

# REPORT ON OIL ENGINE MACHINERY.

LEITH REPORT NO. 22248

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No. in Survey held at Glasgow. Date, First Survey 24. 9. 48 Last Survey 18. 11. 1948

Reg. Book. Dup. 11046 on the Twin Triple Quadruple

Screw vessel. M.V. "ADAMS BECK" Tons Gross 1773 Net 1189

built at Burntisland. By whom built Adam Burntisland Shipbuilding Co. Ltd. Yard No. 328 When built 1948.

Engines made at Glasgow. By whom made Adam British Polar Engine Co. Ltd. Engine No. 718 When made 1948.

Monkey Boilers made at By whom made Boiler No. When made.

Brake Horse Power 1180 Owners The Gas. Light & Cold Co. Ltd. Port belonging to LONDON

I.N. Power as per Rule 295 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES.

Trade for which vessel is intended Ocean Sea Service.

L. ENGINES, &c. —Type of Engines Heavy oil M.S.B.M. type. 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 855 lbs./sq. in. Diameter of cylinders 13 3/4 in. Length of stroke 570 in. No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 100 lbs./sq. in. Ahead Firing Order in Cylinders 1. 8. 3. 5. 2. 7. 4. 6 Span of bearings, adjacent to the crank, measured

from inner edge to inner edge. 47 1/2 in. Is there a bearing between each crank No. Revolutions per minute 225

Flywheel dia. 116 1/2 in. Weight 1300 lbs. Moment of inertia of flywheel (16 lbs. in<sup>2</sup> or Kg.cm.<sup>2</sup>) 8214 in<sup>4</sup> Means of ignition Comp. Kind of fuel used Diesel

Crank Shaft, Solid forged dia. of journals as per Rule 232 in. Crank pin dia. 235 in. Crank webs Mid. length breadth 32 1/2 in. Thickness parallel to axis

as fitted 235 in. Mid. length thickness 130 in. shrunk Thickness around eyehole 300 in.

Flywheel Shaft, diameter as per Rule 300 in. Intermediate Shafts, diameter as fitted Thrust Shaft, diameter at collars as per Rule

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

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

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

Moment of inertia of propeller (16 lbs. in<sup>2</sup> or Kg.cm.<sup>2</sup>) Kind of damper, if fitted

Method of Reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of

Lubrication Lubrication Thickness of cylinder liners 25.5 in. Are the cylinders fitted with safety valves Are the exhaust pipes and silencers water cooled

Lagged with non-conducting material 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 15 1/2 in. Stroke 140 in. 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

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

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 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

Is it 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 80 in. 215 in. stroke 240 in. driven by M.E.

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 9 1/2 in. stroke 240 in. driven by M.E.

Auxiliary Engines crank shafts, diameter as per Rule Position

Have the auxiliary engines been constructed under special survey Is a report sent herewith



AIR RECEIVERS:—Have they been made under survey No. State No. of report or certificate (See Glasgow Reg. No. 73)  
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 by Rules Actual  
Starting Air Receivers, No. *Two* Total cubic capacity *70 cu ft* Internal diameter *60 7/8* thickness *1 1/2*  
Seamless, welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *28/32 1/2* Working pressure by Rules *350 lb/sq in* Actual *350 lb/sq in*  
IS A DONKEY BOILER FITTED *Yes* If so, is a report now forwarded *Yes*  
Is the donkey boiler intended to be used for domestic purposes only.  
PLANS. Are approved plans forwarded herewith for shafting. *Yes* Receivers. *Yes* Separate fuel tanks. *Yes*  
(If not, state date of approval)  
Donkey boilers. *Yes* General pumping arrangements. *Yes* Pumping arrangements in machinery space. *Yes*  
Oil fuel burning arrangements. *Yes*  
Have Torsional Vibration characteristics been approved. *Yes* Date of approval *12th Nov. 1948*  
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.  
*C. Scott B.P.E. Ltd.* Manufacturer.

Dates of Survey while building  
During progress of work in shops - *24th Sept. 19. 26. 29. Oct. 1. 8. 9. 19. Nov. 1948.*  
During erection on board vessel -  
Total No. of visits  
Dates of examination of principal parts—Cylinders *29. 10. 48.* Covers *9. 11. 48.* Pistons *29. 10. 48.* Rods *29. 10. 48.* Connecting rods *29. 10. 48.*  
Crank shaft *21. 8. 48.* Flywheel shaft Thrust shaft Intermediate shafts 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 *18. 11. 48.*  
Crank shaft, material *Steel* Identification mark *883 L.V. 21. 8. 48.* Flywheel shaft, material Identification mark  
Thrust shaft, material *Steel* Identification mark *701. 14. 24. 5. 48.* Intermediate shafts, material Identification marks  
Tube shaft, material Identification mark Screw shaft, material Identification mark  
Identification marks on air receivers *2-1/2*  
*No. 18377.*  
*Test 350 lb/sq in*  
Welded receivers, state Makers' Name *Yes* *A.H.R.* *11. 9. 48.*  
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*  
Description of fire extinguishing apparatus fitted *Yes*  
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*  
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with *Yes*  
Is this machinery duplicate of a previous case *Yes* 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 and in accordance with the Rules and approved Plans.*  
*The materials used and workmanship is good and on completion the engine was tried on the test bed at the makers works with satisfactory results.*  
*The engine has now been dispatched to Messrs Burntisland Shipbuilding Co. Ltd. to be installed on board their ship No 328. M.V. "Adams Beale"*  
*The torsional vibration characteristics have been approved for a service speed of 225 R.P.M. provided a notice board be fitted at the control station stating that the engine is not to be operated continuously between 125 and 148 R.P.M. (See London Letter 11. 48) Engine tachometer to be marked accordingly.*

The amount of Entry Fee ... £ *113. 10. 0*  
Special ... £ *75. 14. 0*  
Donkey Boiler Fee... £ *37. 16. 0*  
Travelling Expenses (if any) £  
When applied for *23 NOV 1948*  
When received *19*  
Committee's Minute  
Assigned *Deferred for Completion*  
*See F.E. mch. rpt.*  
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