

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 45/10
-2 JUN 1926

Received at London Office

Date of writing Report

19

When handed in at Local Office

23/5

1926

Port of GLASGOW

No. in Survey held at GLASGOW
Reg. Book.

Date, First Survey 16 Oct 1925 Last Survey 26 May 1926

Number of Visits 60

on the ^{Single}
Twin
^{Triple}

Screw vessel

"SPRINGBANK"

Tons ^{Gross} 5135
_{Net}

Master Built at GLASGOW By whom built HARLAND & WOLFF LTD. Yard No. 6874 When built 1926

Engines made at GLASGOW By whom made HARLAND & WOLFF LTD. Engine No. 687 When made 1926

Donkey Boilers made at BELFAST By whom made HARLAND & WOLFF LTD. Boiler No. 881 When made 1926

Brake Horse Power 2300 Owners MESSRS ANDREW WEIR & CO (BANK LINE LTD) Port belonging to GLASGOW

Nom. Horse Power as per Rule 716/17 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

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

Maximum pressure in cylinders 500 LBS/SQ IN No. of cylinders 12 No. of cranks 12 Diameter of cylinders 630 7/8

Length of stroke 960 7/8 Revolutions per minute 125 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) 872 7/8

Distance between centres of main bearings 1300 7/8 Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 376 7/8 as fitted 384 7/8

Diameter of crank pins 384 7/8 METAL ROUND as per Rule 165 7/8 Breadth of crank webs as fitted 175 7/8 Thickness of ditto as per Rule 235 7/8 as fitted 250 7/8

Diameter of flywheel shaft as per Rule 376 7/8 as fitted 384 7/8 Diameter of tunnel shaft as per Rule 9 3/4 as fitted 10 Diameter of thrust shaft as per Rule 10 1/4 as fitted 11 1/8

Diameter of screw shaft as per Rule 10 3/4 as fitted 11 Is the screw shaft fitted with a continuous liner the whole length of the stern tube YES

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

Does 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

Are two liners 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 50 Diameter of propeller 11-9

Pitch of propeller 9-9 to 11-3 SET 11-3 No. of blades 3 EACH state whether moveable YES Total surface 84 square feet 70 5/8

Method of reversing COMPRESSED AIR Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Thickness of cylinder liners 80 5/8

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

No. of cooling water pumps TWO Is the sea suction provided with an efficient strainer which can be cleared

Is there a bilge pump in 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 THREE How driven ELECTRIC MOTOR

Sizes of pumps CIRCULATING 4 1/2 CENT BALLAST 9 1/2 9 1/2 10 STROKE No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 30 3/2 10 2 1/2 IN TUNNEL

In holds, etc. 40 2 1/2 COFFERS, 20 2 1/2, 30 3 1/2 40 3 1/2 H.A.S. No. of ballast pumps ONE How driven ELECTRIC MOTOR Sizes of pumps 9 1/2 9 1/2 10 STROKE

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 CIRC 5" ON BILGE MAIN Are all the bilge suction pipes fitted with roses YES Are the roses in Engine Room always accessible YES

Are the sluices 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 ABOVE & 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

Is the machinery protected from SHELTER 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 TWO (65 1/2 CM) No. of stages 3 Diameters 600 x 540 1/4 Stroke 350 7/8 Driven by MAIN ENGINE

No. of auxiliary air compressors ONE (25 1/2 CM) No. of stages 2 Diameters 400 x 350 7/8 Stroke 260 7/8 Driven by ELECTRIC MOTOR

No. of small auxiliary air compressors ONE 65 1/2 CM No. of stages 2 Diameters 106 x 34 7/8 Stroke 80 7/8 Driven by STEAM CYLINDER

No. of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule 167 7/8 as fitted 170 7/8 Are the air compressors and their coolers made so as to be easy of access YES

AIR RECEIVERS:—No of high pressure air receivers 7

Internal diameter 295 7/8 Cubic capacity of each 2 @ 88 " " 5 @ 150 LITRES EACH

Material SOLID DRAWN STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS Range of tensile strength 28/32 TONS

Thickness 57 working pressure by Rules 1350 LBS/SQ IN No. of starting air receivers 2 Internal diameter 6-0 3/8

Total cubic capacity 1076 1/2 cu ft Material STEEL Seamless, lap welded or riveted longitudinal joint T.R.D.B.S.

