

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 44P50

15 JUL 1925

Received at London Office

Date of writing Report

19

When handed in at Local Office

11-7-25 Port of GLASGOW

No. in Survey held at GLASGOW
Reg. Book.Date, First Survey 14-7-2 Last Survey 7th July 1925

Number of Visits

on the ^{Single} ^{Twin} ^{Triple} Screw vessel "NAIRNBANK"Tons { Gross 5155
Net 3152

Master Built at GLASGOW By whom built HARLAND & WOLFE LTD Engine No. 6794 When built 1925

Engines made at GLASGOW By whom made HARLAND & WOLFE LTD Engine No. 6794 When made 1925

Donkey Boilers made at BELFAST By whom made HARLAND & WOLFE LTD Boilers No. 864 When made 1925

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

Nom. Horse Power as per Rule 716 717 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 mm
Length of stroke 960 mm 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 mm
Distance between centres of main bearings 1300 mm Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 376 mm
as fitted 384 mm
Diameter of crank pins 384 mm METAL ROUND as per Rule 165 mm
Breadth of crank webs as fitted 176 mm Thickness of ditto as per Rule 235 mm
as fitted 250 mm
Diameter of flywheel shaft as per Rule 376 mm
as fitted 384 mm 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
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 WOOD LINED. No O.G. Length of stern bush 50" Diameter of propeller 11'-9"
Pitch of propeller 9'-9" to 11'-3" (SEE 11-3) No. of blades 3 EACH state whether moveable YES Total surface 84 square feet
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 TOP 60 mm
BOL 35 mm
Are the cylinders fitted with safety valves YES Means of lubrication FORCED & SIGHT FEED 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
No. of cooling water pumps TWO 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 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" CENTRIFUGAL BALLAST 9" x 9" x 10" No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 3-3 1/2" & 1-2 1/2" IN TUNNEL
BILGE 6" x 6" x 6" and in holds, etc. 4-2 1/2" COFFERDAMS, 2-2 1/2", 3-3", 4-3 1/2" HOLDS No. of ballast pumps ONE How driven ELECTRIC MOTOR Sizes of pumps 9" x 9" x 10"
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 ON BILGE MAIN Are all the bilge suction pipes fitted with roses APES TO RULES 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
worked 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 No. of stages 3 (65 1/2") Diameters 600 x 340 x 145 mm Stroke 350 mm Driven by MAIN ENGINES
No. of auxiliary air compressors ONE No. of stages 2 (25 1/2") Diameters 400 x 350 mm Stroke 260 mm Driven by ELECTRIC MOTOR
No. of small auxiliary air compressors ONE No. of stages 2 (65 1/2") Diameters 106 x 34 mm Stroke 80 mm Driven by STEAM CYLINDER
No. of scavenging air pumps Diameter Stroke Driven by
Diameter of auxiliary Diesel Engine crank shafts as per Rule 167 mm
as fitted 170 mm 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 mm Cubic capacity of each 50 150 LITRES EACH
material SOLID DRAWN STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS Range of tensile strength 28/32 TONS
thickness MIN 57" working pressure by Rules 1350 LBS/SQ IN No. of starting air receivers TWO Internal diameter 6'-0 3/8"
Total cubic capacity 1076 CU. FT. Material STEEL Seamless, lap welded or riveted longitudinal joint T. R. D. B. S.
Range of tensile strength 28/32 TONS thickness SHELL 1 1/32"
ENDS 1 5/32" & 1 9/32" Working pressure by rules 360.75 LBS/SQ IN Is each receiver, which can be isolated,
fitted with a safety valve as per Rule YES ON COMMON 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 N° 93461)

