

REPORT ON OIL ENGINE MACHINERY.

No. 25109

31 MAR 1954

Received at London Office

Date of writing Report 5/12/53 to 18/3/54

When handed in at Local Office

18/3/54

Port of GREENOCK

Survey held at GREENOCK

Date, First Survey

26/9/52

Last Survey

2/3/1954

Number of Visits 105

163S on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel

"DAVANGER"

Gross 11826.54
Tons
Net 6488.07

Built at PORT GLASGOW

By whom built LITHGOWS LTD.,

CAST Yard No. 1079

When built 3/1954

Engines made at GREENOCK

By whom made JOHN G. KINCAID & CO., LTD.,

Engine No. K243

When made 3/1954

Monkey Boilers made at GREENOCK

By whom made JOHN G. KINCAID & CO., LTD.,

Boiler No. K243

When made 3/1954

Indicated Horse Power

Maximum 7100 ✓
Service ✓

Owners WESTFAL - LARSEN & CO., A/S.

Port belonging to BERGEN

N. as per Rule 1420 ✓

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted YES

Trade for which vessel is intended CARRYING PETROLEUM IN BULK.

L. ENGINES, &c. — Type of Engines KINCAID - BURMEISTER & WAIN

2 or 4 stroke cycle 2 ✓

Single or double acting SINGLE ✓

Maximum pressure in cylinders 700 lbs/sq. in. ✓

Diameter of cylinders 750 mm ✓

Length of stroke 1500 mm ✓

No. of cylinders 6 ✓

No. of cranks 6

Mean Indicated Pressure 6.6 kg/cm² ✓

Span of bearings (i.e., distance between inner edges of bearings in

way of a crank) 1492 mm ✓

Is there a bearing between each crank YES

Revolutions per minute

Maximum 114 ✓

Service ✓

Flywheel dia. 2320 mm ✓

Weight 7550 Kgs. ✓

Moment of inertia of flywheel (kg. m²) 664.8

Means of ignition COMP. ✓

Kind of fuel used HEAVY OIL

Crankshaft, dia. of journals as per Rule. As APPROVED

as fitted 575 mm ✓

Crank pin dia. 575 mm ✓

Mid. length breadth 1200 mm ✓

Thickness parallel to axis 296 mm ✓

Crank webs

Mid. length thickness 296 mm ✓

Thickness around eye hole 287.5 mm ✓

Flywheel Shaft, diameter as per Rule. APPROVED

as fitted 575 mm ✓

Intermediate Shafts, diameter as per Rule. APPROVED

as fitted 192 mm ✓

Thrust Shaft, diameter at collars as per Rule. APPROVED

as fitted 575 mm ✓

Stern Shaft, diameter as per Rule. APPROVED

as fitted 24" ✓

Is the shaft fitted with a continuous liner

YES ✓

Bronze Liners, thickness in way of bushes as per Rule. APPROVED

as fitted 1 1/8" ✓

Thickness between bushes as per Rule. APPROVED

as fitted 2 1/2" ✓

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. YES ✓

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 fitted at the after

end of stern tube No ✓

If so, state type. YES ✓

Length of bearing in Stern Bush next to and supporting propeller 5'-11"

Propeller, dia. 18'-2" ✓

Pitch 18'-6" ✓

No. of blades 4

Material BRONZE

whether moveable FIXED

Total developed surface 132

sq. feet

Moment of inertia of propeller including entrained water (kg. m²) 2635

Kind of damper, if fitted. YES ✓

Method of reversing Engines DIRECT ✓

Is a governor or other arrangement fitted to prevent racing of the engine YES ✓

Means of

lubrication FORCED

Thickness of cylinder liners 58 mm ✓

Are the cylinders fitted with safety valves YES ✓

Are the exhaust pipes and silencers water-cooled

tagged with non-conducting material YES ✓

If the exhaust is led overboard near the water line, what means are arranged to prevent water from being syphoned

back to the engine. YES ✓

Cooling Water Pumps, No. and how driven

{ 2 S.W. ✓
2 F.W. ✓

Working F.W. 3 - M.E. DRIVEN

W. 1 - MAIN ENGINE

Spare F.W. 1 - STEAM

S.W. 1 - STEAM

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. and capacity

NONE ✓

Can one be overhauled while the other is at work. YES ✓

Pumps connected to the Main Bilge Line

(No. and capacity of each)

