

REPORT ON OIL ENGINE MACHINERY.

No. 80397

Writing Report *10th May 1926* When handed in at Local Office *10/5-1926* Port of *NEWCASTLE 6/25 May 1926*
 Survey held at *Elmhurst & Walker* Date, First Survey *20 July 1925* Last Survey *6th May 1926*
 Book, *32* on the *Single* Screw vessels, *Belray* Tons: Gross *2840* Net *1655*
 at *Walker on Tyne* By whom built *Whitworth & Co Ltd* Yard No. *1013* When built *1926*
 Lines made at *Lecton & Co Ltd* By whom made *do* Engine No. *61* When made *1926*
 Key Boilers made at *Amman* By whom made *Cochran & Co (Amman) Ltd* Boiler No. *9964* When made *1926*
 re Horse Power *1350* Owners *A/S. Belnor (C. Smith)* Port belonging to *Oslo*
 Horse Power as per Rule *388* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *yes*

ENGINES, &c.—Type of Engines *Armstrong Sulzer* 2 or 4 stroke cycle *2* Single or double acting *Single*
 num pressure in cylinders *500 lb* No. of cylinders *4* Diameter of cylinders *600 mm* No. of cranks *4* Length of stroke *1060 mm*
 of bearings, adjacent to the Crank, measured from inner edge to inner edge *894 mm* Is there a bearing between each crank *yes*
 ations per minute *110* Flywheel dia. *7'-1"* Weight *10 3/4 tons* Means of ignition *Compression* Kind of fuel used *Diesel Oil*
 k Shaft, dia. of journals as per Rule *14.85"* as fitted *15.35"* Crank pin dia. *15.35"* Crank Webs Mid. length breadth *29.37"* Thickness parallel to axis *265 mm*
 heel Shafts, diameter as per Rule *14.88"* as fitted *15.35"* Intermediate Shafts, diameter as per Rule *10.7"* as fitted *12.5625"* Thrust Shaft, diameter at collars as per Rule *11 1/4"* as fitted *15.35"*
 Shafts, diameter as per Rule *None* as fitted *None* Screw Shaft, diameter as per Rule *11 1/4"* as fitted *12.5"* Is the screw shaft fitted with a continuous liner *yes*
 size Liners, thickness in way of bushes as per Rule *21/32* as fitted *3/4"* Thickness between bushes as per rule *1/2"* as fitted *7/8 7/5"* Is the after end of the liner made watertight in the
 her 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*
 e 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*
 o 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
 f the tube shaft *No* Length of Bearing in Stern Bush next to and supporting propeller *56"*
 elli, dia. *12'-10 1/2"* Pitch *10'-3 1/2"* No. of blades *4* Material *Bronze* whether Moveable *No* Total Developed Surface *56* sq. feet
 od of reversing Engines *compressed air* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *clutch* Means of lubrication
 at *led to funnel* Thickness of cylinder liners *45 mm* Are the cylinders fitted with safety valves *yes* Are the exhaust pipes and silencers water cooled or lagged with
 onducting material *lagged* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
 ing Water Pumps, No. *Two* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *yes*

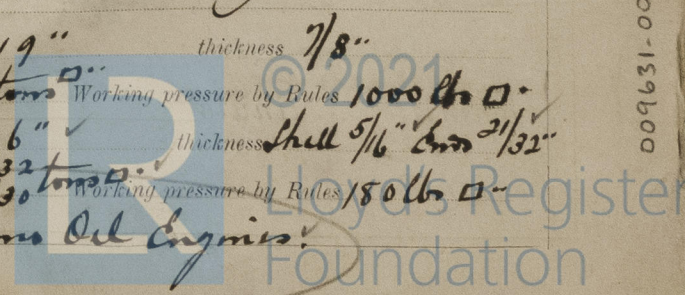
e Pumps fitted to the Main Engines, No. *one* Diameter *150 mm* Stroke *210 mm* Can one be overhauled while the other is at work *yes*
 ps connected to the Main Bilge Line { No. and Size *Two 7" x 7 1/2" two throw. & 7" x 7" x 8"* How driven *Electrical* *Steam* one driven by electric *4 x 4 1/2*
 ast Pumps, No. and size *One 7" x 7" x 5"* Lubricating Oil Pumps, including Spare Pump, No. and size *one 13 1/2" x 140 mm*
 ro independent means arranged for circulating water through the Oil Cooler *yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 ps, No. and size:—In Engine and Boiler Room *Two 2 3/4"*, one *3" aft.* one *2 3/4" in upper room* & *Two 2" oil bilge*
 olds, &c. *Two 3" in No. 1 & Two 3 1/2" in No. 2*

ependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *One 5" bore*
 all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *yes* Are the Bilge Suctions in the Machinery Space
 rom easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *yes*
 all Sea Connections fitted direct on the skin of the ship *yes* Are they fitted with Valves or Cocks *Both*
 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 *above*
 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*
 t pipes pass through the bunkers *None* How are they protected *yes*
 t pipes pass through the deep tanks *None* Have they been tested as per Rule *yes*
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *yes*
 re arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from under tanks into the cargo or machinery spaces, or from one
 partment to another *yes* Is the Shaft Tunnel watertight *None* Is it fitted with a watertight door *yes* worked from *yes*
 not g wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *yes*

in Air Compressors, No. *one* No. of stages *3* Diameters *640, 580, 140 mm* Stroke *560 mm* Driven by *Main Engine*
 iliary Air Compressors, No. *Two* No. of stages *3* Diameters *2 5/16" 10 1/2" 9 3/8"* Stroke *6"* Driven by *Steam*
 all Auxiliary Air Compressors, No. *None* No. of stages *yes* Diameters *yes* Stroke *yes* Driven by *yes*
 venging Air Pumps, No. *One* Diameter *1300 mm* Stroke *760 mm* Driven by *Main Engine*
 54 iliary Engines crank shafts, diameter as per Rule *None* as fitted *None* There are 2 Aux Oil Engines driving dynamos

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *yes*
 the internal surfaces of the receivers be examined *yes* What means are provided for cleaning their inner surfaces *Steam jet*
 there a drain arrangement fitted at the lowest part of each receiver *yes*
 gh Pressure Air Receivers, No. *8* *Blank* Cubic capacity of each *21.75 C. feet* Internal diameter *19"* thickness *7/8"*
 mless, lap welded or riveted longitudinal joint *Seamless* Material *S M Steel* Range of tensile strength *28/32 tons* Working pressure by Rules *1000 lb*
 arting Air Receivers, No. *One* Total cubic capacity *33.5 C. feet* Internal diameter *2'-6"* thickness *Shell 5/16" End 21/32"*
 mless, lap welded or riveted longitudinal joint *Riveted* Material *S M Steel* Range of tensile strength *26/30 tons* Working pressure by Rules *180 lb*
 33. *yes one Air bottle 10 C. feet capacity 600 lb H. P. for Dynamic Oil Engines*

009631-009639-0239



are
~~IS~~ A DONKEY BOILER FITTED? Yes. 2 ✓
HYDRAULIC TESTS:— If so, is a report now forwarded? Yes.
The cylinder top ends & the covers were tested by the makers to 2150 lbs
The mid & lower part of cylinder " " " to 1050 "

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	12/10, 21/10, 27/10/26	500 lbs	Water side 75 lbs	Long GM 22/10/26 27/10/26	Loud
" " COVERS	do	500 "	75 "		
" " JACKETS	do	30 lbs	75 "		
" PISTON WATER PASSAGES	Head of water only.		75 "		
MAIN COMPRESSORS—1st STAGE	29/10/25	1000 lbs	2000 lbs	with do Long GM 22/10/26	do
" 2nd "	11/11/25	200 "	450 "		
" 3rd "	11/11/25	75 "	450 "		
AIR RECEIVERS—STARTING	18/2/26	180 lbs	320 lbs	Long GM 18/2/26	Good
" INJECTION	Bottles 15/1, 15/1, 1/2, 3/2, 5/2 25/9, 29/9, 22/10, 14/12, 18/2/26 16/12, 23/2/25, 14/1, 15/1, 18/1, 10/2, 23/2/26	900 lbs	2000 "		
AIR PIPES			2000 "	Long with GM. 2000 lbs & dates.	do
FUEL PIPES	17/11/25, 20/1/26	900 lbs	2000	GM	do
FUEL PUMPS	26/11/25	900 "	2000	Long GM 2000 lbs 26/11/25	do
SILENCER	Examined 3/3/26	No test required			do
" WATER JACKET	None	Test required			do
SEPARATE FUEL TANKS	21/1/26	8 ft head	15 lb or	GM	tight & run

PLANS.	Are approved plans forwarded herewith for Shafting	Yes	Similar to	Yes	Right & don
	(If not, state date of approval)		in S. Bellis	Receivers	
Donkey Boilers	Yes		Forwarded by	Separate Tanks	Yes
	General Pumping Arrangements	Yes	report on Belmor	Burning Arrangements	Yes
SPARE GEAR					

SPARE GEAR 1 cylinder cover, 2 fuel & air valves, 4 fuel needle valves with guides, 2 fuel valves with levers, rings & cones, 4 nozzles, one complete piston with rings, complete set of 4 wheels, 4 top & 4 bottom end bolts & nuts, one set of coupling bolts for crank shaft & set for intermediate shafts, a complete set of working parts for main fuel pumps, complete set of valves for circulating water pumps and for lubricating oil pumps, for cooling water & for bilge pumps, nests of valves for scavenge pumps, set of studs & nuts for one cylinder, or cylinder lines, one set main bearing brasses, fuel cams, rods and pins, main piston skirt, one cast iron propeller, thrust pads, compressor piston.

