

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 35204

Received at London Office 5 OCT 1949

Date of writing Report

19

When handed in at Local Office

13th October 1949

Port of

Sunderland.

No. in Survey held at  
Reg. Book.

Sunderland.

Date, First Survey 28th May 1948 Last Survey 10th October 1949

Number of Visits 7

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

STEINGRIM STANGE

Tons Gross 10099  
Net 5895

Built at Sunderland

By whom built

Sir J. Laing Sons Ltd

Yard No. 483

When built 1949.

Engines made at Sunderland

By whom made

Wm. Leyland Sons Ltd

Engine No. 266

When made 1949.

Donkey Boilers made at Stockton

By whom made

Stockton Chem. Eng. &amp; Ry. Bldg. Co.

Boiler No. 4094

When made

Brake Horse Power 3300

Owners

Skibs A/S Aarstein

Port belonging to Oslo.

Nom. Horse Power as per Rule 412

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

Trade for which vessel is intended

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.* Diameter of cylinders *23 1/8" 600 mm* Length of stroke *upper 980 mm 91 3/16" lower 1340 mm* No. of cylinders *4* No. of cranks *4 triple throws*

Mean Indicated Pressure *88 lbs.* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *886 mm 1.39 m* Is there a bearing between each crank *Between each triple throw*

Revolutions per minute *108* Flywheel dia. *2450 mm* Weight *A. 3.4 tons* Means of ignition *temperatures* Kind of fuel used *Heavy oil*

Crank Shaft, *Solid forged* dia. of journals *as per Rule 431 mm* Crank pin dia. *450 mm* Crank Webs *Mid. length breadth 650 mm Thickness parallel to axis 255 mm* Thickness around eye hole *201 mm*

Flywheel Shaft, diameter *as per Rule 431 mm* Intermediate Shafts, diameter *as per Rule 322 mm* Thrust Shaft, diameter at collars *as per Rule 431 mm*

Tube Shaft, diameter *as per Rule* Screw Shaft, diameter *as per Rule 450 mm* Is the tube shaft fitted with a continuous liner *Yes*

Bronze Liners, thickness in way of bushes *as per Rule 22 mm* Thickness between bushes *as per Rule 14 mm* 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 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 *Yes*

If two 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 end of the tube shaft *Yes* Length of Bearing in Stern Bush next to and supporting propeller *5' 8"*

Propeller, dia. *16'-6"* Pitch *12.5' mean* No. of blades *4* Material *Bronze* whether Moveable *No.* Total Developed Surface *102 sq. feet*

Method of reversing Engines *Hand lever* Is a governor or other arrangement fitted to prevent racing of the engine when decelerated *Yes* Means of lubrication *Hand forced*

Thickness of cylinder liners *25 mm* Are the cylinders fitted with safety valves *Yes* 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 *Yes*

Cooling Water Pumps, No. *1 Engine driven* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *(F.V. Cordell)*

Bilge Pumps worked from the Main Engines, No. *none* Diameter *2 @ 4" x 8" x 8" Duplex* Can one be overhauled while the other is at work *Yes*

Pumps connected to the Main Bilge Line { No. and Size *2 @ 4" x 8" x 8" Duplex* How driven *Steam*

Is the cooling water led to the bilges *Yes* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements *Yes*

Ballast Pumps, No. and size *1 @ 10" x 12" x 10"* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *1 Engine driven 110 mm x 510 mm 1 Steam driven 4" x 8" x 18"*

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: *3 @ 3 1/2" in C.R.* In Pump Room *1 @ 2"* In Hold, &c. *(Tanker)* *1 @ 8" (Ballast pump) + 1 @ 6" 2 @ 4" in Sack*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 @ 8" (Ballast pump) + 1 @ 6"*

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

What pipes pass through the deep tanks *Yes* Have they been tested as per Rule *Yes*

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 *(Tanker)* Is the Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Yes*

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *Yes*

Main Air Compressors, No. *Two* No. of stages *3* Diameters *11 1/2" - 23 1/4" 11 1/2" - 4 1/4" 23 1/4" 4"* Driven by *Steam Engine 13 1/2" x 4"*

Auxiliary Air Compressors, No. *None* No. of stages *None* Diameters *None* Stroke *None* Driven by *None*

Small Auxiliary Air Compressors, No. *None* No. of stages *None* Diameters *None* Stroke *None* Driven by *None*

What provision is made for first Charging the Air Receivers *(Steam driven Compressors)*

Scavenging Air Pumps, No. *Two* Diameter *1510 mm* Stroke *510 mm* Driven by *Low pressure main engine*

Auxiliary Engines crank shafts, diameter *as per Rule* No. *None* Position *None*

Have the Auxiliary Engines been constructed under special survey *Yes* Is a report sent herewith *Yes*

AIR RECEIVERS: — Have they been made under survey...

