

Rpt. 4b.

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22 JUL 1949

# REPORT ON OIL ENGINE MACHINERY.

No 35148

20 JUL 1949

IN D.O.

Received at London Office

Date of writing Report

When handed in at Local Office

18th July 1949 Port of Sunderland

No. in Survey held at Sunderland  
Reg. Book.

Date, First Survey 21st May 1948 Last Survey 12th July 1949  
Number of Visits 67

Single  
on the Twin Screw vessel  
Triple  
Quadruple

"BJORN STANGE"

Tons: Gross 10099  
Net 5895

Built at Sunderland

By whom built Sir J. Lamb & Son Ltd

Yard No. 702 When built 1949

Engines made at Sunderland

By whom made W. Leafford & Son Ltd

Engine No. 267 When made 1949

Donkey Boilers made at Steele

By whom made Steele & Son Ltd

Boiler No. 7091/2 When made

Brake Horse Power 3300

Owners Skibs a/s Armaten

Port belonging to OSL

Nom. Horse Power as per Rule 412

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

Trade for which vessel is intended Tanker.

IL ENGINES, &c.—Type of Engines Opposed piston action injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 640 lbs/sq in Diameter of cylinders 23 7/8 in Length of stroke upper 980 mm 91 7/8 in No. of cylinders 4 No. of cranks 4 triple throws.

Mean Indicated Pressure 88 lbs/sq in Is there a bearing between each crank Between each triple throw.

Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 886 mm

Revolutions per minute 108 Flywheel dia. F. 1690 mm Weight F. 1.39 tons Means of ignition Compression Kind of fuel used -

Crank Shaft, { Solid forged dia. of journals app. 431 mm as fitted 450 mm Crank pin dia. 450 mm Crank Webs Mid. length breadth 650 mm Thickness parallel to axis 285 mm  
Semi built dia. of journals app. 431 mm as fitted 450 mm Crank pin dia. 450 mm Crank Webs Mid. length thickness 255 mm Thickness around eye hole 201 mm  
All built dia. of journals app. 431 mm as fitted 450 mm Crank pin dia. 450 mm Crank Webs Mid. length thickness 255 mm Thickness around eye hole 201 mm

Flywheel Shaft, diameter app. 431 mm as fitted 450 mm Intermediate Shafts, diameter app. 322 mm as fitted 310 mm Thrust Shaft, diameter at collars app. 431 mm as fitted 450 mm

Tube Shaft, diameter as per Rule as fitted 450 mm Is the tube screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule as fitted 22 mm Thickness between bushes as per Rule as fitted 14 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 -

If two 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

of Yes. If so, state type - Length of Bearing in Stern Bush next to and supporting propeller 5'-8"

Propeller, dia. 16'-6" Pitch 12'-5" near No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 102 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes. Means of lubrication

oil Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled 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 -

Cooling Water Pumps, No. 1 Engine driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel (F.W. Cooling)

Bilge Pumps worked from the Main Engines, No. 1 Steam driven Diameter - Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size 2 @ 4" x 8" x 8" Duplex.  
How driven Steam

If 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 -

Ballast Pumps, No. and size 1 @ 16" x 12" x 10" Power Driven Lubricating Oil Pumps, including Spare Pump, 1 Engine driven 110 mm x 510 mm

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 @ 3 1/2" in E.R. In Pump Room 2 @ 4" in E.R.

Holds, &c. (Tanker)

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast Pump) & 1 @ 6"

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

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 Both

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 Below.

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.

At pipes pass through the bunkers None How are they protected -

At pipes pass through the deep tanks - Have they been tested as per Rule -

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 (Tanker) Is the Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

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

Main Air Compressors, No. Two. No. of stages 3. Diameters 11 1/2"-2 1/4", 11 1/2"-9 1/4", 2 3/4" Stroke 4" Driven by Steam engine

Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

Is provision made for first Charging Yes Air Receivers (Steam driven Compressor)

Scavenging Air Pumps, No. Two Diameter 1510 mm Stroke 510 mm Driven by Steam engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted - No. - Position -

Have the Auxiliary Engines been constructed under special survey - Is a report sent herewith -

2  
4  
8  
3  
30.31  
89.10  
26.17



AIR RECEIVERS: — Have they been made under survey

Is each receiver, which can be isolated, fitted with a safety valve as per Rules

Can the internal surfaces of the receivers be examined and cleaned

Injection Air Receivers, No.

