

REPORT ON OIL ENGINE MACHINERY.

No. 7858.

Received at London Office 10 JAN 1929

Writing Report 31/12 1928 When handed in at Local Office 10

Port of Copenhagen

Survey held at Copenhagen & Naksten Date, First Survey 11/10 1927 Last Survey 23/12 1928

Number of Visits 57

on the Single Twin Triple Quadruple Screw vessel

" SIR KARL KNUDSEN "

Tons Gross 7747.17 Net 4581.48

By whom built 9/8 Naksten Skibvaerft. Yard No. 33 When built 1928

By whom made 9/8 Birminger & Wain Engine No. 1407 When made 1928

By whom made 9/8 Friels. Babcock & Wilcox & Co. Boiler No. 826-7 When made 1928

Owners A. F. Kleveness & Co. 9/8 Port belonging to Oslo

Horse Power as per Rule 624 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

for which vessel is intended Ocean Trade, carrying petroleum in bulk

ENGINES, &c.—Type of Engines Vertical Diesel, Trunk type 2 or 4 stroke cycle 4 Single or double acting single

Mean pressure in cylinders 35 kg/cm² Diameter of cylinders 590 mm Length of stroke 1100 mm No. of cylinders 2 x 6 No. of cranks 2 x 6

bearings, adjacent to the Crank, measured from inner edge to inner edge 820 mm Is there a bearing between each crank yes

Revolutions per minute 140-145 Flywheel BALANCE Weights 60 = 20/100 Means of ignition compression Kind of fuel used ord. Diesel oil

Shaft, dia. of journals as per Rule 369 mm as fitted 372 mm Crank pin dia. 372 mm Crank Webs Mid. length breadth 600 mm Thickness parallel to axis 250 mm

Intermediate Shafts, diameter as per Rule 10" as fitted 13 1/4" - 12" Thrust Shaft, diameter at collars as per Rule 10.5" as fitted 13 1/2"

Screw Shaft, diameter as per Rule 11.05" as fitted 13 1/2" Is the tube screw shaft fitted with a continuous liner yes

Liners, thickness in way of bushes as per Rule 0.74" as fitted 13/16" - 7/8" Thickness between bushes as per rule 0.55" as fitted 9/16" = 0.563" Is the after end of the liner made watertight in the boss yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner in one length yes

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

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

If so, state type Length of Bearing in Stern Bush next to and supporting propeller 6'-2"

Propeller, dia. 12'-6" Pitch 9'-3" No. of blades 3 Material bronze whether Moveable no Total Developed Surface 33 sq. feet

Method of reversing Engines direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched yes Means of lubrication

Thickness of cylinder liners 43 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with insulating 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 funnel

Water Pumps, No. 2 H. centrifugal, 150 c. Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Pumps worked from the Main Engines, No. 2 Diameter of trunk 160 mm Stroke 206 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 2 H. 160 mm dia. 206 mm str. 1 of 9" x 11" x 10 duplex, 1 of 6 1/2" dia. 9" str. (20 c.) How driven by main engines by steam electrically

Oil Pumps, No. and size 1 of 9" x 11" x 10 duplex Lubricating Oil Pumps, including Spare Pump, No. and size 2 of 1" sq wheel, 60 c. each

Independent 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 4 of 3 1/2", 1 of 7" (2 of 1 1/2" from cofferdams)

Spaces, &c. AFT COFFERDAM: 1 of 3 1/2" MAIN PUMP ROOM: 2 of 3 1/2" FORWARD COFFERDAM: 1 of 3" FORE HULL: 2 of 3" FORWARD PUMP ROOM: 1 of 3" F.P. TANK: 1 of 3 1/2" A.P. " " 1 of 2 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 of 7" 1 of 3 1/2"

Are the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces

Are they easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves, except boiler blow off cock

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

How are they protected How are they protected

Have they been tested as per Rule yes

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

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 worked from IP

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

Air Compressors, No. 2 No. of stages 3 Diameters 600-540-120 mm Stroke 410 mm Driven by main engines

Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters 80-50-40 mm Stroke 450 mm Driven by 7 1/2'-6" steam engine

Engining Air Pumps, No. 1 Diameter 45 mm Stroke 45 mm Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes

Are the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces shaking air receiver provided with man hole; arrangements made for steaming air injection air bottles

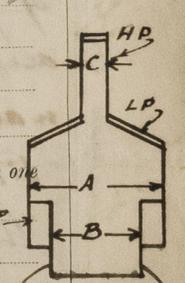
Is there a drain arrangement fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. 2 Cubic capacity of each 210 liter Internal diameter 358 mm thickness 25 mm Working pressure by Rules 74 kg/cm² 72