Range of tensile strength SHELL 28/32 TONS thickness SHELL 1 1/2 END 1 1/2 Working pressure by rules 360-75 100/100 Is each receiver, which can be isolated,

Fitted with a safety valve as per Rule ONE ON MAIN PIPE Can the internal surfaces of the receivers be examined YES What means are provided for cleaning their

Inner surfaces. LOOSE ENDS & 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 BELFAST No 9516

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS	29-1-26 to 5-2-26	15 LBS/SQ	50 LBS/SQ	Nmlb	
JACKETS	31-12-25 to 28-1-26	15 LBS/SQ	50 LBS/SQ	Nmlb	
PISTON WATER PASSAGES	30-12-25 to 22-1-26	15 LBS/SQ	50 LBS/SQ	Nmlb	
MAIN COMPRESSORS—1st STAGE	24-12-25 to 20-1-26	71 LBS/SQ	150 LBS/SQ	Nmlb	
2nd	19-1-26 to 21-1-26	220 LBS/SQ	500 LBS/SQ	Nmlb	
3rd	24-12-25 to 25-12-25	1000 LBS/SQ	2000 LBS/SQ	Nmlb	
AIR RECEIVERS—STARTING	5-2-26	356 LBS/SQ	586 LBS/SQ	W.B.	BELFAST REPORT No 9510
INJECTION	15-2-26 to 16-2-26	1000 LBS/SQ	2000 LBS/SQ	Nmlb	A.V. No 838/9/40/1/2/3/4.
AIR PIPES ETC. STARTING	1-2-26 to 11-5-26	356 LBS/SQ	712 LBS/SQ	Nmlb	
FUEL PIPES FILLING & SUCTIONS	4-5-26 to 6-5-26		30 LBS/SQ		
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS	7-4-26		10 LBS/SQ	Nmlb	

PLANS. Are approved plans forwarded herewith for shafting ^{SENT WITH "INVERBANK"} Receivers No ^{APPROVED 18/5/23.}

Separate Tanks ^{STANDARD.} PLAN ENCLOSED

SPARE GEAR

Supplied as per attached list.

The foregoing is a correct description,

For HARLAND & WOLFE, LTD.

S. C. Green.

Manufacturer.

Dates of Survey while building
During progress of work in shops - 1925 Oct 16 23 Nov 24 Dec 1 4 9 14 16 14 21 23 24 25 28 30 31 (1926) Jan 11 12 14 18 19 20 21 23 28 29 Feb 1 2 3 4 5 9 11 15 16 18 19 25 Mar 1 5 9 10 15 19 22 30 Apr 1 27 28 29 May 4 6 11 19 30 26
During erection on board vessel -
Total No. of visits 60

Dates of Examination of principal parts—Cylinders 3/2/26 to 28/2/26 Covers 29/1/26 to 5/2/26 Pistons 30/1/26 to 22/2/26 Rods 12/1/26 Connecting rods 11/2/26
Crank shaft 9/2/26 Thrust shaft 6/3/26 Tunnel shafts 10/3/26 Screw shaft 27/2/26 to 1/4/26 Propeller 19/2/26 Stern tube 21/1/26 Engine seatings 25/2/26
Engines holding down bolts 4/2/26 to 6/5/26 Completion of pumping arrangements 19/5/26 Engines tried under working conditions 26/5/26
Completion of fitting sea connections 13/4/26 Stern tubes 22/3/26 to 1/4/26 Screw shaft and propeller 2/4/26

Material of crank shaft STEEL Identification Mark on Do. SEE UNDER Material of thrust shaft STEEL Identification Mark on Do. SEE UNDER
Material of tunnel shafts STEEL Identification Marks on Do. SEE UNDER Material of screw shafts STEEL Identification Marks on Do. SEE UNDER

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 "INVERBANK"

General Remarks (State quality of workmanship, opinions as to class, &c.)
TUNNEL SHAFTS:-
PORT
STAR

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 conditions and everything found satisfactory and is in my opinion eligible to be classed with record of * L. M. C. 5-26.

The amount of Entry Fee ... £ 6 : 0 :
Special ... £ 110 : 16 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 28/5/26.
When received, 28.6.26.

Committee's Minute GLASGOW 1-JUN 1926
Assigned + L M C 5,26
H. M. C. Currier.
Engineer Surveyor to Lloyd's Register of Shipping.

