

# REPORT ON OIL ENGINE MACHINERY.

No. 3394

B.C. vessel.

Received at London Office

When handed in at Local Office

19/11 1949

Port of Bergen

reg. & Florvåg

Date, First Survey

21/6/49

Last Survey

27/6 1949

Number of Visits

4

vessel "HAVSTRAND" ex "LIZZIE BIRREL"

Tons Gross 93.39  
Net 41.98

to be Buccae

By whom built

unknown

Yard No.

When built 1913

Aalesund

By whom made

Hjelset Motorfabrik

Engine No. 407

When made 1948

Engines made at

By whom made

Boiler No.

When made

Indicated Horse Power 120

Owners

Karsten Daae

Port belonging to

Bergen

Power as per Rule 60

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

Trade for which vessel is intended Fishing & light cargo

ENGINES, &c. —Type of Engines Semi-Diesel 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 24 kg/cm<sup>2</sup> Diameter of cylinders 329 mm Length of stroke 380 mm No. of cylinders 2 No. of cranks 2

Mean Indicated Pressure 3 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders  Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1001 mm Is there a bearing between each crank no Revolutions per minute 340

Flywheel dia. 900 mm Weight 1050 kg Moment of inertia of flywheel (16 lbs. in<sup>2</sup> or Kg.cm<sup>2</sup>)  Means of ignition Hot bulb & clear coil Kind of fuel used light Diesel oil

Crank Shaft,  Solid forged  Semi built  All built dia. of journals 160 mm as per Rule  as fitted 160 mm Crank pin dia. 180 mm Crank webs Mid. length breadth 260 mm Thickness parallel to axis  Mid. length thickness 150 x 114 mm shrunk Thickness around eyehole

Flywheel Shaft, diameter as per Rule  as fitted 150 mm at top of cone Intermediate Shafts, diameter as per Rule  as fitted 110 mm Thrust Shaft, diameter at collars as per Rule  as fitted 120 mm

Tube Shaft, diameter as per Rule  as fitted 110 mm Screw Shaft, diameter as per Rule  as fitted 115 mm in body Is the  tube  screw shaft fitted with a continuous liner  no

Bronze Liners, thickness in way of bushes as per Rule  as fitted 30 mm Thickness between bushes as per Rule  as fitted 30 mm Is the after end of the liner made watertight in the propeller boss  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 tube shaft no If so, state type no Length of bearing in Stern Bush next to and supporting propeller 450 mm

Propeller, dia. 1400 mm Pitch ab. 1000 mm No. of blades 2 Material bronze whether moveable yes Total developed surface ab. 25 sq. feet Moment of inertia of propeller (16 lbs. in<sup>2</sup> or Kg.cm<sup>2</sup>)  Kind of damper, if fitted

Method of reversing Engines reversible prop. Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication Force feed lubricator Thickness of cylinder liners 30 mm Are the cylinders fitted with safety valves no 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

Cooling Water Pumps, No. 1 Is the sea suction provided with an efficient strainer which can be cleared within the vessel  Bilge Pumps worked from the Main Engines, No. 2 Diameter 70 mm Stroke 30 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line Bilges { No. and size 1 - 528 gall/h. 1 - (gear wheel) 1980 gall/h. How driven M.E. Belt driven from M.E. 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

Ballast Pumps, No. and size  Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 - 10 run feed lubricator Are two independent means arranged for circulating water through the Oil Cooler no Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces 2 - 1" and 1 - 3" (to hand pump on deck) In pump room

In holds, &c. 2 - 1" and 1 1/2" (at after end of hold). Fore peak space: no means of draining provided. Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 - 1" (both connected to M.E. driven plunging bilge pump) Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes yes Are the bilge suction pipes 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 no - strums fitted

Are all Sea Connections fitted direct on the skin of the Ship yes Are they fitted with valves or cocks valve Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates no 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  Are the blow off cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers  How are they protected  What pipes pass through the deep tanks  Have they been tested as per Rule

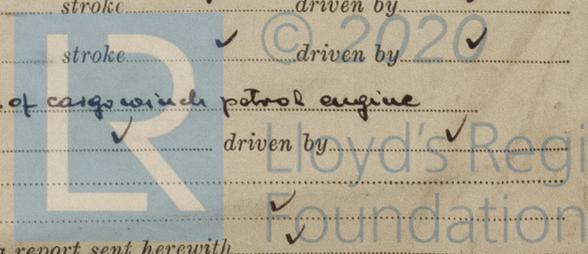
Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times yes Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another no 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 none Main Air Compressors, No. 1 Air receivers charged by compressed air from M.E. cylinders No. of stages 1 diameters 10" stroke  driven by

Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 10" stroke  driven by  Small Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 10" stroke  driven by

