

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office DEC 29 1937

Date of writing Report 19 27. 12. 37 When handed in at Local Office 27. 12. 37 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 28-10-36 Last Survey 22-12-1937  
 Reg. Book on the new steel SIRON "CHIEFTAIN" (Number of Visits 90)  
 Built at Port Glasgow By whom built Sithgoum Ltd Yard No. 903 When built 1937  
 Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 1008 When made 1937  
 Boilers made at Renfrew By whom made Babcock & Wilcox Ltd Boiler No. 6/1321 When made 1937  
 Registered Horse Power Owners Burken Hill Proprietary Ltd Port belonging to Melbourne  
 Nom. Horse Power as per Rule 504 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Including exhaust turbine 553  
 Trade for which Vessel is intended Carrying iron ore on the Australian coast

**ENGINES, &c.**—Description of Engines Quadruple expansion Revs. per minute 80  
 Dia. of Cylinders 24"-34 1/2"-50"-71" Length of Stroke 48" No. of Cylinders 4 No. of Cranks 4  
 Crank shaft, dia. of journals as per Rule 14.47" as fitted 14 3/4" Crank pin dia. 14 3/4" Crank webs Mid. length breadth 23 1/2" Thickness parallel to axis 10"  
 Intermediate Shafts, diameter as per Rule 13.782" as fitted 14" Thrust shaft, diameter at collars as per Rule 14.47" as fitted 14 3/4"  
 Tube Shafts, diameter as per Rule 15.398" as fitted 15 7/8" Screw Shaft, diameter as per Rule 15.30" as fitted 15 7/8" Is the { tube } shaft fitted with a continuous liner { yes }  
 Bronze Liners, thickness in way of bushes as per Rule .77" as fitted 13/16" Thickness between bushes as per Rule .55" as fitted 3/4" 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 -  
 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 - Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type - Length of Bearing in Stern Bush next to and supporting propeller 5-4"  
 Propeller, dia. 18-3" Pitch 18-3" No. of Blades 4 Material Brass whether Moveable yes Total Developed Surface 95.5 sq. feet  
 Feed Pumps worked from the Main Engines, No. none Diameter - Stroke - Can one be overhauled while the other is at work -  
 Bilge Pumps worked from the Main Engines, No. none Diameter - Stroke - Can one be overhauled while the other is at work -  
 Feed Pumps { No. and size 2 @ 9 1/2" x 7 x 21" How driven steam Pumps connected to the Main Bilge Line { No. and size 2 @ 8" & 9" x 18" How driven steam }  
 Ballast Pumps, No. and size 2 @ 12 1/2" & 14 x 24" Lubricating Oil Pumps, including Spare Pump, No. and size -  
 Are two independent means arranged for circulating water through the Oil Cooler - Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 3 @ 3" & 1 @ 2" in Eng room. 4 @ 2 1/2" in stokehold. 1 @ 2" in cofferdam aft. 1 @ 2" in cofferdam fore.  
 In Pump Room - In Holds, &c. N° 1 hold - 2 @ 3". N° 2 hold - 2 @ 3". N° 3 hold - 2 @ 4"  
Hold suction fitted at side.

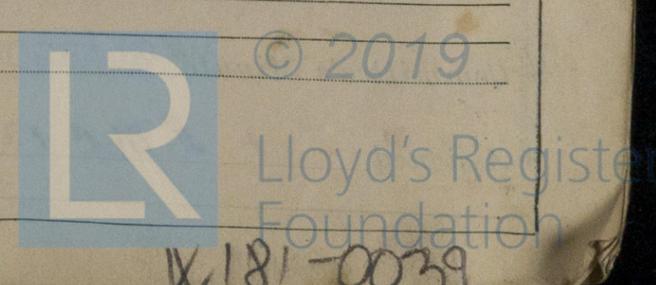
**Main Water Circulating Pump Direct Bilge Suctions, No. and size** 1 @ 12" **Independent Power Pump Direct Suctions to the Engine Room Bilges,**  
 No. and size 1 @ 4 1/2" Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes yes  
 Are the Bilge Suctions in the Machinery Space 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 both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold 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 none How are they protected -  
 What pipes pass through the deep tanks no deep tank Have they been tested as per Rule -  
 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 none Is it fitted with a watertight door - worked from -

**MAIN BOILERS, &c.**—(Letter for record. (S) ✓) Total Heating Surface of Boilers 6612 sq. ft.  
 Is Forced Draft fitted yes No. and Description of Boilers 3 water tube Working Pressure 250  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes Also Rpt. N° 59185 (herewith)  
 IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? -  
 Is the donkey boiler intended to be used for domestic purposes only -

**PLANS.** Are approved plans forwarded herewith for Shafting no Main Boilers See Rpt Auxiliary Boilers - Donkey Boilers -  
 Superheaters See Rpt General Pumping Arrangements no Oil fuel Burning Piping Arrangements -

**SPARE GEAR.**  
 Has the spare gear required by the Rules been supplied yes  
 State the principal additional spare gear supplied one propeller shaft. 2 propeller blades. one bottom end bearing. one top end bearing. one impeller for circulating pump.

