

REPORT ON OIL ENGINE MACHINERY.

No. 35843

8 SEP 1952

Date of writing Report

19

When handed in at Local Office

AUG 2 - 1952

Port of

Received at London Office

Sunderland.

No. in Survey held at
Reg. Book.

Sunderland.

Date, First Survey 17 September 1951

Last Survey 21 August 1951

Number of Visits

on the ~~Single~~
~~Twin~~
~~Triple~~
~~Quadruple~~ Screw vessel

"CALTEX DELHI"

Tons: Gross 851
Net 4808

Built at Sunderland

By whom built

W. Kayford & Sons Ld.

Yard No. 488

When built 1952.

Engines made at Sunderland

By whom made

W. Kayford & Sons Ld.

Engine No. 488

When made 1952.

Donkey Boilers made at Motherwell

By whom made

Richardson, Lees, Garton & Co. Ld.

Boiler No.

When made

Brake Horse Power 5150

Owners

Overseas Tank Ship (V.K.) Ld.

Port belonging to

London

Nom. Horse Power as per Rule 1090.

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Ys.

Trade for which vessel is intended

Tanker.

OIL ENGINES, &c.—Type of Engines *Opposed piston airless injection* 2 or 4 stroke cycle *2* Single or double acting *Single*

Maximum pressure in cylinders *640 lbs/sq. in.* Diameter of cylinders *6 7/8 in.* Length of stroke *upper 980 mm, lower 1340 mm* No. of cylinders *5* No. of cranks *5 triple throws*

Mean Indicated Pressure *86 lbs/sq. in.* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *1030 mm.* Is there a bearing between each crank? *Between each triple throw.*

Revolutions per minute *108* Flywheel dia. *1410 mm* Weight *1.19 tons* Means of ignition *temperatures* Kind of fuel used *Heavy oil.*

Crank Shaft, *semi forged* dia. of journals *as per Rule 491 mm* as fitted *520 mm* Crank pin dia. *520 mm* Crank Webs Mid. length breadth *730 mm* Thickness parallel to axis *290 mm* Mid. length thickness *290 mm* Thickness around eye hole *214 mm*

Flywheel Shaft, diameter *as per Rule* Intermediate Shafts, diameter *as per Rule* fitted *450 mm* Thrust Shaft, diameter at collars *as per Rule* fitted *520 mm*

Tube Shaft, diameter *as per Rule* as fitted *481.5 mm* Is the *tube* shaft fitted with a continuous liner *Ys.*

Bronze Liners, thickness in way of bushes *as per Rule* as fitted *20.5 mm* Thickness between bushes *as per Rule* as fitted *14 mm* Is the after end of the liner made watertight in the propeller boss *Ys.* If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *one length.*

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.* If so, state type *10-94 at root* Length of Bearing in Stern Bush next to and supporting propeller *5'-5"*

Propeller, dia. *14'-6"* Pitch *14-19 at tips* No. of blades *4* Material *Bronze* whether Moveable *no.* Total Developed Surface *120* sq. feet

Method of reversing Engines *Hand lever* Is a governor or other arrangement fitted to prevent racing of the engine when decoupled *Ys.* Means of lubrication *and oil* Thickness of cylinder liners *25 mm* Are the cylinders fitted with safety valves *Ys.* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *Ys.* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *—*

Cooling Water Pumps, No. *two centrifugal* 225 tons/hr. Is the sea suction provided with an efficient strainer which can be cleared within the vessel *(P.W. Cooling)*

Bilge Pumps worked from the Main Engines, No. *none* Diameter *—* Stroke *—* Can one be overhauled while the other is at work *—*

Pumps connected to the Main Bilge Line { No. and Size *2 Rotary centrifugal 80 tons/hr.* + *1 duplex 8" x 9" 120 tons/hr.* How driven *electric motor.*

Is the cooling water led to the bilges *no.* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements *no.*

Oil Pumps, No. and size *2 Centrifugal 300 tons/hr.* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *(motor driven)* *1 screw displacement 50 tons/hr.*

Are two independent means arranged for circulating water through the Oil Cooler *Ys.* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size: In Machinery Spaces *3 @ 3 1/2" in E.R.* In Pump Room *3 @ 4"* In Hold, &c. *(Tanker)* In room *2 @ 2"*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 @ 8" (Sw. Cooling pumps) + 1 @ 4" (Bilge)*

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *—* Are the Bilge Suctions in the Machinery Spaces *Ys.*

Are all Sea Connections fitted direct on the skin of the ship *Ys.* Are they fitted with Valves or Cocks *Bolt.*

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates *Ys.* Are the Overboard Discharges above or below the deep water line *Below.*

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel *Ys.* Are the Blow Off Cocks fitted with a spigot and brass covering plate *Ys.*

What pipes pass through the bunkers *all Cofferdam suction* How are they protected *(Heavy gauge pipe)*

What pipes pass through the deep tanks *none* Have they been tested as per Rule *Ys.*

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Ys.*

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 *Tanker* Is the Shaft Tunnel watertight *no.* 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. *Two.* No. of stages *Three* Diameters *9" 5 1/2" 3"* Stroke *Ys.* Driven by *Electric motor*

Auxiliary Air Compressors, No. *one* No. of stages *Two* Diameters *—* Stroke *—* Driven by *oil engine.*

Small Auxiliary Air Compressors, No. *—* No. of stages *—* Diameters *—* Stroke *—* Driven by *—*

What provision is made for first Charging the Air Receivers *Hand Starting Engine on aux. Compressor.*

Scavenging Air Pumps, No. *one* Diameter *1480 mm* Stroke *1380 mm* Driven by *crankshaft on main engine*

