

# REPORT ON OIL ENGINE MACHINERY.

No. 71940

Received at London Office

pt. 4b.

Date of writing Report 15. 7 1947 When handed in at Local Office 25. 7 1947 Port of Glasgow  
 Date, First Survey 16. 5 47 Last Survey 16. 6 47  
 Number of Visits 8

Single on the T. or P. Screw vessel M/V "SNOWCEM"  
 Tons Gross 77 Net 5

built at Hesse By whom built Richard Dunston & Co Ltd Yard No S510 When built 1947  
 Engines made at Glasgow By whom made British Polar Engines Ltd Engine No. 658 When made 1947  
 Donkey Boilers made at By whom made Boiler No. When made  
 Brake Horse Power 465 Owners Port belonging to  
 Nom. Horse Power as per Rule 116 = MN Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 Trade for which vessel is intended

IL ENGINES, &c. — Type of Engines Heavy oil engine, 25 C.S.A., Type M46 I 2 or 4 stroke cycle Two Single or double acting Single  
 Maximum pressure in cylinders 853 lbs/sq. in Diameter of cylinders 250" Length of stroke 420" No. of cylinders Six No. of cranks Six  
 Mean Indicated Pressure 97 lbs/sq. in Span of bearings, adjacent to the crank, measured from inner edge to inner edge 366" Is there a bearing between each crank Yes  
 Revolutions per minute 300 Flywheel dia. 900" Weight 908 lbs Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged dia. of journals 165" Crank pin dia. 170" Crank webs Mid. length breadth 226" Thickness parallel to axis  
 as per Rule 165" as fitted 170" Mid. length thickness 95" Thickness around eyehole  
 Flywheel Shaft, diameter as per Rule See thrust Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as fitted 170"  
 as fitted shaft as fitted 124"

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner  
 as fitted as fitted

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the  
 as fitted as fitted propeller boss

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner  
 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 tube shaft If so, state type Length of bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether moveable Total developed surface sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of  
 lubrication Forced Thickness of cylinder liners 195" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled  
 or lagged with non-conducting material Lagged 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. One Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. One Diameter 110" Stroke 60" Can one be overhauled while the other is at work  
 Pumps connected to the Main Bilge Line No. and size How driven  
 Is the cooling water led to the bilges 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 Power Driven Lubricating Oil Pumps, including spare pump, No. and size Two - 2760 galls/hr, each  
 Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary  
 bilge pumps, No. and size:—In machinery spaces In pump room

In holds, &c. Independent Power Pump Direct Suctions to the engine room bilges, No. and size  
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes 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

Are all Sea Connections fitted direct on the skin of the Ship Are they fitted with valves or cocks Are they fixed  
 sufficiently 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 each 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

What pipes pass through the bunkers How are they protected  
 What 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  
 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 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. One No. of stages Two diameters 55/140" stroke 240" driven by Main engine

Auxiliary Air Compressors, No. No. of stages diameters stroke driven by  
 Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by

What provision is made for first charging the air receivers  
 Scavenging Air Pumps, No. One diameter 720" stroke 240" driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule No. Position  
 as fitted as fitted Have the auxiliary engines been constructed under special survey Is a report sent herewith

009311-009320-0192



AIR RECEIVERS:—Have they been made under survey..... No. To B.C. Survey State No. of report or certificate. B.C. 7061, 7067

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, lap welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

Starting Air Receivers, No. Three ✓ Total cubic capacity 15 cub. ft. Internal diameter 21" thickness 13/32"

Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 29.3 tons Working pressure 355 lbs

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..... 28/8/46 + 14/3/46 Receivers 14/3/47 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..... Yes ✓

State the principal additional spare gear supplied..... ✓

The foregoing is a correct description and the particulars of the installation as fitted are as approved for torsional vibration characteristics.

The foregoing is a correct description, *Scott*

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1947 May 16-27 Jun 29/10/12/16  
During erection on board vessel -  
Total No. of visits 8

Dates of examination of principal parts—Cylinders 27/5/47 Covers 29/5/47 Pistons 27/5/47 Rods..... Connecting rods 27/5/47

Crank shaft 27/5/47 Flywheel shaft..... Thrust shaft 27/5/47 Intermediate shafts..... Tube shaft.....

Screw shaft..... Propeller..... Stern tube..... Engine scatings..... Engine holding down bolts.....

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

Crank shaft, material Siemens Steel Identification mark B.H. Test N° 9. 14/5/47 Flywheel shaft, material..... Identification mark.....

Thrust shaft, material S.M.A.O.H. Steel Identification mark 517 E.B. 7.3.47 Intermediate shafts, material..... Identification marks.....

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

Identification marks on air receivers..... No 7061 B.C. Test 555 lbs (For 2 receivers) W.P. 355 lbs J.M. 10.11.46 No 7067 B.C. Test 555 lbs (For 1 receiver) W.P. 355 lbs J.M. 12.2.45

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..... ✓

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..... No ✓ 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 Rules and Approved Plans. The materials and workmanship are good and on completion the engine was tried on the test bench at the maker's works with satisfactory results, at full power.

It has now been despatched to Hessel for installation on board the M/V "SNOWCEM".

The compressed air receivers have been constructed under British Corporation Survey and their use on board

This vessel has been approved by L.R. London (Sec. Secretary's letters 7/6/47, 21/6/47). The scantlings have been checked and found in accordance with L.R. Approved plan and they have subsequently been submitted to a hydraulic test of 555 lbs with satisfactory results.

The torsional vibration characteristics have been examined and will be approved for a service speed of 300 r.p.m., provided notice board be fitted at control station stating that engines are not to be run continuously between 160 & 190 r.p.m. and further, provided torsionograph records are taken indicating that the vibration stress in the intermediate shaft arising from the 6th order 1 node critical speed does not exceed ± 9000 lbs/sq.in.

The amount of Entry Fee..... £

Special £34/16/0 Gls. £23/4/0

Donkey Boiler Fee..... £ Hull £11/12/0

Travelling Expenses (if any) £

Committee's Minute

Assigned Referred for Completion

When applied for 29 JUL 1947

When received 19

Engineer Surveyor to Lloyd's Register of Shipping.

19 JUL 1947

Lloyd's Register Foundation