The foregoing is a correct description.

SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED.
W. H. Waddingham
1925

1925		1926	
Dates of Survey while building	During progress of work in shops - During erection on board vessel - Total No. of visits	July 20, 29, Aug 5, 6, 7, 12, 14, 17, 20, 24, 26, 27, 28, Sept 3, 9, 10, 11, 14, 16, 18, 21, 22, 23, 24, 25, 29, 30, Oct 1, 2, 6, 7, 9, 12, 13, 15, 16, 20, 21, 27, 28, 29, 30, Nov 2, 6, 9, 11, 12, 14, 17, 18, 19, 20, 25, 26, Dec 1, 2, 3, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 21, 23, 24, 28, 31, '26 14, 15, 18, 19, 20, 22, 25, 26, 27, 28, Feb 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 15, 16, 18, 19, 22, 23, 24, 25, 26, Mar 1, 2, 3, 4, 5, 8, 11, 12, 15, 16, 23, 26, 29, 30, Apr 4, 6, 1926	Jan 5, 6, 7, 8, 1926
150			
Dates of Examination of principal parts—Cylinders 24/5, 26/5, 27/5, 28/5, 29/5, 30/5, 31/5, 1/6, 2/6, 3/6, 4/6, 5/6, 6/6, 7/6, 8/6, 9/6, 10/6, 11/6, 12/6, 13/6, 14/6, 15/6, 16/6, 17/6, 18/6, 19/6, 20/6, 21/6, 22/6, 23/6, 24/6, 25/6, 26/6, 27/6, 28/6, 29/6, 30/6, 31/6, 1/7, 2/7, 3/7, 4/7, 5/7, 6/7, 7/7, 8/7, 9/7, 10/7, 11/7, 12/7, 13/7, 14/7, 15/7, 16/7, 17/7, 18/7, 19/7, 20/7, 21/7, 22/7, 23/7, 24/7, 25/7, 26/7, 27/7, 28/7, 29/7, 30/7, 31/7, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 8/8, 9/8, 10/8, 11/8, 12/8, 13/8, 14/8, 15/8, 16/8, 17/8, 18/8, 19/8, 20/8, 21/8, 22/8, 23/8, 24/8, 25/8, 26/8, 27/8, 28/8, 29/8, 30/8, 31/8, 1/9, 2/9, 3/9, 4/9, 5/9, 6/9, 7/9, 8/9, 9/9, 10/9, 11/9, 12/9, 13/9, 14/9, 15/9, 16/9, 17/9, 18/9, 19/9, 20/9, 21/9, 22/9, 23/9, 24/9, 25/9, 26/9, 27/9, 28/9, 29/9, 30/9, 31/9, 1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10, 10/10, 11/10, 12/10, 13/10, 14/10, 15/10, 16/10, 17/10, 18/10, 19/10, 20/10, 21/10, 22/10, 23/10, 24/10, 25/10, 26/10, 27/10, 28/10, 29/10, 30/10, 31/10, 1/11, 2/11, 3/11, 4/11, 5/11, 6/11, 7/11, 8/11, 9/11, 10/11, 11/11, 12/11, 13/11, 14/11, 15/11, 16/11, 17/11, 18/11, 19/11, 20/11, 21/11, 22/11, 23/11, 24/11, 25/11, 26/11, 27/11, 28/11, 29/11, 30/11, 31/11, 1/12, 2/12, 3/12, 4/12, 5/12, 6/12, 7/12, 8/12, 9/12, 10/12, 11/12, 12/12, 13/12, 14/12, 15/12, 16/12, 17/12, 18/12, 19/12, 20/12, 21/12, 22/12, 23/12, 24/12, 25/12, 26/12, 27/12, 28/12, 29/12, 30/12, 31/12, 1/13, 2/13, 3/13, 4/13, 5/13, 6/13, 7/13, 8/13, 9/13, 10/13, 11/13, 12/13, 13/13, 14/13, 15/13, 16/13, 17/13, 18/13, 19/13, 20/13, 21/13, 22/13, 23/13, 24/13, 25/13, 26/13, 27/13, 28/13, 29/13, 30/13, 31/13, 1/14, 2/14, 3/14, 4/14, 5/14, 6/14, 7/14, 8/14, 9/14, 10/14, 11/14, 12/14, 13/14, 14/14, 15/14, 16/14, 17/14, 18/14, 19/14, 20/14, 21/14, 22/14, 23/14, 24/14, 25/14, 26/14, 27/14, 28/14, 