Unless, lap welded or riveted longitudinal joint lap welded Material S.M. steel Range of tensile strength 38.2-40 kg/cm² Working pressure by Rules 15/16 + 1/32 ENOS 1/32 SHELL: 356 IN - 25.4 kg/cm² ENOS: 307 lbs - 21.6

Working Air Receivers, No. 2 Total cubic capacity 800 cb' = 22.5 m³ Internal diameter 6'-15/16" 6'-0" thickness 1" 45.3 kg/cm² ENOS: 43.4 kg/cm²

Unless, lap welded or riveted longitudinal joint 3 1/2" rivet S Material S.M. steel Range of tensile strength 250 butt strap



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IS A DONKEY BOILER FITTED? *yes, 3 of.* If so, is a report now forwarded? *yes*
 PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Tanks *yes*
 Donkey Boilers *yes* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *yes*
 SPARE GEAR *as per accompanying list.*

The foregoing is a correct description,
AKTIESELSKABET
BURMEISTER & WAINSKIN- OG SKIBSBYGGERI
H. Maane Manufacturer.

Dates of Survey while building
 During progress of work in shops-- 11/10, 12/10, 17/10, 22/10, 29/10, 19/11, 21/11, 2/12, 6/12, 11/12, 14/12, 15/12, 23/12, 28/12, 4/1, 7/1, 8/1, 9/1, 12/1, 13/1, 16/1, 20/1, 21/1, 23/1, 27/1
 During erection on board vessel-- 27/9, 9/10, 10/10, 18/10, 30/10, 10/11, 19/11, 20/11, 28/11, 27/11, 8/12, 10/12, 15/12, 22/12, 23/12 1928.
 Total No. of visits *57*

Dates of Examination of principal parts—Cylinders *ant* Covers *24/4, 7/5* Pistons *4/6, 6/6* Rods *✓* Connecting rods *17/10, 25/10*
 Crank shaft *6/2, 14/2, 8/3, 13/4, 25/4* Flywheel shaft *✓* Thrust shaft *6/3, 12/3, 19/5* Intermediate shafts *12/3, 10/4, 29/5* Tube shaft *✓*
 Screw shaft *15/3, 22/5, 14/9* Propellers *27/9, 19/11, 15/12* Stern tubes *24/4, 15/12* Engine seatings *27/9, 29/9* Engines holding down bolts *9/10*
 Completion of fitting sea connections *27/9* Completion of pumping arrangements *19/11* Engines tried under working conditions *29/11, 22/12, 23/12*
 Crank shaft, Material *S. M. steel* Identification Mark *LLOYDS No 9277-8, 9311-12* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *S. M. steel* Identification Mark *LLOYDS No 9360-1* Intermediate shafts, Material *S. M. steel* Identification Marks *Q 29-5-28*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S. M. steel* Identification Mark *LLOYDS No 9604-3*

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 *yes.* If so, have the requirements of the Rules been complied with *yes.*
 Is this machinery duplicate of a previous case *yes.* If so, state name of vessel *M/S "SANDAR."*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This machinery has been built under special survey and in accordance with the Society's Rules, the approved plans and the requirements contained in the Secretary's letters to do 17/6, 17/8, 29/9, 1927 and 6/1, 13/9, 1928. The material used for the construction has been tested and examined as required by the Rules, and found good, and the workmanship is of good description throughout. The cargo oil pumping arrangement has been fitted in accordance with the approved plans; and on completion the whole installation of main and auxiliary machinery with pumps & pipes &c. was tried under working conditions and found satisfactory, and on the first trial trip the manoeuvring of the main engine was tested and found good.

Permanently the vessel's machinery to have notation of **LMC-12-28**, OIL ENGINE
 C.L.

The amount of Entry Fee ... *Kr. 109.20* When applied for, *8-1, 19-29*
 Special PLUS / STARTING AIR RECEIVER *2009.28*
 FITTING OF Donkey Boilers Fee ... *100.00* When received, *Kr. 1694.78 - 24.1.29 Eeb.*
 Travelling Expenses (if any) *356.50* *Kr. 960.20 - 5/2/29 Eeb.*
 LATE FEE - SUNDAY FEE *80.00*
 Committee's Minute *FRL 22 FEB 1929*

A. O. F. J. ...
 Engineer-Surveyors to Lloyd's Register of Shipping.

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

Assigned *L.M.C. 12.28 Oil Engines*
25.12.1856