

REPORT ON OIL ENGINE MACHINERY.

No. 82383

18 FEB 1928

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report 17th Feb 1928 When handed in at Local Office 17th Feb 1928 Port of

No. in Survey held at Newcastle on Tyne Date, First Survey 8th Feb 1927 Last Survey 6th Feb 1928

Reg. Book.

Number of Visits 136

40009 on the Single Screw vessel Belmoira

Tons Gross 3214
Net 1859

Built at Walker, Newcastle By whom built Whitworth & Co Ltd Yard No. 1027 When built 1928
Engines made at Clemite do By whom made do Engine No. 66 When made 1928
Donkey Boilers made at Annan By whom made Cochran & Co Annan do Boilers No. 10519 When made 1928
Boilers No. 10520 When made 1928
Brake Horse Power 1350 Owners A. S. Rediet Belmoira Port belonging to Oslo
Nom. Horse Power as per Rule 388 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
Trade for which vessel is intended Foreign

OIL ENGINES, &c.—Type of Engines Armstrong Luger 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 500 lb Diameter of cylinders 600 mm Length of stroke 1060 mm No. of cylinders 4 No. of cranks 4
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 894 mm Is there a bearing between each crank yes
Revolutions per minute 110 Flywheel dia. 7-1" Weight 10 1/2 tons Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 14.85" Crank pin dia. 15.35" Crank Webs Mid. length breadth 29.37" Thickness parallel to axis 265 mm
as fitted 15.35" Mid. length thickness 10.45" Thickness around eye hole 177 1/2 mm

Flywheel Shaft, diameter as per Rule 14.85" Intermediate Shafts, diameter as per Rule 10.7" Thrust Shaft, diameter at collars as per Rule 10 1/2"
as fitted 15.35" as fitted 12.56" as fitted 15.35"

Tube Shaft, diameter as per Rule None Screw Shaft, diameter as per Rule 11 1/4" Is the screw shaft fitted with a continuous liner yes
as fitted as fitted 12.5"

Bronze Liners, thickness in way of bushes as per Rule 2 1/32" Thickness between bushes as per rule 1/2" Is the after end of the liner made watertight in the
as fitted 3/4" as fitted 23/32" 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

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 Length of Bearing in Stern Bush next to and supporting propeller 56"

Propeller, dia. 13-1 Pitch 12-3 No. of blades 4 Material Bronze whether Moveable yes Total Developed Surface 60 sq. feet

Method of reversing Engines Compression air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Dutch Means of lubrication
oil from tanks thickness of cylinder liners 4.5 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with
non-conducting 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 funnel

Cooling Water Pumps, No. 2 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. one Diameter 150 mm Stroke 240 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 7" x 7 1/2" trip down and 7" x 7" x 8" How driven Electrical Steam

Ballast Pumps, No. and size One 7" x 7" x 8" Lubricating Oil Pumps, including Spare Pump, No. and size One 150 mm diam x 175 mm stroke driven by electric 4" x 4 1/2"

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 Three 3", one 3" aft, two 2 1/2" oil bilge and one 3" in cofferdam.

In Holds, &c. No 3" in No 1 and two 3 1/2" in No 2

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 6" and one 5" diam

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 Both

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 above

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 None 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

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 3 Diameters 640-550 Stroke 560 mm Driven by Main Engine

Auxiliary Air Compressors, No. one No. of stages 3 Diameters 250-167, 93 1/2 Stroke 6" Driven by Steam

Small Auxiliary Air Compressors, No. None No. of stages 1 Diameters 10 1/2 Stroke 6" Driven by

Scavenging Air Pumps, No. one Diameter 1300 mm Stroke 760 mm Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted None

IR 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 Steam jet

Is there a drain arrangement fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. 3 starting Cubic capacity of each 21.75 C feet Internal diameter 19" thickness 7/8"

Seamless, lap welded or riveted longitudinal joint Seamless Material M steel Range of tensile strength 28/32 tons Working pressure by Rules 1000 lb sq. in.

