

REPORT ON OIL ENGINE MACHINERY.

No. 78876

Received at London Office

Report 12th June 1952. When handed in at Local Office 17.6.1952 Port of Glasgow.
Survey held at Glasgow. Date, First Survey 10th March 1952 Last Survey 6th June 1952
Number of Visits

Rules Single
Screw vessel. **M.V. "NORTHGATE"** Tons Gross 429 Net 224
By whom built **Glebeaux (Successors) Ltd.** Yard No. When built 1941
By whom made **British Polar Engines Ltd.** Engine No. **E918** When made 1952
Boiler No. When made
Owners **Hull Gate Shipping Co Ltd.** Port belonging to **Hull.**
Power 350 Is Refrigerating Machinery fitted for cargo purposes
as per Rule 70 Is Electric Light fitted
Which vessel is intended **Open sea service**

Types of Engines **Heavy Oil Engine H.4.H.I. Type** 2 or 4 stroke cycle **2** Single or double acting **Single**
Pressure in cylinders **780 lbs/sq. in.** Diameter of cylinders **250 mm** Length of stroke **420 mm** No. of cylinders **4** No. of cranks **4**
Rated Pressure **98.6 lbs/sq. in.** Ahead Firing Order in Cylinders **4-2-3-1.** Span of bearings, adjacent to the crank, measured edge to inner edge **366 mm** Is there a bearing between each cranks **YES** Revolutions per minute **350**
Weight **2650** Moment of inertia of flywheel (lbs. in² or Kg. cm.²) **2160** Means of ignition **COMP.** Kind of fuel used **S.M.O.**
dia. of journals as per Rule **App.** Crank pin dia. **170 mm** Crank webs Mid. length breadth **226 mm** Thickness parallel to axis
as fitted **170 mm** Mid. length thickness **95 mm** shrunk Thickness around eyehole

Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as fitted **205 mm**
Screw Shaft, diameter as fitted Is the (tube/screw) shaft fitted with a continuous liner
Thickness in way of bushes as per Rule Thickness between bushes as fitted Is the after end of the liner made watertight in the stern
If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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-volatile
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 shaft
If so, state type Length of bearing in Stern Bush next to and supporting propeller
Pitch No. of blades Material whether moveable Total developed surface sq. feet
Inertia of propeller (lbs. in² or Kg. cm.²) Kind of damper, if fitted
Reversing Engines **DIRECT** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **YES** Means of
forcing **FORCED.** Thickness of cylinder liners **19.5 mm** Are the cylinders fitted with safety valves **YES** Are the exhaust pipes and silencers water cooled
with non-conducting material **LACGED** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
into the engine Cooling Water Pumps, No. **ONE** Is the sea suction provided with an efficient strainer which can be cleared within the vessel
Pumps worked from the Main Engines, No. **ONE** Diameter **85 mm** Stroke **60 mm** Can one be overhauled while the other is at work

Connected to the Main Bilge Line (No. and size) How driven
If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping
Pumps, No. and size Power Driven Lubricating Oil Pumps, including spare pump, No. and size
Independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary
pumps, No. and size:—In machinery spaces In pump room
At Power Pump Direct Suctions to the engine room bilges, No. and size
Bilge suction pipes in holds and tunnel well fitted with strum-boxes Are the bilge suction in the machinery spaces led from easily
accessible strum-boxes, placed above the level of the working floor, with straight tail pipes to the bilges
Connections fitted direct on the skin of the Ship Are they fitted with valves or cocks Are they fixed
high on the ship's side to be seen without lifting the platform plates Are the overboard discharges above or below the deep water line
Are they fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate
How are they protected
Do they pass through the bunkers Have they been tested as per Rule
Do they pass through the deep tanks

Are cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times
Arrangements 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 from one compartment to another Is the shaft tunnel watertight Is it fitted with a watertight door worked from
the engine room
What means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
Compressors, No. **ONE** No. of stages **TWO** diameters **55-140 mm** stroke **240 mm** driven by **MAIN ENG.**
Air Compressors, No. No. of stages diameters stroke driven by
Ship's Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
Is provision made for first charging the air receivers
Air Pumps, No. **ONE** diameter **590 mm** stroke **240 mm** driven by **MAIN ENG.**
Engines crank shafts, diameter as per Rule No. Position
as fitted

Auxiliary engines been constructed under special survey Is a report sent herewith

JM
24/7/52

004213-004221-0180



AIR RECEIVERS:—Have they been made under survey... YES State No. of report or certificate C90817 C90823

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

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. Two Total cubic capacity 30 CU. FT. Internal diameter 21" thickness 13/32"

Seamless, welded or riveted longitudinal joint RIVETED Material M.S. Range of tensile strength 26/22 T. Working pressure ...

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... YES Receivers 16-2-52 Separate fuel tanks ...

Donkey boilers ... General pumping arrangements ... Pumping arrangements in machinery space ...

Oil fuel burning arrangements ...

Have Torsional Vibration characteristics been approved... YES Date of approval 27th May 1952

SPARE GEAR.

Has the spare gear required by the Rules been supplied... YES

State the principal additional spare gear supplied ...

The foregoing is a correct description.

Shaw & Robson Manufacturer.

Dates of Survey while building During progress of work in shops - - March 10th April 3rd to 30th May 9th to 23rd June 2nd to 6th

During erection on board vessel - -

Total No. of visits ENG. II.

Dates of examination of principal parts—Cylinders 3-4-52 Covers 9-5-52 Pistons 10-3-52 Rods ✓ Connecting rods 1-4-52

Crank shaft 16-1-52 Flywheel shaft 5-2-52 Thrust shaft 17-4-52 Intermediate shafts 2-5-52 Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engine holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, material O.H. STEEL Identification mark 2083 N.W.T. Flywheel shaft, material O.H. STEEL Identification mark 7852 W.J.I.

Thrust shaft, material O.H. STEEL Identification mark 8042 W.J.I. Intermediate shafts, material Identification marks

Tube shaft, material Identification mark Screw shaft, material Identification mark

Identification marks on air receivers N°90817 4-2-52 G.H. N°90823 4-2-52 G.H.

Welded receivers, state Makers' Name

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

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. This engine has been built under Special Survey in accordance with the Secretary's letter and approved plans. The materials and workmanship are good and on completion the engine was tried on the test bed at the maker's works with satisfactory results. It has now been dispatched to the Cook S.B. & Repairing Co Ltd, to be fitted as replace engine to H.V. Northgate and is eligible in my opinion for the record of L.M.C. (with date) when efficiently installed on board.

The torsional vibration characteristics have been approved for a service speed of 350 RPM, provided a notice board be fitted at the control station stating that the engine is not to be operated continuously between 238 and 275 RPM and the engine tachometer be worked accordingly.

The amount of Entry Fee ... £ 25 : 0 :
Special ... £ : :
Donkey Boiler Fee... £ : :
Travelling Expenses (if any) £ : :
When applied for 24 JUN 1952
When received 19

A. G. Smith
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 JUN 1952
Assigned Deferred for completion



Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)