

REPORT ON OIL ENGINE MACHINERY.

22nd JAN 1931

Received at London Office

Date of writing Report 19th Jan 1931 When handed in at Local Office 19th Jan 1931 Port of **GOTHENBURG**No. in Survey held at **GOTHENBURG**Date, First Survey 5th Aug 1930Last Survey 10th January 1931Reg. Book
SUPPLEMENT91164 on the **Single**
Twin
Triple
Quadruple Screw vessel**"KAIA KNUDSEN"**Tons ^{Gross} 9063
_{Net} 5533Built at **HAMBURG**By whom built **BLOHM & VOSS**Yard No. **488** When built **1931**Engines made at **GOTHENBURG**By whom made **A.B. GÖTAVERKEN**Engine Nos. **964** When made **1931**Donkey Boilers made at **HAMBURG**By whom made **BLOHM & VOSS**Boiler Nos. **1378** When made **1930**Brake Horse Power **2475**Owners **KNUT KNUDSEN O.A.S.**Port belonging to **HAUGESUND**Nom. Horse Power as per Rule **708 709**Is Refrigerating Machinery fitted for cargo purposes **No**Is Electric Light fitted **YES**

Trade for which vessel is intended

GENERAL**Anchor****L ENGINES, &c.**—Type of Engines **Two Diesel oil Engines** or 4 stroke cycle **4** Single or double acting **Single**Maximum pressure in cylinders **35 kg/cm²** Diameter of cylinders **630 mm [24 3/8"]** Length of stroke **1300 mm [51 1/2"]** No. of cylinders **12** No. of cranks **12**Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **899 mm** Is there a bearing between each crank **Yes**Revolutions per minute **125** Turning wheel flywheel dia. **1902 mm** Weight **6375 kg** Means of ignition **Diesel system** Kind of fuel used **Diesel oil**Crank Shaft, dia. of journals **404 mm** as per Rule **404 mm** as fitted **404 mm** Crank pin dia. **404 mm** Crank Webs Mid. length breadth **345 mm** as per Rule **345 mm** as fitted **345 mm** Mid. length thickness **345 mm** as per Rule **345 mm** as fitted **345 mm** Thrust Shaft, diameter at collars **345 mm** as per Rule **345 mm** as fitted **345 mm**Flywheel Shaft, diameter **345 mm** as per Rule **345 mm** as fitted **345 mm** Intermediate Shafts, diameter **345 mm** as per Rule **345 mm** as fitted **345 mm** Screw Shaft, diameter **363 mm** as per Rule **363 mm** as fitted **363 mm** Is the {tube} {screw} shaft fitted with a continuous liner **Yes**Tube Shaft, diameter **363 mm** as per Rule **363 mm** as fitted **363 mm** Is the {tube} {screw} shaft fitted with a continuous liner **Yes**Bronze Liners, thickness in way of bushes **18.5 mm** as per Rule **18.5 mm** as fitted **19 mm** Thickness between bushes **18 mm** as per Rule **18 mm** as fitted **18 mm** Is the after end of the liner made watertight in thePropeller 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**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 **Yes**If so, state type **Yes** Length of Bearing in Stern Bush next to and supporting propeller **1726 mm**Propeller, dia. **3962 mm** Pitch **3150 mm** No. of blades **4** Material **Bronze** whether Moveable **No** Total Developed Surface **2475-95 sq. feet**Method of reversing Engines **Direct reversible by means of compressed air** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes** Means of lubrication **Forced**Thickness of cylinder liners **Top 46 mm** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged with **Yes**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 **Led to a funnel**Cooling Water Pumps, No. **Two centrifugal, 175 tons** 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. **2** Diameter **160 mm** Stroke **260 mm** Can one be overhauled while the other is at work **Yes**Pumps connected to the Main Bilge Line **No. and Size** **Two direct driven pumps 20 tons each, One separate bilge pump 20 tons, The ballast pump 60 tons** How driven **By main engines** **Electric** **Electric**Ballast Pumps, No. and size **One rotary pump 60 tons** Lubricating Oil Pumps, including Spare Pump, No. and size **Two rotary, 70 tons each**Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge **Yes**Pumps, No. and size:—In Machinery Spaces **Two 3 1/2", One 3", Four 2 1/2"** [Two 2 1/2" in cofferdams in way of mach. space] In Pump Room **None**In Holds, &c. **None** [Two 2 1/2" to hold, one 2 1/2" to forward pump room & three 3 1/2" to pump room & midship connected to separate pumps] **Yes**Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **One 3 1/2" to bilge pump & One 5" to ballast pump** **Yes**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 they 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 **Yes**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**Do pipes pass through the bunkers **No bunkers** How are they protected **Yes**Do pipes pass through the deep tanks **Large oil pipes & heating coils** 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 **Yes**Is the Shaft Tunnel watertight **No tunnel** Is it fitted with a watertight door **Yes** worked from **Yes**On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **Renewed 11.38**Main Air Compressors, No. **2** No. of stages **3** Diameters **20540x600 mm** Stroke **520 mm** Driven by **Main engines**Auxiliary Air Compressors, No. **3** No. of stages **3** Diameters **78, 285-38 mm** Stroke **290 mm** Driven by **Aut. engines**Small Auxiliary Air Compressors, No. **1** No. of stages **2** Diameters **35x106 mm** Stroke **80 mm** Driven by **Steam engine**Exhausting Air Pumps, No. **None** Diameter **—** Stroke **—** Driven by **—**Auxiliary Engines crank shafts, diameter **170 mm** as per Rule **170 mm** as fitted **170 mm** Position **Two on port side one on starboard side in eng. room****R RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Yes**In the internal surfaces of the receivers be examined and cleaned **2 working removed; 3 others used for auxiliary engines 11.38**High Pressure Air Receivers, No. **5** Cubic capacity of each **2 of 400 liters, 3 of 35 "** Internal diameter **450 mm, 404 mm, 197 mm** thickness **25.5 mm, 23.0 mm, 9.5 mm**Seamless, lap welded or riveted longitudinal joint **3 seamless** Material **L.M. Steel** Range of tensile strength **As per Rule** Working pressure **By Rules 71.4 kg/cm² Actual 65 kg/cm²**Starting Air Receivers, No. **2** Total cubic capacity **2x197=38.4 cub. met.** Internal diameter **1800x1850 mm** thickness **25x25.5 mm**Seamless, lap welded or riveted longitudinal joint **Riveted** Material **L.M. Steel** Range of tensile strength **As per Rule** Working pressure **By Rules 25.4 kg/cm² Actual 25 kg/cm²**