Starting Air Receivers, No. one Total cubic capacity 33.5 C feet Internal diameter 30" thickness 5/16"

Seamless, lap welded or riveted longitudinal joint Riveted Material M steel Range of tensile strength 28/32 tons Working pressure by Rules 1000 lb sq. in.

also one H.P. air bottle 10 C feet, 600 lbs O.W.P. for Diesel driven generator

W341-0025

IS A DONKEY BOILER FITTED? *Yes* *Yes* If so, is a report now forwarded? *Yes (C. Long)*
PLANS. Are approved plans forwarded *Yes* *with report on* *Belnor* Receivers *yes, (now)* Separate Tanks *yes* *with report*
(If not, state date of approval)
Donkey Boilers *yes (now)* General Pumping Arrangements *yes (now)* Oil Fuel Burning Arrangements *yes, do*
SPARE GEAR 1 Cylinder cover, 2 fuel and air valves, 4 fuel needle valves with guides, 2 fuel
valves with sleeves rings and cones, four nozzles, one complete piston with
rings, a complete set of spiral wheels, 4 top and 2 bottom end bolts & nuts
one set of coupling bolts for crank shaft and one set for intermediate shafts,
a complete set of working parts for main fuel pump, a complete set of
valves for circulating water pump and for lubricating oil pumps and for
cooling water and bilge pumps, seats of valves for scavenge pump, a set
of studs & nuts for one cylinder, one cylinder liner, a set of main bearing
brakes, fuel cans, rollers and pins etc. also 4 propeller blades.

The foregoing is a correct description,

For
SIR W. G. ARMSTRONG WHITWORTH & CO. LIMITED.

Manufacturer. *T. H. Hackett*

Dates of Survey while building	{	During progress of work in shops--	1927 FEB. 8-10-14-16-17-21-25. MAR. 2-5-9-15-17-25-26-31. APRIL 4-8-11-13-20-22-23-25-28. MAY 2-4-11-17-18-24-26-30. JUNE 1-3-8-9-13-16-17-20-29.												
			During erection on board vessel--	JULY 1-4-5-6-7-8-12-13-16-18-19-20-21-22-25-27-29-30. AUG. 3-4-5-8-10-11-12-15-15-16-17-18-19-20-22-24-29-30-31.											
				SEPT. 1-2-5-6-7-8-9-12-13-15-21-22-23-26-27-28-29. OCT. 3-4-6-7-8-10-11-16-19-21-26-27-28-31. NOV. 2-7-8-10-14-15-16-17-22-25-28. DEC. 1-2-6-7-12-14-19-21-30. 1928 JAN. 11-17-25-27-30. FEB. 3-6.											
				Total No. of visits 130.											
Dates of Examination of principal parts—Cylinders			24/5-1/6-8/6 5/7/27	Covers	5/7/27	Pistons	24/5-1/7/27	Rods	8/6-18/7/27	Connecting rods	8/6-1/7/27				
Crank shaft			14/5-24/5-1/6-13/6 22/7-30/7/27	Flywheel shaft	14/5-24/5-1/6-13/6 1/2/10/27	Thrust shaft	24/5-1/3/10/27	Intermediate shafts	13/10/27	Tube shaft	None				
Screw shaft			1/7/27-29/9-1/2/10/27	Propeller	16/9-29/9/27	Stern tube	29/9/27	Engine seatings	4/10/27	Engines holding down bolts	8/10-24/10/27				
Completion of fitting sea connections			11/10/27	Completion of pumping arrangements	3/2/28	Engines tried under working conditions	17/1/28.								
Crank shaft, Material			L.M. Steel	Identification Mark	1691-13/10/27	Flywheel shaft, Material	L.M. Steel	Identification Mark	7700-13/10/27						
Thrust shaft, Material			do	Identification Mark	7700-13/10/27	Intermediate shafts, Material	do	Identification Mark	2190-13/10/27						
Tube shaft, Material			None	Identification Mark	✓	Screw shaft, Material	L.M. Steel	Identification Mark	5390 D.M.R.						

Is the flash point of the oil to be used over 150° F. *yes*
Have the requirements of the Rules for oil fuel pipes and tank fittings 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 *✓*
Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Belnor. Tonnage 800 H.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under full power.*
In my opinion the machinery of this vessel is now eligible for record Oil Engines 2 L.M.C. 2.28, 2 D.Br. 150 lbs in the register book. The 2 Donkey boilers are fitted for burning oil fuel.

Plans of air reservoirs, pumping arrangements, reports on Donkey boilers & plans of same, reports on air compressors, steel & castings invoices now forwarded.

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 83 : 4 :
Donkey Boiler Fee ... £ 2 : 2 :
Travelling Expenses (if any) £
Committee's Minute
Assigned
+ L.M.C. 2.28 C.
Oil Engines 2 D.Br. 150lb

When applied for, 17 FEB. 1928
When received, 6.3.28
George Hurdoch
Engineer Surveyor to Lloyd's Register of Shipping.
TUES. 6 MAR 1928
Lloyd's Register Foundation