

REPORT ON OIL ENGINE MACHINERY.

No. 1366.

11 JUN '35

of writing Report *3rd June, 1935* When handed in at Local Office *8th June, 1935* Port of *Mahmro*
 in Survey held at *Mahmro* Date, First Survey *8th Aug, 1934* Last Survey *3rd June, 1935*
 Book *17* on the *Single* Screw vessel *"FAGERFJELL"* Tons *Gross 8072*
Triple *Net 4758*
Quadruple
 It at *Mahmro* By whom built *Hockmms m. v. Aktieb.* Yard No. *182* When built *1935*
 nes made at *Mahmro* By whom made *Hockmms m. v. Aktieb.* Engine No. *104* When made *1935*
 ey Boilers made at *Mahmro* By whom made *Hockmms m. v. Aktieb.* Boiler No. *925/6* When made *1935*
 e Horse Power *3450* Owners *As Doreffell* Port belonging to *Ocho*
 Horse Power as per Rule *467* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*
 e for which vessel is intended

ENGINES, &c.—Type of Engines *MAN D62u 607110* 2 or 4 stroke cycle *2* Single or double acting *Double*
 um pressure in cylinders *45 kg. cm²* Diameter of cylinders *23 5/8"* Length of stroke *43 5/16"* No. of cylinders *6* No. of cranks *6*
 f bearings, adjacent to the Crank, measured from inner edge to inner edge *860 mm.* Is there a bearing between each crank *Yes*
 tions per minute *96-100* Flywheel dia. *2093 mm.* Weight *6300 kg.* Means of ignition *Diesel engt.* Kind of fuel used *Heavy oil*
 Shaft, dia. of journals *as per Rule 397 mm.* Crank pin dia. *420 mm.* Crank Webs *Mid. length breadth 700 mm.* Thickness parallel to axis *265 mm.*
as fitted 420 mm. Mid. length thickness *265 mm.* Thickness around eyehole *200 mm.*
 eel Shaft, diameter *as per Rule 397-362 mm.* Intermediate Shaft, diameter *as per Rule 345 mm.* Thrust Shaft, diameter at collars *as per Rule 362 mm.*
as fitted 420-364 mm. *as fitted 345 mm.* *as fitted 364 mm.*
 Shaft, diameter *as per Rule 380.5 mm.* Is the *screw* shaft fitted with a continuous liner *Yes*
as fitted 390 mm.
 e Liners, thickness in way of bushes *as per Rule 19.2 mm.* Thickness between bushes *as per rule 14.4 mm.* Is the after end of the liner made watertight in the
as fitted 20 mm. *as fitted 15 mm.*
 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*
 ner 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*
 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
 he tube shaft *No* Length of Bearing in Stern Bush next to and supporting propeller *1750 mm.*
 er, dia. *5096 mm.* Pitch *4132 mm.* No. of blades *4* Material *Phonore* whether Moveable *No* Total Developed Surface *92.57* sq. feet
 of reversing Engines *MAN method* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Means of lubrication
 ed. Thickness of cylinder liners *41.5 mm.* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with
 ucting 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 *led to the*
Water Pumps, No. 2. Each of *190 T/H.* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes.*
 umps worked from the Main Engines, No. *✓* Diameter *in motor room* Stroke *✓* Can one be overhauled while the other is at work *Yes*
 connected to the Main Bilge Line { No. and Size *3. One duplex 7 1/2" x 8" x 10" of 100 T/H.* 1 of 40 T/H. 1 of 30 T/H. 1. 6" x 8" x 6" of 50 T/H. 1. 6" x 6" x 6" of 30 T/H.
 How driven *Sham drivers.* *elec. driven.* *Steam driven.* *Steam driven.*
Pumps, No. and size: *Duplex 7 1/2" x 8" x 10" of 100 T/H.* Lubricating Oil Pumps, including Spare Pump, No. and size *2. Each of 100 m³/H.*
 ndependent means arranged for circulating water through the Oil Cooler *Yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 No. and size:—In Machinery Spaces *3-4". 1-4" in the after cofferdam, 3-3 1/2" in the main pump room.*
&c. 2-3 1/2" in the dry cargo hold forward, 1-3 1/2" in the pump room forward, 1-3 1/2" in the forward cofferdam.
dent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1-5".*
 he Bilge Suction pipes in Holds and Tunnel Well fitted with strainers *plates* *Yes* Are the Bilge Suctions in the Machinery Spaces
 easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *Yes*
 ea Connections fitted direct on the skin of the ship *Yes* Are they fitted with Valves or Cocks *Both*
 red 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.*
 ch 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*
 s pass through the bunkers *✓* How are they protected *✓*
 s pass through the deep tanks *After cofferdam suction pipe* Have they been tested as per Rule *Yes*
 es, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*
 ngement 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
 t to another *Yes* Is the Shaft Tunnel watertight *No tunnel* Is it fitted with a watertight door *✓* worked from *✓*
 essel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *✓*
Compressors, No. *None* No. of stages *✓* Diameters *✓* Stroke *✓* Driven by *✓*
Air Compressors, No. *2* No. of stages *2* Diameters *300-110 mm.* Stroke *220 mm.* Driven by *Aux. engines.*
iliary Air Compressors, No. *1* No. of stages *2* "Reaval" TCS. 2 of 8 m³ free air/hour *Small generator*
g Air Pumps, No. *2 (Tandem)* Diameter *1380 mm.* Stroke *850 mm.* Driven by *Main engine*
Engines crank shafts, diameter *as per Rule 139 mm.* *as fitted 155 mm.* Marked: *LLOYD'S No. 9241/2 P.K. 30-5-34*