BILGE PUMP 100 TONS ✓

BALLAST PUMP 170 TONS ✓

How driven

the cooling water led to the bilges. YES ✓

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 capacity

1 x 170 TONS ✓

Power Driven Lubricating Oil Pumps, including spare pump, No. and size

{ 1 x 380 TONS ✓
1 x 375 " ✓

M.E.O. ✓

Are two independent means arranged for circulating water through the Oil Cooler YES ✓

Branch Bilge Suctions

4 ✓

No. and size: — In machinery spaces 3 x 4" ✓

In pump rooms

{ MAIN 2 x 4" ✓
AUX. 1 x 2 1/2" ✓

holds, &c. FOREHOLD 2 x 2 1/2" ✓

Direct Bilge Suctions to the engine room bilges, No. and size

1 x 6" ✓

1 x 10" ✓

Are all the bilge suction pipes in holds and tanks fitted with strum-boxes YES ✓

Are the bilge suction pipes 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 ✓

ON RESERVOIRS OR

Are all Sea Connections fitted direct on the skin of the Ship YES ✓

Are they fitted with valves or cocks YES ✓

Are they fixed

efficiently 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 ✓

That pipes pass through the bunkers NONE

How are they protected ✓

That pipes pass through the deep tanks NONE

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 ✓

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 NONE

Is it fitted with a watertight door ✓

worked from ✓

On 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. NONE

No. of stages ✓

diameters ✓

stroke ✓

driven by ✓

Auxiliary Air Compressors, No. 1 (NO 130801) ✓

No. of stages 2

diameters 9 1/2" x 4" ✓

stroke 7 1/2" ✓

driven by ELECTRIC MOTOR

Small Auxiliary Air Compressors, No. 1 (NO 130800) ✓

No. of stages 2

diameters 9 1/2" x 4" ✓

stroke 7 1/2" ✓

driven by STEAM ENGINE

What provision is made for first charging the air receivers ONE AUXILIARY AIR COMPRESSOR STEAM DRIVEN

Savenging Air Blowers, No. 2 ✓

How driven CHAIN DRIVEN FROM MAIN ENGINE CRANKSHAFT

Have they been made under survey DIESELS - YES, STEAM - NO

Auxiliary Engines

Makers name DIESELS - NATIONAL GAS & OIL ENGINE CO. LTD.

Position of each in engine room 10.650 x 1 STEAM - STAR. ENG. RM.

CERT. No. 3167/B

012446 - 012459 - 0193

AIR RECEIVERS:—Have they been made under survey. **YES** ✓ State No. of report or certificate. ✓
State full details of safety devices. **EACH RECEIVER HAS ONE FUSIBLE PLUG. RELIEF VALVE FITTED ON CHARGING LINE.**
Can the internal surfaces of the receivers be examined and cleaned. **YES** ✓ Is a drain fitted at the lowest part of each receiver. **YES**
Injection Air Receivers, No. ✓ Cubic capacity of each. ✓ Internal diameter. ✓ thickness. ✓
Seamless, welded or riveted longitudinal joint. ✓ Material. ✓ Range of tensile strength. ✓ Working pressure. ✓
Starting Air Receivers, No. **2** ✓ Total cubic capacity. **1000 FT³** Internal diameter. **ENDS 5-10 1/2" CENTRE 6-0 1/2"** thickness. **1 1/2"** ✓
Seamless, welded or riveted longitudinal joint. **RIVETED** ✓ Material. **STEEL** ✓ Range of tensile strength. **ENDS 26/30 TO 28/30** Working pressure. **350 lbs/sq. in.** ✓

ARE DONKEY BOILERS FITTED **YES** If so, is a report now forwarded. **YES**
Is the donkey boiler intended to be used for domestic purposes only. **No**
PLANS. Are approved plans forwarded herewith for shafting. **YES** (If not, state date of approval) Receivers. **YES** Separate fuel tanks. **YES**
Donkey boilers. **YES** General pumping arrangements. **YES - WITH SHIP PLANS.** Pumping arrangements in machinery space. **YES.**
Oil fuel burning arrangements. **YES**
Have Torsional Vibration characteristics been approved. **YES** ✓ Date and particulars of approval. **21/11/54. APPROVED FOR SERVICE SPEED OF 114 R.P.M. NOTICE BO**
TO BE FITTED AT THE CONTROL STATION STATING THAT THE ENGINE IS NOT TO BE OPERATED CONTINUOUSLY BETWEEN 69 X 82 R.P.M.
SPARE GEAR.
Has the spare gear required by the Rules been supplied. **YES** State if for "short voyages" only. **No.**
State the principal additional spare gear supplied.

