

REPORT ON OIL ENGINE MACHINERY.

No. 9481.

26 NOV 1934

Received at London Office

Date of writing Report 12th November 1934 When handed in at Local Office 22nd Nov. 1934 Port of Copenhagen
 No. in Survey held at Copenhagen & Skagen Date, First Survey 17th January 1934 Last Survey 16th November 1934
 Reg. Book. 89855 on the Single Twin Triple Quadruple Screw vessel 4 col. Sc. "JUTLANDIA" Tons { Gross 8456.73
 Net 5203.71

Built at Naksoer By whom built Skagen Skibsværft Yard No. 60 When built 1934
 Engines made at Copenhagen By whom made Asst. Bismister & Høi Engines No. 2240 When made 1934
 Boilers made at Amman By whom made Cochran & Co. Ltd. Boiler No. 2752 When made 1934
 Horse Power 2 x 3250 Owners Det Østasiatiske Kompagni Port belonging to Copenhagen
 Horse Power as per Rule 2 x 538.3 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 for which vessel is intended Passengers & General Cargo, Ocean Trade

ENGINE, &c. Type of Engines Vertical Diesel engines Solid injection 2 or 4 stroke cycle 2 Single or double acting double
 pressure in cylinders 49 kg/cm² Diameter of cylinders 450 mm Length of stroke 1200 mm No. of cylinders 2 x 5 No. of cranks 2 x 5
 indicated Pressure 6.6 kg/cm² Bearings, adjacent to the Crank, measured from inner edge to inner edge 704 mm Is there a bearing between each crank yes
 as per minute 135 as per minute 50:3900 rpm Means of ignition Air compression Kind of fuel used Crude oil
 shaft, dia. of journals 360 mm Crank pin dia. 360 mm Crank Webs 187 mm Thickness parallel to axis 207 mm
 1 Shaft, diameter 360 mm Intermediate Shafts, diameter 298 mm Thrust Shaft, diameter at collars 360 mm
 as fitted 360 mm as fitted 332 mm as fitted 332 mm Is the no shaft fitted with a continuous liner yes

liners, thickness in way of bushes 18 mm Thickness between bushes 13.5 mm Is the after end of the liner made watertight in the yes
 as fitted 22 mm as fitted 15 mm 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
 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

ers are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube yes
 If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 1750 mm
 dia. 4000 mm Pitch 4000 mm No. of blades 3 Material Brass whether Moveable no Total Developed Surface 4.23 sq. foot

of reversing Engines Direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication yes
 Thickness of cylinder liners 34 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with yes
 lagged yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine to funnel

Water Pumps, No. 1 off 250 l/hour Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
 pumps worked from the Main Engines, No. none Diameter - Stroke - Can one be overhauled while the other is at work yes
 connected to the Main Bilge Line { No. and Size ballast pump, 150 l/hour 1 rotary bilge pump 50 l/hour 1 plunger bilge pump 40 l/hour
 How driven all electrically driven

ling water led to the bilges no, overboard If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping no
 Pumps, No. and size 1 off 150 l/hour Power-Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3 off 2 x 120 l/hour
 independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge yes

No. and size: In Machinery Spaces 4 off 3" - 4 off 2" In tunnel 1 off 2 1/2" - 1 off 2 1/2" In Pump Room
2 off 3" - 2 off 3" - 3 off 3" - 3 off 3" - 1 off 3" - 1 off 3" - 1 off 3" - 1 off 3" (has box in top of each tank)
 adent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 4 off 5", 1 off 6", 2 off 3"

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

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 below
 ey 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
 pipes pass through the bunkers none How are they protected yes
 pipes pass through the deep tanks none Have they been tested as per Rule yes

all 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 yes
 department to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper platform

wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes
 a Air Compressors, No. none No. of stages 2 Diameters 130 mm Stroke 110 mm Driven by Electromotors
 Auxiliary Air Compressors, No. 2 off 4 cylinders No. of stages 2 Diameters 106 mm Stroke 80 mm Driven by Steam engine

all Auxiliary Air Compressors, No. 1 off No. of stages 2 Diameters 106 mm Stroke 80 mm Driven by MAIN ENGINES
 Blowers 2 off each engine Diameter CAPACITY - Stroke 254 x 5 mm
 Auxiliary Engines crank shafts, diameter 130 mm 3 off 3 cylinders 2 S.C.S.A. Diesel engines 220 mm diam
 as fitted 150 mm 370 mm stroke placed in port side of the engine room.

IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *yes*
Is the donkey boiler intended to be used for domestic purposes only? *yes*
PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Tanks *yes*
(If not, state date of approval)
Donkey Boilers *no* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *no*

Has the spare gear required by the Rules been supplied yes
 State the principal additional spare gear supplied Please see accompanying list

The foregoing is a correct description,
BURMEISTER & WANS MACKIN - OG SKIBSBY
 AKTIESELSKABET
NAKSKOV SKIBSVÆRFT
 Manufacturer.

