

REPORT ON OIL ENGINE MACHINERY.

No. 10438.

Received at London Office JAN 18 1938

Date of writing Report 9/1 1938 When handed in at Local Office 10 Port of Copenhagen
 No. in Survey held at Copenhagen Date, First Survey 13/3 1937 Last Survey 1/1 1938
 Reg. Book. 38482 Number of Visits 76

38482 on the Single Twin Triple Quadruple Screw vessel "HÖEGH SILVERSTAR" Tons ^{Gross} 5415 _{Net} 3260

Built at Copenhagen By whom built Birmestis & Wain Yard No. 631 When built 1937
 Engines made at Copenhagen By whom made Birmestis & Wain Engine No. 2674 When made 1937
 Donkey Boilers made at Copenhagen By whom made Birmestis & Wain Boilers No. 1943 When made 1937
 Brake Horse Power 4550 Owners SKIBS 9/16 NORUEGA SKIBS 9/16 ABALO ARUBA - " - ASTREA Port belonging to Oslo
 Nom. Horse Power as per Rule 860 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes
 Trade for which vessel is intended Ocean going, general cargo, fruit, etc in deep tanks.

OIL ENGINES, &c.—Type of Engines Diesel, solid injection, crossed type 2 or 4 stroke cycle 2 Single or double acting double
 Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 450 mm Length of stroke 1200 mm No. of cylinders 8 No. of cranks 8
 Mean Indicated Pressure 6.6 kg/cm² Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 840 mm Is there a bearing between each crank yes
 Revolutions per minute 120 Flywheel dia. 1902 mm Weight 1180 kg Means of ignition compression Kind of fuel used crude oil
 Crank Shaft, ^{Solid forged} dia. of journals as per Rule 372 mm Crank pin dia. 390 mm Crank Webs ^{Mid. length breadth} 860 mm ^{shrunk} Thickness parallel to axis 210 mm
^{Semi-built} ^{All built} as fitted 390 mm ^(115 mm CENT. HOLE) Mid. length thickness 200 mm ^{Thickness around eyehole} 210 mm
 Flywheel Shaft, diameter as per Rule 344 mm Intermediate Shafts, diameter as per Rule 355 mm Thrust Shaft, diameter at collars as per Rule 361 mm
as fitted as fitted ^(115 mm CENT. HOLE) as fitted 365 mm
 Tube Shaft, diameter as per Rule 379 mm Screw Shaft, diameter as per Rule 392 mm Is the ^{tube} ^{screw} shaft fitted with a continuous liner yes
as fitted as fitted 390 mm as per Rule 14.7 mm Is the after end of the liner made watertight in the

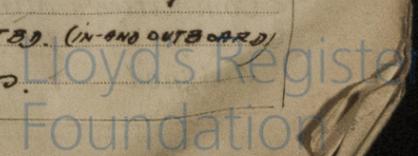
propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner one length
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive 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 If so, state type UNISLIP Length of Bearing in Stern Bush next to and supporting propeller 1750 mm
 Propeller, dia. 16'-5" Pitch 12.85' (UNISLIP) No. of blades 4 Material BRONZE whether Moveable No Total Developed Surface 87.3 sq. feet
 Method of reversing Engines DIRECT REVERS. Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of lubrication force
 Thickness of cylinder liners 3/16" 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 TO FUNNEL

Cooling Water Pumps, No. 1 2 OFF SALT WATER, 200 TS/H. FRESH WATER, 200 TS/H. 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 178 mm Can one be overhauled while the other is at work yes
 Pumps connected to the Main Bilge Line ^{No. and Size} 2 OFF 26 TS/H. 1 OFF 220 TS/H. 2 OFF 26 TS/H. 1 OFF 10 TS/H.
^{How driven} MAIN ENGINE ELECTRICALLY ELECTRICALLY ELECTRICALLY.
 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 yes

Ballast Pumps, No. and size 1 OFF 220 TS/H. CENTR. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 OFF 200 TS/H.
 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:—In Machinery Spaces 3 OFF 3 1/2" 1 OFF 3" HOLE SUCTION. In Pump Room yes
 In Holds, &c. Nº1 D.T.: 2 OFF 3" REFR. HOLD: 2 OFF 2 1/2" Nº2 D.T.: 2 OFF 3 1/2" Nº3 D.T.: 2 OFF 2 1/2" Nº4 D.T.: 2 OFF 2 1/2"
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 OFF 7" 4 OFF 3"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions 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 yes
 Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves
 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
 What pipes pass through the bunkers yes 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 yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck
 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. 1 No. of stages 1 Diameters 110-45 mm Stroke 70 mm Driven by hand
 Auxiliary Air Compressors, No. 3 No. of stages 2 Diameters 280-250 mm Stroke 190 mm Driven by air's oil engine
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 110-45 mm Stroke 70 mm Driven by hand
 What provision is made for first Charging the Air Receivers hand driven compressor connected to emergency air receiver
 Scavenging Air Pumps, No. 2 ROTARY Diameter 2 x 206 mm Stroke yes Driven by main engine
 Auxiliary Engines crank shafts, diameter as per Rule 124 mm No. 3 Position IN ENGINE ROOM, 1 FT. 2 IN. (IN-AND OUTBOARD)
as fitted 150 mm Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes



AIR RECEIVERS:—Have they been made under survey *yes* State No. of Report or Certificate *✓*
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule *yes*
 Can the internal surfaces of the receivers be examined and cleaned *yes* Is a drain fitted at the lowest part of each receiver *yes*
EMERGENCY
Injection Air Receivers, No. 1 ✓ Cubic capacity of each *200 litres* Internal diameter *380* thickness *11 mm*
 Seamless, lap welded or riveted longitudinal joint *lap welded* Material *J.M. steel* Range of tensile strength *42 kg/mm²* Working pressure by Rules *35.3 kg/cm²*
 Actual *25*
Starting Air Receivers, No. 2 ✓ Total cubic capacity *20 m³* Internal diameter *6'-0"* thickness *SHELL 1", ENOS 1 3/16"*
 Seamless, lap welded or riveted longitudinal joint *riveted* Material *J.M. steel* Range of tensile strength *ENOS 27.4-27.7* Working pressure by Rules *SHELL 26.8, ENOS 28.4*
 Actual *25 kg/cm²*

IS A DONKEY BOILER FITTED? *yes, 2 off* 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 Fuel Tanks *22/5 37*
 (If not, state date of approval) *30/4 37* Pumping Arrangements in Machinery Space *26/6 37*
 Donkey Boilers *yes* General Pumping Arrangements *30/4 37*
 Oil Fuel Burning Arrangements *✓*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*
 State the principal additional spare gear supplied
1 propeller shaft compass, 1 propeller, 1 piston and piston rod complete with piston ring, screw on 48 piston rings, 2 pair of connecting rod top end brasses, 1 pair of main rod bottom end brasses, 1 pair of eccentric rod bottom end brasses, 1 pair of main bearing brasses, 2 pads for thrust block, 8 first valve valves.

The foregoing is a description,
BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI
A. Hornmoller Manufacturer.

Dates of Survey while building
 During progress of work in shops-- *1937. MAR. 13-20-24, APR. 5-7-9-12-14-17-22-26-28, MAY 15-21-25, JUN. 1-3-8-15-18-23-28-30, JUL. 22-26-28, AUG. 7-11-14-16-18-19-20-21-23-25-27, SEP. 7-8-9-13-14-15-20-25-27-28, OCT. 1-6-7-11-12-16-20-21-22-28, Nov. 4-6-8*
 During erection on board vessel-- *26/8, 7/9, 13/11, DEC. 4-13-14-16-18-20-22-24-28-28-27-1937, 1/1 1938*
 Total No. of visits *76*
 Dates of Examination of principal parts—Cylinders *20/8-8/9* Covers *4/8 24/8 5/10* Pistons *28/7 6/10* Rods *24/4 26/4 11/8* Connecting rods *2/4 17/4 26/7*
 Crank shaft *9/22 28/2 25/28* Flywheel shaft *✓* Thrust shaft *7/4 17/4 28/7* Intermediate shafts *22/16 29/8 23/22* Tube shaft *✓*
 Screw shaft *14/18 7/9 20/4* Propeller *4/11 16/12* Stern tube *8/9 13/11* Engine seatings *26/8 7/9 13/11* Engines holding down bolts *4/12 13/12 16/12*
 Completion of fitting sea connections *13/11* Completion of pumping arrangements *24/12* Engines tried under working conditions *28/9 1/10 20/12 27/12*
 Crank shaft, Material *J.M. steel* Identification Mark *C.V. 28-7-35* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *J.M. steel* Identification Mark *C.V. 28-7-37* Intermediate shafts, Material *J.M. steel* Identification Marks *C.V. 22-10-37*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *J.M. steel* Identification Mark *C.V. 4-11-37 (SPARE)*
 Identification Marks on Air Receivers **STARTING:** LLOYD'S TEST *41 ATT.* **EMERGENCY:** No 808
(2 OFF) *W.P. 28 ATT.* *56 ATT.*
4 27-8-37 *W.P. 38 ATT.*
C.V. 8-11-37

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 *N.O.T.* *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 *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery herein described has been constructed and fitted under special survey and in accordance with the Society's Rules, the approved plans and the requirements contained in the Secretary's letters B dated 31/12 36, 21/1 37, 8/4 30/4 18/5 22/5 7/6 28/6 30/7 1937. The material has been examined and tested as required by the Rules, either by the undersigned or as per certificates produced, and found satisfactory, and the workmanship is of good description throughout. On completion the whole of the main and auxiliary machinery was tested under working conditions and found satisfactory, and on the trial trip the running of the main engines was tested and found good. Max. speed 15.62 kts. ~ 5200 IHP ~ 121 R/M. Recommend the vessel's machinery to have notation of +LMLC 1-38 OIL ENGINES, C.L. in the Register Book. 2 DB 90 lb.*

The amount of Entry Fee .. *NR. 134.40:* When applied for, *17. 11. 19. 38.*
 Special .. *4- 2643.20:*
FITTING
 Donkey Boilers Fee .. *150.00:* When received, *9/3 19. 38*
 2 STARTING AIR RECEIVERS .. *188.16*
 Travelling Expenses (if any) .. *16.00:*
 LATE FEE .. *75.00*

Committee's Minute
 Assigned *+ Lmlc 1-38 2DB-90lb*
oil eng. CL

Chubb
 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.)

If not, state whether, and when, one will be sent?
 Is a Report also sent on the Hull of the Ship?