For JOHN G. KINCAID & COY. LIMITED.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops - (1952) SEPT. 26. DEC. 31. (1953) FEB. 23. 24. MAR. 13. APRIL 24. 29. MAY 14. 8. 13. JULY 22. 24. AUG. 3. 5. 7. 10. 12. 14. 17. 19. 20. 21. 24. 26. 27. 31.
During erection on board vessel - - - SEPT. 1. 2. 3. 4. 9. 10. 11. 16. 18. 21. 22. 23. 30. OCT. 1. 2. 5. 7. 8. 12. 13. 14. 15. 16. 19. 23. 26. 27. 28. 29. 30. NOV. 2. 4. 6. 9. 11. 12. 13. 16. 18. 20. 23. 25. 26. 27. 30. DEC. 2. 3. 9. 10. 11. 23. 28. (1954) JAN. 7. 8. 11. 12. 13. 14. 15. 18. 21. 22. 25. 27. 29. FEB. 1. 3. 4. 5. 9. 10. 12. 17. 18. 19. 23. MAR. 2.

Total No. of visits. **105**

Dates of examination of principal parts—Cylinders. **26/8/53 TO 5/10/53** Covers. ✓ Pistons. **19/4/53 TO 29/4/53** Rods. **29/4/53 TO 3/8/53** Connecting rods. **3/8/53 TO 9/11/53**
Crank shaft. **9/11/53** Flywheel shaft. **8/5/53 TO 9/11/53** Thrust shaft. **9/11/53** Intermediate shafts. **16/11/53** Tube shaft. ✓
Screw shaft. **11/8/53 TO 2/9/53** Propeller. **41/8/53 TO 2/9/53** Stern tube. **3/8/53 TO 27/8/53** Engine seatings. **15/10/53** Engine holding down bolts.

Completion of fitting sea connections. **29/10/53** Completion of pumping arrangements. **17/2/54** Engines tried under working conditions. **2/3/54**

Crank shaft, material **IS 24530B** Identification mark. **LA 24530-FA334** Flywheel shaft, material. **SEE THRUST** Identification mark. ✓

Thrust shaft, material **IS 24530B** Identification mark. **LA 24530-FA334** Intermediate shafts, material **IS 24530C** Identification marks. **LA 24530-FA334**

Tube shaft, material. ✓ Identification mark. ✓ Screw shaft, material **IS 24530D** Identification mark. **LA 24530-FA334**

Identification marks on air receivers.

OUTBOARD	INBOARD
LOYDS TEST NOC. 4514 T.P. 575 lbs. W.P. 350 lbs. G.M. 26/9/53.	LOYDS TEST NOC. 4513 T.P. 575 lbs. W.P. 350 lbs. G.M. 25/9/53.

Welded receivers, state Makers' Name. ✓

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** ✓

Full description of fire extinguishing apparatus fitted in machinery spaces. **STEAM & CHEMICAL. COMPLETE LIST OF FIRE EXTINGUISHING APPLIANCES WITH THIS REPORT.**

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**

What is the special notation desired. ✓

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, Speed restrictions, &c.) **THE MACHINERY OF THIS VESSEL**

HAS BEEN CONSTRUCTED UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE APPROVED

PLANS AND THE RULES OF THIS SOCIETY. THE MATERIALS AND THE WORKMANSHIP ARE GOOD

THE MACHINERY HAS BEEN EFFICIENTLY INSTALLED ON BOARD THE VESSEL AND TRIED

UNDER WORKING CONDITIONS WITH SATISFACTORY RESULTS.

THE MACHINERY IS ELIGIBLE, IN MY OPINION, TO BE CLASSED IN THE REGISTER

BOOK WITH THE RECORD OF + LMC 3/54 AND NOTATIONS TS CL, 3 DB's 180 lbs

OIL ENGINE.

N.B. A NOTICE BOARD HAS BEEN FITTED AT THE CONTROL STATION STATING THAT THE ENGINE

HAS NOT TO BE OPERATED CONTINUOUSLY BETWEEN 69 X 82 R.P.M.

The amount of Entry Fee **ENGINE £252-0-0** ✓

Special **AIR RECEIVERS 20-0-0** ✓ When applied for. **18TH MAR. 1954.**

Donkey Boiler Fee... £ **90-0-0** ✓ When received. **19**

Travelling Expenses (if any) £

Committee's Minute

Assigned

+ LMC. 3.54. Oil Engine

with torsional endorsement.

3 DB. - 180 lb.

GLASGOW 30 MAR 1954

H. K. Taylor.

Engineer Surveyor to Lloyd's Register of Shipping.