Is each receiver, which can be isolated, fitted with a safety valve as per Rule...

Can the internal surfaces of the receivers be examined and cleaned...

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

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

Thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules

IS A DONKEY BOILER FITTED?

Is the donkey boiler intended to be used for domestic purposes only?

PLANS.

Are approved plans forwarded herewith for Shafting...

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied?

State the principal additional spare gear supplied

1 Cylinder liner & packet. 1 main piston head & 24 rings, 2 Central Cam rod  
top shaft end bearing bell & nuts, 2 Side & 4 bell & nuts, 2 top side rod bell & nuts, 2 main bearing studs & nuts  
1 Self coupling bell & nuts, 4 fuel valves complete, 8 Spray flaps, 1 N.R. Starting air valve, 1 Cyl. relief valve,  
1 fuel pump body with duct, 1 del. Chamber & valves, 1 bell crank lever with 1 del. & 1 stud, 1 Self thrust. Pads  
1 del. for shaft bearings, 1 Sph. bearing for Cent. side belt. End, 2 Central & side top end bearings, 1 C.I.  
Propeller, 1 screw shaft, 6 rubber hoses for piston cooling, 1 blower roller chain for camshaft drive & c.

The foregoing is a correct description.

W. G. F. G. Director.

Manufacturer.

Dates of Examination of principal parts—Cylinders 1948 May 18 Jun 3 7 8 14 15 17 21 25 28 Aug 17 23 25 27 Sep 10 Nov 10 Dec 8 13 16 17 21 22 23 24 28 31 / 1949 Jan 4 5 6 7 10 11 12 13 14 17  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits 64

Dates of Examination of principal parts—Cylinders 1948 May 18 Jun 3 7 8 14 15 17 21 25 28 Aug 17 23 25 27 Sep 10 Nov 10 Dec 8 13 16 17 21 22 23 24 28 31 / 1949 Jan 4 5 6 7 10 11 12 13 14 17  
Crank shaft 1/10/48 Flywheel shaft as crank Thrust shaft as crank. Intermediate shafts 2/6/49 Tube shaft --  
Screw shaft 23/6/49 Propeller 10/6/49 Stern tube 2/6/49 9/6/49 Engine seatings (Tank top) Engines holding down bolts 4/9/49  
Completion of filling sea connections 8/6/49 Completion of pumping arrangements 4/10/49 Engines tried under working conditions 12.11.49/10/49  
Crank shaft, Material Infer. Steel Identification Mark N. 266 WHF 1/10/48 Flywheel shaft, Material as crank Identification Mark as crank  
Thrust shaft, Material as crank Identification Mark as crank Intermediate shafts, Material Infer. Steel Identification Marks N. 14815 - 483. 484 WHF 21/6/49  
Tube shaft, Material -- Identification Mark -- Screw shaft, Material Infer. Steel Identification Mark N. 14815 - 481 WHF. 23/6/49  
Identification Marks on Air Receivers K 2148 / 9  
L.R. 22439  
A.R.R. 2/9/48

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.  
Description of fire extinguishing apparatus fitted 1 1/2 H.L. Perforated Pipe for Steam led around ER & B. Rm. 8-2 full. Contaminant in Phenol  
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 --  
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with not required.  
Is this machinery duplicate of a previous case Yes. If so, state name of vessel "Kieph Rover".

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel 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 adjusted under steam to working pressure. Section 20 of the rules have been complied with. The machinery is eligible in our opinion to have notation as LMC 10.49 (oil Eng) T.S. (CL) 2 DB 150 lbs. Note: The auxiliary machinery & shafting of this vessel is that originally intended for boat 264.

The amount of Entry Fee .. £ : : When applied for, OCT 14 1949  
Special ... £ 24 : 8 :  
Donkey Boiler Fee ... £ 16 : - :  
Travelling Expenses (if any) £ : : :  
Committee's Minute FRI. 11 NOV 1949  
Assigned + LMC 10.49 Oil Eng. C.L. 2 DB 150 lb.

For Rasm & John Lundgren, Engineer Surveyor to Lloyd's Register of Shipping.  
Tonnage approved 10/2/48 for 108 tons