Dates of Survey while building	{	During progress of work in shops--	17/1-23/1-29/1-30/1-6/2-9/2-10/2-14/2-19/2-20/2-22/2-24/2-28/2-3/3-13/3-14/3-16/3-19/3-21/3-24/3-4/4-6/4-11/4-14/4-20/4-24/4-25/4
		During erection on board vessel--	5/5-7/5-28/5-19/5-23/5-28/5-20/5-4/6-21/6-24/6-29/6-19/6-21/6-24/6-12/10-16/10-25/10-2/11-7/11-10/11-16/11-19/11
		Total No. of visits	61.
Dates of Examination of principal parts—Cylinders 23/19-26/5 & 25/26-29/6 Pistons 24/3-4-25/10-19/2-5-24/6 Rods 19/2-5-24/6 Connecting rods 17/1-30/1-1			
Crank shaft 17/20/1-4/2-10/2-10/2-15/2 Flywheel shaft - Thrust shaft 23/1-4/2-4/5-7/5 Intermediate shafts 12/5-19/5-5/7 Tube shaft -			
Screw shaft 13/1-14/2-15/2-17/2 Propeller 19/7-2/11 Stern tube 19/7-3/7-8/8 Engine seatings 5/7-10/7 Engines holding down bolts 15/9-10/9			
Completion of fitting sea connections 2/6-2/11 Completion of pumping arrangements 12/10 Engines tried under working conditions 3/7-16/7-3/7-8/8			
Crank shaft, Material S.ck. & Steel Identification Mark 2020-4-27 & 2030-4-27 LLOYD'S N° 2079-80 Flywheel shaft, Material S.ck. & Steel Identification Mark 2020-4-27 & 2030-4-27 LLOYD'S N° 2079-80			
Thrust shaft, Material S.ck. & Steel Identification Mark 2020-4-27 & 2030-4-27 LLOYD'S N° 2079-80 Intermediate shafts, Material S.ck. & Steel Identification Mark 2020-4-27 & 2030-4-27 LLOYD'S N° 2079-80			
Tube shaft, Material - Identification Mark - Screw shaft, Material S.ck. & Steel Identification Mark 2020-4-27 & 2030-4-27 LLOYD'S N° 2079-80			

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

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 ✓

The above machinery has been constructed

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 above machinery has been constructed in accordance with the Rules the approval

General Remarks (State quality of workmanship, spirit, etc.)
and fitted on board under Special Survey and in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letter E dated 27/11-28/12-16 1/2-1902.

The material used in construction has been tested by us as required
or as per certificate produced, and the workman ship is of good description
throughout.

The machinery has been tested in shape and on board under full power working conditions and the maneuvering of the engine was tested on the final trial trip and all found to be good and efficient.

Recommended the vessel's machinery to have notation in the Register

Boats of ⁴⁰/₁₀₀ LMC-11-34, OIL ENGINES, C.L.

On the final trial type a speed of 17.08 knots was arrived at a total IHP of 8950

The amount of Entry Fee	£ 134.40	When applied for,	23. 11. 19. 04
Special	£ 2843.12	"	"
Donkey Boiler Fee	£ 75.00	When received,	"
"	£ 188.16	"	"
Travelling Expenses (if any)	£ 506.85	"	"
Sub Total	£ 4000.00	"	"
Committee's Minute	TUE. 4 DEC 1934	"	"

(The Survey)
 TUE. 4 DEC 1934
 Committee's Minute
 Assigned + Lmb 11.34 DB 125 H

Rpt. 9a.

Port of Copenhagen

Continuation of Report No. 948/ dated 12th Novr. 1934 on the

^{7/5} JUTLANDIA of Copenhagen

List of Auxiliary Machinery

One rotary Ballast pump, system IRON, 150 lb/hour
One Bilge & Sanitary pump, 2 trunk plungers 165^{mm}/in diam x 230^{mm}/in stroke,
2 x 20 lb/hour
Two centrifugal saltwater circulating pumps for main engine, 275^{lb}/hour
One ———— fresh ———— " ———— " ———— " ———— , 250^{lb}/hour
One ———— salt ———— " ———— " ———— " auxiliary ———— , 65^{lb}/hour
One rotary Bilge & Sanitary pump, 50 lb/hour
Three lubricating oil pumps, worm gear type, 120 lb/hour
One cog wheel oil fuel transfer pump, 50 lb/hour
One rotary cargo oil pump, 60 lb/hour
One rotary emergency bilge pump, 100 lb/hour
One forepeak pump, duplex type, 20 lb/hour
Two 2-stage 4 cylinder manoeuvring air compressors, 4 m³/minute
One emergency air compressor (diam 106/34^{mm} by 80^{mm} stroke) steam driven
One four cylinder 4 S.C.S.F. Diesel oil engine, 40 HP, 130^{mm} diam x
180^{mm} stroke x 850 R.P.M., direct coupled to 26 K.W. D.C. compound wound
generator, connected to the switch board for emergency light, emergency
bilge pump & the wireless telegraph.
Three 2 S.C.S.F. Diesel oil engines, 220^{mm} diam x 370^{mm} stroke x 400 R.P.M.,
200 BHP, solid injection each working a 135 K.W. compound wound
generator giving current at 220 volts pressure for the following
purposes: —

All driven by electric motors

1	off 15 HP skunk	wound	electronotor	for the ballast pumps
1	" 10 HP	—	—	" " plunger bilge pumps
1	" 12 HP compound	—	—	" " rotary bilge pumps
2	" 30 HP skunk	—	—	" " saltwater circulating pumps
1	" 30 HP	—	—	" " fresh water —
3	" 30 HP	—	—	" " lubricating oil pumps
1	" 20 HP compound	—	—	" " cargo oil pumps
1	" 15 HP skunk	—	—	" " oil fuel transfer pumps
1	" 8 HP	—	—	" " cooling water pump for air eng.
1	" 25 HP compound	—	—	" " refrigerating machine
1	" 3 HP skunk	—	—	" " brine pumps
1	" 13.5 HP	—	—	" " emergency bilge pumps
1	" 4 HP	—	—	" " forepeak pumps
2	" 8 HP serie	—	—	" " turning gears
2	" 80 HP skunk	—	—	" " manoeuv. air compressors
2	" 3 HP	—	—	" " fuel oil circulating pumps
3	" 3 HP	—	—	" " oil separators
1	" 7.5 HP	—	—	" " cold saltwater auxiliary pumps
1	" 25 HP	—	—	" " cold fresh water

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