IS A DONKEY BOILER FITTED? *Yes two boilers* If so, is a report now forwarded? *No* [Please see Hamburg

Is the donkey boiler intended to be used for domestic purposes only *No*

PLANS. Are approved plans forwarded herewith for Shafting *1/1/29 20/1/30 21/1/30* Receivers *19/12/29 28/1/30* Separate Tanks ☒
(If not, state date of approval)
Donkey Boilers ☒ General Pumping Arrangements *14/1/30* Oil Fuel Burning Arrangements ☒

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*

State the principal additional spare gear supplied

For the main engines: 10 exhaust valves complete, 10 fuel valves complete & 6 extra valves for same, 5 cam roller with pins for exhaust valves, 3 ditto for the fuel valves, 1 ditto for the starting air valve, 1 set of crosshead brasses, 1 set of crank pin brasses, 1 set of main bearing brasses, 1 cylinder liner, 1 cooling jacket for same, 4 sets of piston rings for one piston, telescopic cooling pipes, 2 pistons, 1 propeller shaft with nut, 2 cast iron propellers, 12 safety caps for the fuel piping, 12 ditto for the starting air piping.
For the main engine compressors: 1 set of crank pin brasses, 1 set of suction & delivery valves, 1 set of piston rings, 1 HP air cooling valve complete, and 5 extra valves for same, 1 starting air valve complete, 1 cam roller with pin of each size, 1 set of gudgeon pin brasses, 1 set of crank pin brasses, 2 lower halves of main bearing brasses.
For the aux. engine compressors: 1 set of valves, 1 set of piston rings.

