes
 If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No
 Length of Bearing in Stern Bush next to and supporting propeller 60"
 Propeller, dia. 15'-9" Pitch 12'-6" No. of blades four Material Mang. Br. whether Moveable No. Total Developed Surface 82 sq. feet
 Method of reversing Engines Levo-motri Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication faced
 Thickness of cylinder liners 53 mm. Are the cylinders fitted with safety valves Yes 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 1 funnel
 Cooling Water Pumps, No. Two 100 tons/hr. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
 Bilge Pumps worked from the Main Engines, No. — Diameter — Stroke — Can one be overhauled while the other is at work —
 Pumps connected to the Main Bilge Line { No. and Size Three One Bilge 80 tons/hr. Two ballast 100 tons/hr.
 How driven electric motors

Ballast Pumps, No. and size Two 8'x8" 100 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size Two-twin 50 tons/hr.
 Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces Two 3" Cofferdam suction 4 1/2"
 In Holds, &c. Fore Hold two 3" No. 2 Hold two 3 1/2" Deep Tank two 2 1/2" No. 3 Hold two 3" Aft Cofferdam one 2 1/2" Fore Hold two 3" Tunnel well one 3"
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One Bilge Pump two 5" Ballast pumps two 6"
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes
 Are all Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Yes
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges 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 the Blow Off Cocks fitted with a spigot and brass covering plate Yes
 What pipes pass through the bunkers — How are they protected —
 What pipes pass through the deep tanks — Have they been tested as per Rule Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the 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 —
 Main Air Compressors, No. One No. of stages three Diameters 740-675-150 mm. Stroke 460 mm. Driven by main engines
 Auxiliary Air Compressors, No. Three No. of stages three Diameters 320-280-82 mm. Stroke 220 mm. Driven by aux. diesels
 Small Auxiliary Air Compressors, No. One No. of stages two Diameters 106-34 mm. Stroke 80 mm. Driven by Steam
 Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —
 Auxiliary Engines crank shafts, diameter as per Rule 180 mm. as fitted

AIR RECEIVERS:—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 inner surfaces Blast air - open ends Starling Air - manhole access
 Is there a drain arrangement fitted at the lowest part of each receiver Yes
 High Pressure Air Receivers, No. Six Cubic capacity of each 38 litres 35 litres Internal diameter 295 mm thickness 15 mm
 Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 26-30 tons Working pressure by Rules 1305 lbs
 Starting Air Receivers, No. Two Total cubic capacity 1076 ft³ Internal diameter 72 3/8" thickness 1 1/2"
 Seamless, lap welded or riveted longitudinal joint riveted Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 360 lbs



IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes

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)
 Donkey Boilers General Pumping Arrangements 23.12.27 Oil Fuel Burning Arrangements 18.12.27

SPARE GEAR In excess of rule requirements - see attached list.

The foregoing is a correct description,
 of **HARLAND AND WOLFF, LIMITED,**
Leobbeck Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1927 July 27 Aug 17 19 23 31 Nov 1 8 16 21 24 28 Dec 6 20 1928 Jan 5 6 Feb 1 3 6 7 8 17 20 22 24 27 28
 During erection on board vessel - Mar 7 9 19 20 23 26 Apr 3 4 16 19 23 25 26 27 May 1 2 4 5 7 8 9 11 14 15 17 18 21 23 24 28 29 31 June 7 18 21 July 3 5
 Total No. of visits 67

Dates of Examination of principal parts - Cylinders 16 Ap 15 8 May 1928 Covers 6th 28th Feb 1928 Pistons 20 2 28 Rods 20 2 28 Connecting rods 28 5 28
 Crank shaft 26 4 28 Flywheel shaft and Thrust shaft 7 2 28 Intermediate shafts 14 5 28 Tube shaft ✓
 Screw shaft 16 4 28 Propeller 3 4 28 Stern tube 1 5 28 Engine seatings 24 5 28 Engines holding down bolts 22 6 28
 Completion of fitting sea connections 17 5 28 Completion of pumping arrangements 3 7 28 Engines tried under working conditions 3 7 28
 Crank shaft, Material S.M. INGOT STEEL Identification Mark 1877 R.L.A. Flywheel shaft, Material ✓ Identification Mark 2053: 2067
 Thrust shaft, Material S.M. INGOT STEEL Identification Mark 2036 R.L.A. Intermediate shafts, Material S.M. INGOT STEEL Identification Marks 2059: 1966 R.L.
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. INGOT STEEL Identification Mark 1985 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" YE.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under special survey. The materials & workmanship are sound and good. The main and auxiliary engines were tried out with satisfactory results. The fuel oil lines were tested in accordance with the rules. The air relief valves were adjusted to lift at their respective pressures. The donkey boiler safety valves were adjusted under steam. In my opinion, the vessel is now eligible for notation in the Society's Register Book - L.M.C. 7.28 C.L. fitted for oil fuel 7.28 9.P. above 150°F donkey boiler pressure 100 lbs.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 7.28 C.L.

OIL ENGINES 45.C. 5A. 489 NHP.
 6cy. 29 8/16 DB. 100 lbs
 J.S.A.
 11/7/28

The amount of Entry Fee ... £ 5 : - : When applied for,
 Special ... £ 98 : 7 : 9-7-1928
 Air Reservoir Donkey Boiler Fee ... £ 8 : 8 : When received, 25-7-28
 Travelling Expenses (if any) £ : :
 FRL 13 JUL 1928

R. Lee Ameson,
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned + L.M.C. 7.28 C.L.
Oil Engines DB 100 lbs.



Certificate (if required) to be sent to Registrar.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)