The foregoing is a correct description,  
 For David Rowan & Co. Ltd  
 Arch. H. Grierson Manufacturer.



Apr 170 59185

1936 Oct: 28 Nov: 5 18 Dec: 18 21 23 28 30 (1937) Jan: 19 Feb: 8 15 24 Apr: 13 14 15 16  
 During progress of work in shops -- 19 26 27 May: 11 13 19 20 21 25 27 June: 1 2 3 4 11 15 23 30 July: 5 8 9 12 13 14 29  
 Dates of Survey while building During erection on board vessel --- Aug: 9 12 13 23 24 26 30 Sep: 2 6 13 14 15 20 21 23 24 28 Oct: 1 4 6 11 18 20 25  
 29 Nov: 1 3 4 5 8 9 10 18 24 26 29 30 Dec: 1 2 6 7 8 9 11 13 15 16 17 22  
 Total No. of visits 90

Dates of Examination of principal parts—Cylinders 12-8-37 Slides 28-9-37 Covers 24-8-37  
 Pistons 21-9-37 Piston Rods 25-10-37 Connecting rods 21-5-37  
 Crank shaft 15-9-37 Thrust shaft 15-9-37 Intermediate shafts none  
 Tube shaft none Screw shaft 4-10-37 Propeller 11-10-37  
 Stern tube 23-9-37 Engine and boiler seatings Guk Engines holding down bolts 2-12-37  
 Completion of fitting sea connections Guk  
 Completion of pumping arrangements 11-12-37 Boilers fixed 24-11-37 Engines tried under steam 22-12-37  
 Main boiler safety valves adjusted 13-12-37 Thickness of adjusting washers  $P \frac{3}{8}$  S  $\frac{5}{16}$  Start d bbs both  $\frac{1}{32}$  after bbs - both  $\frac{1}{32}$   
 Crank shaft material I. steel Identification Mark \* LLOYD'S L.C.D. 15-9-37 Thrust shaft material I. steel Identification Mark \* LLOYD'S L.C.D. 15-9-37  
 Intermediate shafts, material none Identification Marks \* LLOYD'S L.C.D. 4-10-37 Tube shaft, material — Identification Mark \* LLOYD'S L.C.D. 15-9-37  
 2 Screw shafts material I. steel Identification Mark \* LLOYD'S L.C.D. 4-10-37 Steam Pipes, material steel Test pressure 750 Date of Test 6-12-37  
 Is an installation fitted for burning oil fuel no Is the flash point of the oil to be used over 150°F. —  
 Have the requirements of the Rules for the use of oil as fuel been complied with yes  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo no If so, have the requirements of the Rules been complied with —  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with —  
 Is this machinery duplicate of a previous case yes If so, state name of vessel "Iron Knight" G.R.P. N° 58974

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

\* In addition to these marks each forging is stamped with its original number as per forging reports herewith.

The Rowan-Götaverken Turbo compressor has been fitted with these engines and is arranged to compress the exhaust steam from the high pressure cylinder and, after compression, deliver it to the 1<sup>st</sup> intermediate cylinder valve casing.

The brake horse power of the exhaust turbine is given as 530.

a report on this turbo compressor (T.C. 80) has been prepared on Form 10. Copy attached

The machinery has been constructed under Special Survey, satisfactorily fitted in the vessel, tried under steam and found good. It is eligible in my opinion for Classification and the Record + LMC 12, 37, also notation "Exhaust turbine driving steam compressor".

27/12/37

GLASGOW

The amount of Entry Fee ... £ 6 : : When applied for,  
 Special ... £ 68 : 2 : 28 DEC 1937  
 Donkey Boiler Fee ... £ : : :  
 Travelling Expenses (if any) £ : : : 10/1

S. C. Davis  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 DEC 1937

Assigned + L.M.C. 12, 37 70.



The Surveyors are requested not to write on or below the space for Committee's Minute.