Auxiliary Engines crank shafts, diameter *as per Rule* as fitted *Ys.* Position *No. 1 Port In' No. 2 Port aft No. 3 (aux) above No. 1 + 2*

Have the Auxiliary Engines been constructed under special survey *Ys.* Is a report sent herewith *man Rpt. 14927 + Leds Rpt. 440*

004662-004667-0012

AIR RECEIVERS: — Have they been made under survey

Is each receiver, which can be isolated, fitted with a safety valve as per Rule 11? *Yls.*
Can the internal surfaces of the receivers be examined and cleaned? *Yls.*

Injection Air Receivers, No. -

Cubic capacity of each -

Internal diameter -

Thickness -

Seamless, lap welded or riveted longitudinal joint -

Material -

Range of tensile strength -

Working pressure -

by Rules

Actual -

Starting Air Receivers, No. *Two.*

Total cubic capacity *300 Cuft.*

Internal diameter *4'-6"*

Thickness *1 1/4"*

Seamless, lap welded or riveted longitudinal joint *Welded.*

Material *Class I Fusion M/Steel*

Range of tensile strength *28/32*

Working pressure -

by Rules

Actual *600 lbs/sq*

IS A DONKEY BOILER FITTED? *Yls (3)*

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only? *no.*

PLANS. Are approved plans forwarded herewith for Shafting *12/4/51*
(If not, state date of approval)

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

Retained.

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yls.*

State the principal additional spare gear supplied

1 Cyl. liner & packer complete, 1 main piston head & 24 piston rings, 1 Centrif. & Side Comm. roll & sp. ball end bearing, 1 Cent. 12 Side Comm. roll top end bearing, 2 Centrif. & side lip & ball end bearing ball & nut, 2 main bearing studs & nuts, 1 Set Coupling ball, 6 fuel valves complete, 10 Spray pipe 1/2 R. Sliding air valve, 1 relief valve complete, 4 Seas. pump 1/2 drive, 1 fuel pump body with duct & all Chambers with valves, 1 shaft & nut, 1 Set pads for thrust, 3 pads for liner. Shaft shaft bearings, 10 nut & hose for piston cooling service, 6 links roller chain for cam shaft drive, 1 screw shaft, 1 bronze propeller & VC

The foregoing is a correct description.

WILLIAM DOXFORD & SONS, LIMITED.

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	Director		1951		1952	
		1951	1952	1951	1952	1951	1952
		17, 21, 28, Oct 11, 22, 30, 31	Nov 1, 2, 5, 6, 7, 9, 12, 15, 16, 21, 23, 28	Dec 3, 5, 6, 10, 11, 12, 13, 18, 20	1951 Jan 4, 9, 11, 15, 17, 21, 23, 25, 28		
	During erection on board vessel - -	1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 18, 19, 20, 22, 25, 26, 27, 28, 29	Mar 3, 4, 6, 7, 10, 11, 13, 14, 16, 17, 18, 20	May 28, 30	Jun 4, 10, 17, 20	Jul 21, 24	
	Total No. of visits	48	47/51, 24/4/51	15/2/52	15/2/52	7/2/52	
Dates of Examination of principal parts -		Cylinders	Pistons	Rods	Connecting rods		
Crank shaft		5/2/52	Flywheel shaft	as Crank	Thrust shaft	as Crank	Intermediate shafts
Screw shaft		22/2/52	Propeller	18/2/52	Stern tube	18/12/51	Engine seatings
Completion of fitting sea connections		4/1/52	Completion of pumping arrangements		21/8/52		Engines tried under working conditions
Crank shaft, Material		Ingot Steel	Identification Mark	N° 488 N.H.F.	Flywheel shaft, Material	as Crank	Identification Mark
Thrust shaft, Material		as Crank	Identification Mark	as Crank	Intermediate shafts, Material	Ingot Steel	Identification Marks
Tube shaft, Material		-	Identification Mark	-	Screw shaft, Material	Ingot Steel	Identification Mark
Identification Marks on Air Receivers		K 2812 / 3		L.R. 1120 1121		A.C. 14/2/52	

Is the flash point of the oil to be used over 150° F. *Yls.*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with? *Yls.*

Description of fire extinguishing apparatus fitted

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? *(Tanker)*

If so, have the requirements of the Rules been complied with? *Not desired.*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with? *Yls.*

Is this machinery duplicate of a previous case? *Yls.*

If so, state name of vessel

"CALTEX KENYA"

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

This machinery has been built under Special Survey in accordance with the approved plans & the rules of the Society. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under full working conditions with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (F.P. above 150° F) & safety valves of boilers & superheaters adjusted under steam to working pressure. The blackston & exhaust gas boiler has also been securely fixed & safety valves adjusted to working pressure under full working conditions. The requirements of Chap. E. Section 3 have been complied with. The machinery is now eligible in our opinion to have notation LMC 8.52 (oil eng), T.S (oil eng) 2 DB 200 lbs/sq. 1 DB 100 lbs/sq. Note: Engines not to be worked continuously between 166 - 48 r.p.m.

The amount of Entry Fee

Construction (1/4 old 3/4 new) £ 204 14

Installation (100% new) £ 122 -

Donkey Boiler Fee £ 20 -

Welded Boilers

Travelling Expenses (if any) £ -

When applied for,

SEP - 5 1952

When received,

19

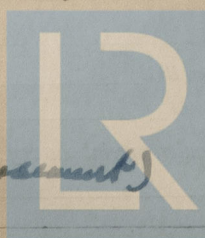
Committee's Minute

FRI. 26 SEP 1952

Assigned

+ LMC 8.52 Oil Eng. (with torsional endorsement)

2 DB (WT) 220 lbs 1 DB 100 lbs



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