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*
 rnal surfaces of the receivers be examined *Yes* What means are provided for cleaning their inner surfaces *✓*
 drain arrangement fitted at the lowest part of each receiver *Yes*
ire Air Receivers, No. *1* Cubic capacity of each *200 litres* Internal diameter *438 mm.* thickness *9.5 mm.*
 o welded or riveted longitudinal joint *Seamless* Material *Steel* Range of tensile strength *29.15 T/□"* Working pressure by Rules *40.6 kg. cm²*
ir Receivers, No. *1* Total cubic capacity *15 m³* Internal diameter *1850 mm.* thickness *30 mm.*
 o welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *44-50 kg. mm²* Working pressure by Rules *30.12 kg. cm²*

IS A DONKEY BOILER FITTED?

PLANS. Are approved plans forwarded herewith for Shifting

Donkey Boilers. 19/1-1934

General Pumping Arrangements

12/2-1934

Oil Fuel Burning Arrangements

29/10-1934

SPARE GEAR Main engine:- 2 top and 3 bottom cylinder covers, 6 complete top and 12 bottom fuel nozzles and 1 set of extra nozzles for the whole motor, 3 lengths of fuel pipes with connections, 2 complete starting air valves, 2 safety valves, 2 indicator valves, 5 sets of plungers, liners, valves and seats for fuel pumps and 1 complete fuel pump, 6 sets of piston rod packings, 12 top and 12 bottom cylinder cover studs and nuts, 1 top and 1 bottom cylinder liner, 2 pistons, 1 piston rod, 4 sets of piston rings for one piston, 6 takes up pipes with packings for piston cooling, 4 main bearing bolts and nuts and a pair of bearings, 2 crank pin bearing bolts and nuts and a bearing, 1 complete overhead bearing (4 halves) with bolts, 1 set of coupling bolts for crank and intermediate shafts, 1 propeller shaft, 1 cast iron propeller, 2 suction and 2 delivery valves and 1 set of piston rings for the scavenge pumps, 1 set of springs for the whole motor, 1/2 set of gads for the thrust bearing. Packings

The foregoing is a correct description.

KOCKUMS MEKANISKA VERKSTADS

AKTIEBOLAG

Manufacturer.

(Continued on sheet

Dates of Survey	During progress of work in shops -	During erection on board vessel -	Total No. of visits
19/1-1935	19/1-1935	19/1-1935	191
Dates of Examination of principal parts	Cylinder shaft	Flywheel shaft	Thrust shaft
19/1-1935	19/1-1935	19/1-1935	19/1-1935
Other trial in shops	20/5-1935	14/12-1934	22/1-1935
Intermediate shafts	22/1-1935	22/1-1935	22/1-1935
Tube shaft	22/1-1935	22/1-1935	22/1-1935
Screw shaft	17/1-1935	22/2-1935	14/12-34-31/1-35
Propeller	22/2-1935	14/12-34-31/1-35	14/12-34-31/1-35
Engine sealings	22/2-1935	14/12-34-31/1-35	14/12-34-31/1-35
Engines holding down bolts	22/2-1935	14/12-34-31/1-35	14/12-34-31/1-35
Completion of fitting sea connections	17/1-1935	22/2-1935	14/12-34-31/1-35
Completion of pumping arrangements	22/2-1935	14/12-34-31/1-35	14/12-34-31/1-35
Engines tried under working conditions	22/2-1935	14/12-34-31/1-35	14/12-34-31/1-35
Crank shaft, Material	Steel	Steel	Steel
Identification Mark	17/1-1935	22/2-1935	14/12-34-31/1-35
Thrust shaft, Material	"	"	"
Identification Mark	17/1-1935	22/2-1935	14/12-34-31/1-35
SPARE SCREW	"	"	"
Identification Mark	17/1-1935	22/2-1935	14/12-34-31/1-35
Tube shaft, Material	"	"	"
Identification Mark	17/1-1935	22/2-1935	14/12-34-31/1-35