29/14, 30/14, 31/14, 1/15, 2/15, 3/15, 4/15, 5/15, 6/15, 7/15, 8/15, 9/15, 10/15, 11/15, 12/15, 13/15, 14/15, 15/15, 16/15, 17/15, 18/15, 19/15, 20/15, 21/15, 22/15, 23/15, 24/15, 25/15, 26/15, 27/15, 28/15, 29/15, 30/15, 31/15, 1/16, 2/16, 3/16, 4/16, 5/16, 6/16, 7/16, 8/16, 9/16, 10/16, 11/16, 12/16, 13/16, 14/16, 15/16, 16/16, 17/16, 18/16, 19/16, 20/16, 21/16, 22/16, 23/16, 24/16, 25/16, 26/16, 27/16, 28/16, 29/16, 30/16, 31/16, 1/17, 2/17, 3/17, 4/17, 5/17, 6/17, 7/17, 8/17, 9/17, 10/17, 11/17, 12/17, 13/17, 14/17, 15/17, 16/17, 17/17, 18/17, 19/17, 20/17, 21/17, 22/17, 23/17, 24/17, 25/17, 26/17, 27/17, 28/17, 29/17, 30/17, 31/17, 1/18, 2/18, 3/18, 4/18, 5/18, 6/18, 7/18, 8/18, 9/18, 10/18, 11/18, 12/18, 13/18, 14/18, 15/18, 16/18, 17/18, 18/18, 19/18, 20/18, 21/18, 22/18, 23/18, 24/18, 25/18, 26/18, 27/18, 28/18, 29/18, 30/18, 31/18, 1/19, 2/19, 3/19, 4/19, 5/19, 6/19, 7/19, 8/19, 9/19, 10/19, 11/19, 12/19, 13/19, 14/19, 15/19, 16/19, 17/19, 18/19, 19/19, 20/19, 21/19, 22/19, 23/19, 24/19, 25/19, 26/19, 27/19, 28/19, 29/19, 30/19, 31/19, 1/20, 2/20, 3/20, 4/20, 5/20, 6/20, 7/20, 8/20, 9/20, 10/20, 11/20, 12/20, 13/20, 14/20, 15/20, 16/20, 17/20, 18/20, 19/20, 20/20, 21/20, 22/20, 23/20, 24/20, 25/20, 26/20, 27/20, 28/20, 29/20, 30/20, 31/20, 1/21, 2/21, 3/21, 4/21, 5/21, 6/21, 7/21, 8/21, 9/21, 10/21, 11/21, 12/21, 13/21, 14/21, 15/21, 16/21, 17/21, 18/21, 19/21, 20/21, 21/21, 22/21, 23/21, 24/21, 25/21, 26/21, 27/21, 28/21, 29/21, 30/21, 31/21, 1/22, 2/22, 3/22, 4/22, 5/22, 6/22, 7/22, 8/22, 9/22, 10/22, 11/22, 12/22, 13/22, 14/22, 15/22, 16/22, 17/22, 18/22, 19/22, 20/22, 21/22, 22/22, 23/22, 24/22, 25/22, 26/22, 27/22, 28/22, 29/22, 30/22, 31/22, 1/23, 2/23, 3/23			

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Beldis + Belmor.*
General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery + donkey boilers of this vessel have been constructed under special survey. The material and workmanship are of good quality they have been securely fitted on board and worked satisfactorily on trial. The safety valves of the donkey boilers have been adjusted to 125 pounds per square inch. The machinery of this vessel is now in my opinion eligible for record. L.M.F. 5.26 (in red) Oil engines, 2 D.Br. 125 lb., flash point of oil above 150°.*

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 83 : 4 :
Donkey Boiler Fee ... *Charged at*
Travelling Expenses (if any) £ *Expenses*
an Receipt
Committee's Minute 2. 2
Assigned + L. M. 5. 26
Oil Engines b.L.

When applied for,
20 MAY 1926
When received,
17. 1926
FRI. 28 MAY 1926

George Murdoch
Engineer-Surveyor to Lloyd's Register of Shipping.