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS	25-3-25 to 21-5-25	15 LBS/□	50 LBS/□	Nmb.	
JACKETS	18-2-25 to 13-3-25	15 LBS/□	50 LBS/□	Nmb.	
PISTON WATER PASSAGES	9-3-25 to 6-4-25	15 LBS/□	50 LBS/□	Nmb.	
MAIN COMPRESSORS—1st STAGE	20-3-25 to 23-2-25	71 LBS/□	150 LBS/□	Nmb.	
2nd	20-3-25 to 23-2-25	220 LBS/□	500 LBS/□	Nmb.	
3rd	2-3-25 to 6-3-25	1000 LBS/□	2400 LBS/□	Nmb.	
AIR RECEIVERS—STARTING	8-4-25	356 LBS/□	585 LBS/□	W.B.	BELFAST REPORT N° 9321.
INJECTION	24-4-25 to 6-5-25	1000 LBS/□	2000 LBS/□	Nmb.	A.V. N° 780/1/2/3/4/5/6.
AIR PIPES ETC. STARTING	25-2-25 to 14-6-25	356 LBS/□	712 LBS/□	Nmb.	
FUEL PIPES FILLING & SUCTIONS	15-6-25 to 17-6-25		30 LBS/□		
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS	25-5-25		10 LBS/□	Nmb.	

PLANS. Are approved plans forwarded herewith for shafting *Link with M/S INVERBANK Receivers* No. Report attaches Separate Tanks
(If not, state date of approval) *Approved 18/5/23*

SPARE GEAR

Supplied as per attached list.

The foregoing is a correct description,

For HARLAND & WOLFF, LTD.

J. C. Green,

Manufacturer.

MANAGER FINNIESTON WORKS

Dates of Survey
During progress of work in shops - 1924. Nov 26. Dec 11-21. 1925. Jan 8. 16. Feb 4. 11. 16. 18. 23. 24. 25. 26. 27. Mar 2. 3. 4. 5.
During erection on board vessel - 9. 11. 12. 13. 17. 20. 24. 25. 27. 30. 31. Apr 1. 3. 6. 7. 8. 9. 10. 14. 16. 21. 24. 27. 29. May 2. 4. 6. 7. 13.
Total No. of visits 61.

Dates of Examination of principal parts—Cylinders 18/2/25 to 13/3/25 Covers 25/3/25 to 21/5/25 Pistons 7/3/25 to 6/4/25 Rods 30/3/25 Connecting rods 17/3/25
P. 17/3/25
Crank shafts 5. 3/3/25 Thrust shafts 29/4/25 Tunnel shafts 4/5/25 Screw shaft 29/3/25 to 27/4/25 Propellers 27/4/25 Stern tubes 24/2/25 Engine seatings 16/2/25 to 29/4/25

Engines holding down bolts 12/6/25 to 17/6/25 Completion of pumping arrangements 1/7/25 Engines tried under working conditions 7/7/25

Completion of fitting sea connections 7/5/25 Stern tubes P. 7/5/25 S. 13/5/25 Screw shaft and propeller 13/5/25

Material of crank shaft STEEL Identification Mark on Do. 4M.C. 17/3/25 Material of thrust shaft STEEL Identification Mark on Do. 5. 13/5/25

Material of tunnel shafts STEEL Identification Marks on Do. SEE UNDER Material of screw shafts STEEL Identification Marks on Do. 5. 13/5/25

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" N° 6739.

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

TUNNEL SHAFTS:—
PORT N°1 1921 LLOYD 602 T.H. N°2 1944 LLOYD 614 T.H. N°3 2266 LLOYD 700 T.H. N°4 2309 LLOYD 700 T.H. N°5 2338 LLOYD 700 T.H. N°6 1846 LLOYD 677 T.H.
STAR: 1920 LLOYD 597 T.H. 1943 LLOYD 614 T.H. 2249 LLOYD 633 T.H. 2298 LLOYD 706 T.H. 2312 LLOYD 706 T.H. 1848 LLOYD 602 T.H.

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 condition and everything found satisfactory and is in my opinion eligible to be classed with record of L.M.C. 7-25.

The amount of Entry Fee £ 6 : 0 :
Special £ 110 : 16 :
Donkey Boiler Fee £ ✓ :
Travelling Expenses (if any) £ ✓ :
When applied for, 14/7/25.
When received, 21/8/25.

Committee's Minute

Assigned + LMC 7.25

CERTIFICATE WRITTEN 16.7.25

A. M. C. Crivick
Engineer Surveyor to Lloyd's Register of Shipping.



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