The foregoing is a correct description,

AKTIEBOLAGET COZYVERKEN

Luis S. Neelun

Manufacturer.

Dates of Survey while building
During progress of work in shops -- *1930 Aug. 5, 7, 14, 16, 18, 19, 22, 25, 26, 28, 28, 29, Sept. 2, 4, 5, 5, 8, 9, 9, 11, 12, 12, 13, 17, 20, 22, 22, 24, 25, 29, 30. Oct. 2, 6, 13, 16, 17, 18, 21, 29, 30. Nov. 4, 7, 11, 12. Dec. 18.*
During erection on board vessel -- *1930 Sept. 30. Oct. 4, 6, 16, 17, 23. Nov. 11, 13. Dec. 13, 19, 1931. Jan. 2, 3, 5, 7, 10.*
Total No. of visits *61*

Dates of Examination of principal parts—Cylinders *16/1/30 29/1/30* Covers *19/1/30 29/1/30* Pistons *19/1/30 29/1/30* Rods *19/1/30 29/1/30* Connecting rods *14/1/30 19/1/30*
Crank shafts *5/9/30* Flywheel shaft ☒ Thrust shafts *2/10/30 4/10/30* Intermediate shafts *12/1/30* Tube shaft ☒
Screw shafts *30/8/30* Propellers *30/9/30* Stern tube ☒ Engine seatings ☒ Engines holding down bolts *16/10/30*
Completion of fitting sea connections *30/9/30* Completion of pumping arrangements *7/1/31* Engines tried under working conditions *10/1/31*
Crank shaft, Material *L.M. Steel* Identification Mark *SA 17.5.30 5A 21.5.30* Flywheel shaft, Material ☒ Identification Mark *LLOYDS 4689-90 4689-90*
Thrust shaft, Material *L.M. Steel* Identification Mark *SA 17.5.30 5A 21.5.30* Intermediate shafts, Material *L.M. Steel* Identification Marks *LLOYDS 4689-90 4689-90*
Tube shaft, Material ☒ Identification Mark ☒ Screw shaft, Material *L.M. Steel* Identification Mark *LLOYDS 4689-90 4689-90*

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 ☒

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 *No*

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 main & auxiliary engines of this vessel*

have been built under special survey and all the requirements of the Rules have been complied with.

The shafting as per forging reports attached. Material of starting air receivers as per test reports attached.

The workmanship is good & the material fulfils the requirements of the Rules & approved plans.

The auxiliary machinery consists of three 2 cyl, 2 stroke cycle, single acting Diesel oil engines, manufactured by Messrs B. Götarviken of this port, each working a dynamo of 66 kw. The main & auxiliary engines have been

tried under working conditions on a trial trip & found to work satisfactorily.

The donkey boilers have been fitted on board at Hamburg and found to be marked:

The cargo oil piping, heating coils, pumps & piping arrangement in pumprooms forward & amidship, engine seatings, stern tube & sea connections have been fitted at Hamburg. Please see the Hamburg surveyor's report on this.

The machinery of this vessel is eligible in our opinion to be classed in the Register Book of this Society with notation of L.M.C. 1.31. [Working pressure of donkey boilers 150 lbs/sq in.]

The amount of Entry Fee *£ 109:20* ✓ When applied for, *19 Jan 1931*

Special *£ 2009:28* ✓

Donkey Boiler Fee *£ 152:88* ✓

Travelling Expenses (if any) *£ 3:50* ✓

When received, *6.3.19*

Committee's Minute

FRI. 30 JAN 1931

Assigned

See Ham J.C. 19522

G. Brander E. Magnusson
Engineer Surveyor to Lloyd's Register of Shipping.



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