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

Yes

Is this machinery duplicate of a previous case No

If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) The auxiliary machinery of this vessel consists of two 3-cylinder, 4-stroke single acting heavy oil engines built by Messrs. Kockums M. V. Aktief. of Malmö. The cylinders are 240 mm. in diam., stroke 360 mm. and R.P.M. = 350. The engines are of the compressor type and each is driving a dynamo of 75 K.W. A steam driven dynamo of 15 K.W. is also fitted.

The main and auxiliary engines of this vessel have been built under special survey in accordance with the Rules and the approved plans.

The materials fulfil the Rule requirements and the workmanship is good.

The shaftings as per forging reports attached herewith.

The main and auxiliary engines and pumps have been tested under full working conditions and found to work satisfactory.

The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book of this Society, viz. - L.M.C. 6.35 See letter!

Working pressure of donkey boilers 171 lbs. per sq. inch.

The amount of Entry Fee ... \$4. 109.20

When applied for,

Special ... \$4. 2350.98

8th June, 1935

Donkey Boiler Fee ... \$4. 318.50

When received,

Sum of 1 start in minor

Tackling Expenses (if any) ... \$4. 76.44

19-7-35

Cost & msp. of eng. frg.

Committee's Minute ... \$4. 72.00

12 JUL 1935

Assigned

+ L.M.C. 6.35 Oil Engines

Cl. 2 DB-171 lbs.

Rpt. 9a.

Port of

Malmö

Continuation of Report No. 1366 dated 8th June, 1935 on the

1/5 "FAGERFJELL", No. 89317 in the Register Book Supplement.

Square gear (cont.): -

Auxiliary oil engines:- 1 cylinder cover, 1 set of studs and nuts for one cylinder cover, 4 complete exhaust valves and 2 extra valves, seats and spindles, 1 complete air inlet valve, 2 complete starting air valves, 1 safety valve, 3 complete fuel nozzles with pipes and 15 extra nozzles, 3 plungers, liners, valves and seats and 1 set of other working parts for fuel pumps, 1 cylinder liner, 2 pistons, 1 gudgeon pin and bush bearing, 6 sets of piston rings for one piston, 1 crank pin bearing with bolts and nuts, 1 main bearing with bolts and nuts, 1 set of springs and 2 sets of packings for one motor, 1 set of rollers for the valve gear, 1 set of spur wheels for the cam shaft drive, 1 wheel for the lubricating oil pump.

Air compressors (auxiliary):- 1 set of piston rings for the H.P. and L.P. pistons for one compressor, 1 set of suction and pressure valves for each stage for one compressor.

Pumps:- 1 set of valves for each type of bridge pumps, 1/2 set of valves for oil fuel transfer and ballast pumps, 1 piston rod (steam and oil and), 1 set of piston rings and 1 set of valves for the cargo pumps.

General:- A quantity of assorted nuts and bolts, lengths of pipes for the fuel delivery to the main and auxiliary power cylinders and the air delivery from the auxiliary compressors to the receivers, with unions and flanges.

Donkey boiler:- 2 safety valve springs, 2 stay and 6 ordinary tubes, 2 fuel check valves, 1/2 set of fuel pump valves, 1 set of oil burners and 12 extra nozzles for the oil fuel burning arrangement.

In addition to the pumps mentioned above the following are also installed, viz.:-

In the motor space:

1 cooling water pump for aux. engine of 50 T/H. Electric driven.
1 sanitary pump of 20 T/H " "
1 rotary oil transfer pump of 20 mi³/H " "
1 duplex " " " 20 mi³/H Steam driven.
1 rotary fresh water pump of 2 T/H Electric driven.
Two units of oil fuel pressure pumps for donkey boilers.
Two fuel pumps for donkey boilers 6" x 4" x 6" Duplex.

In the main pump room:

2 cargo pumps 16" x 14" x 18" Duplex. Steam driven.
1 fire extinguishing pump.

In pump room forward:

1 oil transfer pump 6" x 6" x 6" Duplex. Steam driven.

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Engineer Surveyor to Lloyd's Register of Shipping.



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