

## REPORT ON OIL ENGINE MACHINERY.

No. 10438.

Received at London Office JAN 18 1938

Date of writing Report 9/1 38 When handed in at Local Office 10 Port of Copenhagen  
No. in Survey held at 38482 on the *Single* *Twin* *Triple* *Quadruple* *Screw vessel* *HÖEGH SILVERSTAR* Date, First Survey 13/3 1937 Last Survey 1/1 1938  
Reg. Book. Number of Visits 76  
Tons { Gross 5415  
Net 3260  
Built at Copenhagen By whom built *Bismarck & Wain* Yard No. 631 When built 1937  
Engines made at Copenhagen By whom made *Bismarck & Wain* Engine No. 2674 When made 1937  
Donkey Boilers made at Copenhagen By whom made *Bismarck & Wain* Boilers No. 1943 When made 1937  
Brake Horse Power 4550 Owners - *SKIBS 9/15 NORUEGA SKIBS 9/15 ABALO* 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, crosshead type 2 or 4 stroke cycle 2* Single or double acting *double*  
Maximum pressure in cylinders *49 kg/cm<sup>2</sup>* 17 3/4 Diameter of cylinders *450 mm* Length of stroke *1200 mm* No. of cylinders *8* No. of cranks *8*  
Mean Indicated Pressure *6.6 kg/cm<sup>2</sup>* 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* as per Rule *372 mm* Crank pin dia. *390 mm* Crank Webs Mid. length breadth *860 mm* Thickness parallel to axis *210 mm*  
{ *Semi-built* dia. of journals as fitted *390 mm* (115 mm CENT. HOLE) Mid. length thickness *200 mm* Thickness around eyehole *210 mm*  
{ *All built* as per Rule *344 mm* Thrust Shaft, diameter at collars as per Rule *361 mm*  
Flywheel Shaft, diameter as fitted *355 mm* (115 mm CENT. HOLE) as fitted *365 mm*  
Tube Shaft, diameter as per Rule *379 mm* Is the *tube* shaft fitted with a continuous liner { *yes*  
as fitted *392 mm* as fitted *390 mm*  
Bronze Liners, thickness in way of bushes as per Rule *19.6 mm* Thickness between bushes as per Rule *14.7 mm* Is the after end of the liner made watertight in the  
as fitted *21 mm* as fitted *15 mm*  
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 *TIP: 12.85' (UNISLIP)* Length of Bearing in Stern Bush next to and supporting propeller *1750 mm*  
Propeller, dia. *16'-5"* Pitch *0.7 R: 13.16'* No. of blades *4* Material *BRONZE* whether Moveable *No* Total Developed Surface *87.3* sq. feet  
Bow: *9.17'*  
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 *3/4"* 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 *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. *Nº 1 D.T.: 2 OFF 3"* *HOLD N: 2: 2 OFF 3 1/2"* *HOLD N: 3: 2 OFF 3 1/2"* *Nº 3 D.T.: 2 OFF 2 1/2"* *Nº 4 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 *No* 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. *3* No. of stages *2* Diameters *280-250 mm* Stroke *190 mm* Driven by *air's oil engine*  
Auxiliary Air Compressors, No. *1* No. of stages *2* Diameters *110-45 mm* Stroke *70 mm* Driven by *hand*  
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 *206 mm* Stroke *124 mm* Driven by *main engine*  
Auxiliary Engines crank shafts, diameter as per Rule *124 mm* No. *3* Position *IN ENGINE ROOM, 1 FT. 2 INCHES (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 *yes*  
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 *S.M. steel* Range of tensile strength *42 kg/cm<sup>2</sup>* Working pressure *by Rules 35.3 kg/cm<sup>2</sup>*  
Actual *25*  
Starting Air Receivers, No. *2* Total cubic capacity *20 m<sup>3</sup>* Internal diameter *6'-0"* thickness *SHELL 1", ENDS 1 3/16"*  
Seamless, lap welded or riveted longitudinal joint *riveted* Material *S.M. steel* Range of tensile strength *ENDS 27.4-27.7* Working pressure *by Rules SHELL 26.8, ENDS 28.4*  
Actual *25 kg/cm<sup>2</sup>*

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)  
Donkey Boilers *yes* General Pumping Arrangements *30/4 37* Pumping Arrangements in Machinery Space *26/6 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 rings, sleeve and 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. 7-8-7-13-14-15-20-25-27-28, 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 29/8 6/10* Pistons *28/7 6/10* Rods *2/4 26/4 1/8* Connecting rods *2/4 17/4 26/7*  
Crank shaft *9/22 28/2 29/28* Flywheel shaft *✓* Thrust shaft *7/4 17/4 28/7* Intermediate shafts *22/16 29/8 23/22* Tube shaft *✓*  
Screw shaft *4/8 8/9 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 *S.M. steel* Identification Mark *C.V. 28-7-35* Flywheel shaft, Material *✓* Identification Mark *✓*  
Thrust shaft, Material *S.M. steel* Identification Mark *C.V. 28-7-37* Intermediate shafts, Material *S.M. steel* Identification Marks *C.V. 22-10-37*  
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. steel* Identification Mark *C.V. 4-11-37 (SPARE)*  
Identification Marks on Air Receivers STARTING : LLOYD'S TEST 41 ATT. EMERGENCY : N° 808  
(2 OFF) W.P. 28 ATT. LLOYD'S TEST 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 of 31/12 36, 21/1 37, 8/4 30/4 18/5 22/5 7/6 28/6 30/7 1937. The machine 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 engine was tested and found good. Max. speed 15.62 kn. ~ 5200 HP ~ 121 R/M. Recommend the vessel's machinery to have notation of +LMC 1-38 OIL ENGINES, C.L. in the Register Book. 2 DB 90 lb.*

The amount of Entry Fee .. *N.R. 134.40* When applied for, *17/1 1938*  
Special .. *2643.20*  
FITTING  
Donkey Boilers Fee .. *150.00* When received, *9/3 1938*  
2 STARTING AIR RECEIVERS .. *188.16*  
Travelling Expenses (if any) .. *10.00*  
LATE FEE .. *75.00*

Committee's Minute  
Assigned *+ Lmb 1.38 2 DB - 90 lb*  
*Oil Eng. CL*

*Chubb*  
Engineer Surveyor to Lloyd's Register of Shipping.