What provision is made for first charging the air receivers first charged by compressed air from cyl. of cargo winch patrol engine Scavenging Air Pumps, No. 1 diameter 10" stroke  driven by

Auxiliary Engines crank shafts, diameter as per Rule  as fitted none Position  Have the auxiliary engines been constructed under special survey  Is a report sent herewith



1510 - H191100 - 0151  
601435 - 001401 - 0151

**AIR RECEIVERS:**—Have they been made under survey... *no* State No. of report  
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule... *no*  
 Can the internal surfaces of the receivers be examined and cleaned... *yes* Is a drain fitted at the lowest...  
 Injection Air Receivers, No. *✓* Cubic capacity of each... *✓* Internal diameter... *✓*  
 Seamless, welded or riveted longitudinal joint... *✓* Material... *✓* Range of tensile strength... *✓* Working pressure...  
 Starting Air Receivers, No. *2* Total cubic capacity *ab. 200 lbs* Internal diameter *283 mm* thickness...  
 Seamless, welded or riveted longitudinal joint... *welded* Material... *steel* Range of tensile strength... *✓* Working pressure...

**IS A DONKEY BOILER FITTED**... *no* If so, is a report now forwarded...  
 Is the donkey boiler intended to be used for domestic purposes only...  
**PLANS.** Are approved plans forwarded herewith for shafting... *batch of plans received from Glasgow is returned herewith under separate cover* Receivers... *yes (not yet approved)* Separate fuel tanks... *✓*  
 Donkey boilers... *✓* General pumping arrangements... *yes (not yet approved)* Pumping arrangements in machinery space... *yes (not yet approved)*  
 Oil fuel burning arrangements... *✓*  
 Have Torsional Vibration characteristics been approved... *✓* Date of approval... *✓*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied... *For short voyages - yes*  
 State the principal additional spare gear supplied... *✓*  
 The foregoing is a correct description, *✓* Manufacturer...

Dates of Survey *white building* During progress of work in shops - -  
 During erection on board vessel - - *21/6, 22/6, 24/6 & 27/6.49.*  
 Total No. of visits... *4*  
 Dates of examination of principal parts—Cylinders... *24/6* Covers... *24/6* Pistons... *24/6* Rods... *✓* Connecting rods... *24/6*  
 Crank shaft... *24/6* Flywheel shaft... *24/6* Thrust shaft... *24/6* Intermediate shafts... *24/6* Tube shaft... *✓*  
 Screw shaft... *22/6* Propeller... *22/6* Stern tube... *22/6* Engine seatings... *24/6* Engine holding down bolts... *24/6*  
 Completion of fitting sea connections... *✓* Completion of pumping arrangements... *✓* Engines tried under working conditions... *27/6*  
 Crank shaft, material... *steel* Identification mark... *K.V. 6884.1.11* Flywheel shaft, material... *steel* Identification mark... *N.V. No. 387 67.48 M.A.I.*  
 Thrust shaft, material... *steel* Identification mark... *N.V. No. 387 67.48 M.A.I.* Intermediate shafts, material... *steel* Identification marks... *— " —*  
 Tube shaft, material... *✓* Identification mark... *✓* Screw shaft, material... *steel* Identification mark...  
 Identification marks on air receivers... *Both marked: B.C. 239-48. R.F.*

Welded receivers, state Makers' Name... *Hjelset Motorfabrik, Alesund*  
 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... *no*  
 Description of fire extinguishing apparatus fitted... *Hand connection on deck*  
 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... *✓*  
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with... *✓*  
 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...)  
*This semi-diesel engine was constructed and fitted under supervision of Norwegian "Sjöpäpatskontor" at Alesund and it is stated that materials for shafting have been tested by Det Norske Veritas Surveyors.*  
*Workmanship and materials as far as could be ascertained are good.*  
*Plans in duplicate of starting air receivers and intermediate shaft and plan in triplicate of pumping arrangement are forwarded herewith under separate cover.*  
*The Machinery of this vessel is eligible in our opinion to be classed MBS and t.s.d. G,49, subject to O.F. bunker fittings and pumping arrangement being altered to B.C. Rule requirements and air receivers being provided with fusible plugs before the end of December, 1949.*

The amount of Entry Fee ... *KR. 50.-* :  
 Special ... *✓* :  
 Donkey Boiler Fee... *✓* :  
 Travelling Expenses (if any) *KR. 5.-* :  
 Above fees etc. included in *Apr. 9.*  
 Committee's Minute...  
 Assigned... *See minute on Bgn 3422*  
 When applied for... *26/7 1949*  
 When received... *13/8 1949*  
 S. A. Eide B. J. Wittoe  
 Engineer Surveyor to Lloyd's Register of Shipping

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

FRI. 3 MAR 1950