Cubic capacity of each

Internal diameter

Thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

Thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

Cylinders, liners & jacket. Camshaft, 1 main piston head & 24 rings, 2 Cent. Cam. rod top & bottom. End bell crank shafts, 2 Side & 4 bell crank shafts, 2 top Side rod bell crank shafts, 2 main bearing shafts, 1 Set Camshaft bell crank shafts, 4 fuel valves, Camshaft, 8 Spray plugs, 1 N.R. Starting air valve, 1 relief valve, 1 fuel pump body, with fuel & del. valves, full crank lower, X.H. & Sh. 1, 1 Set bell crank shaft for thrust block, 1 del. for shaft bearing, 1 Sph. bearing Cent & Side Cam. rod bell crank shafts, 2 Cent & top end bearings, 1 C.I. Propeller, 1 Screw shaft, 6 rubber hose for piston cooling, 6 links of roller chain for Camshaft drive &c. &c.

The foregoing is a correct description.

W. G. Furdie

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1948 May 21, July 7, 8, 12, 13, 14, 19, Aug 10, 13, Sep 17, Oct 1, 12, 13, 15, 21, 25, 28, 29, Nov 2, Dec 13, 16, 20, 23, 1949 Jan 17, 18, 20, 26, Feb 1, 2, 3, 4, 7, 8, 9, 14, 15, 16, 17, 18, 21, 23, 24, 25, 28, Mar 1, 2, 3, 4, 8, 9, 10, 11, 14, 18, 20, 24, 31, Apr 1, May 4, 10, 11, 12, Jun 4, 20, 21, July 12. During erection on board vessel - July 12. Total No. of visits 64.

Dates of Examination of principal parts: Cylinders 20/12/48, 23/12/48, Covers - 15/2/49, 15/2/49, Pistons 15/2/49, 18/2/49, Rods 17/2/49, 18/2/49, Connecting rods 2/3/49, Crank shaft 25/11/48, Flywheel shaft as crank, Thrust shaft as crank, Intermediate shafts 3/3/49, Tube shaft - 31/5/49, Screw shaft 31/3/49, Propeller 18/3/49, Stern tube 11/3/49, 14/3/49, Engine sealings (Sank top), Engines holding down bolts 12/4/49, Completion of fitting sea connections 4/3/49, Completion of pumping arrangements 6/7/49, Engines tried under working conditions 12/4/49, Crank shaft, Material Inscr. Steel, Identification Mark 25/11/48, Flywheel shaft, Material as crank, Identification Mark as crank, Thrust shaft, Material as crank, Identification Mark as crank, Intermediate shafts, Material Inscr. Steel, Identification Mark 4504 103948, Tube shaft, Material - , Identification Mark - , Screw shaft, Material Inscr. Steel, Identification Mark 4512-103947, Identification Marks on Air Receivers K. 2146 / 4, L.R. 22438, 2/9/48 A.R.R.

Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

Description of fire extinguishing apparatus fitted 1 1/2 H.L. Ruptured pipe for steam heat around ER & B.R.M.

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

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 of this vessel has been built under Special Survey in accordance with the approved plans & the rules of the Society. The materials & workmanship are good. It has been securely fixed on board vessel & tried under full working conditions with satisfactory results. The two donkey boilers have also been securely fixed on board the vessel, fitted to burn oil fuel (F.P. above 150° F.) & safety valves adjusted under steam to working pressure. Section 20 of the rules has been complied with.

The machinery is eligible in my opinion to have record of 100 H.P. 49 (oil Eng.) T.S. (C.I.) 2 D.B. 150 H.P.

Note: The auxiliary machinery & shafting of this vessel is that originally intended for boat 166.

The amount of Entry Fee £ 214 8, Special ... £ 16, Donkey Boiler Fee £ 16, Travelling Expenses (if any) £ 19.

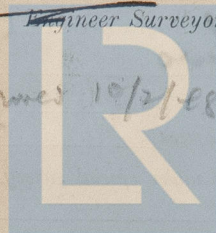
Committee's Minute

Assigned + LMC 7.49 Oil Eng. 2 D.B. 150 H.P.

W. G. Furdie

Engineer Surveyor to Lloyd's Register of Shipping.

T.V.C. approved 10/2/49 H 1087



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