

# REPORT ON OIL ENGINE MACHINERY.

No. 80096

Received at London Office

23 SEP 1953  
1 APR 1953

Date of writing Report 25th March 1953 When handed in at Local Office 26.3.1953 Port of Glasgow  
No. in Survey held at Glasgow Date, First Survey 27th November 1952 Last Survey 16th Jan. 1953  
Reg. Book. 40110 Supplement. Single on the Motor Screw vessel. Teeswood Tons Gross 1246 Net 633  
Number of Visits 12

Built at Burntisland By whom built The Burntisland Shipbuilding Co. Ltd Yard No. 359 When built 1952  
Engines made at Glasgow By whom made British Polar Engines Ltd Engine No. E882 When made 1952  
Donkey Boilers made at Nil By whom made Nil Boiler No. Nil When made Nil  
Brake Horse Power { Maximum 800 Owners Constantine Lewis Ltd Port belonging to Glasgow  
Service 160 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
M.N. as per Rule 160 Trade for which vessel is intended Open sea service

OIL ENGINES, &c. Type of Engines Heavy Oil Engine M45H Type 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 855 lbs/sq. in. Diameter of cylinders 340 mm Length of stroke 570 mm No. of cylinders 5 No. of cranks 5  
Mean Indicated Pressure 101.5 lbs per sq. in. Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 494 mm Is there a bearing between each crank Yes Revolutions per minute { Maximum 250 Service Nil

Flywheel dia. 1186 mm Weight 1250 lbs Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 821 Means of ignition COMP Kind of fuel used S.H.D.  
Crank Shaft, { Solid forged App. as per Rule App. dia. of journals 235 mm Crank pin dia. 235 mm Crank webs { Mid. length breadth 324 mm Thickness parallel to axis Nil  
{ All built App. as fitted 235 mm Mid. length thickness 130 mm Thickness around eye-hole Nil  
Flywheel Shaft, diameter as per Rule App. Intermediate Shafts, diameter as per Rule App. Thrust Shaft, diameter at collars as per Rule App.  
as fitted 260 mm

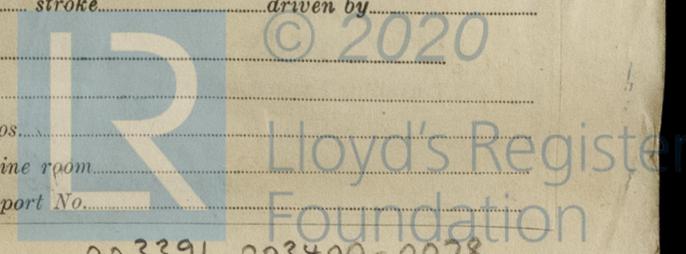
Tube Shaft, diameter as per Rule App. Screw Shaft, diameter as per Rule App. Is the { tube shaft fitted with a continuous liner { screw shaft fitted with a continuous liner {  
Bronze Liners, thickness in way of bushes as per Rule App. Thickness between bushes as per Rule App. Is the after end of the 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 Yes  
If so, state type Oil Gland Length of bearing in Stern Bush next to and supporting propeller 13 3/8

Propeller, dia. 340 mm Pitch 25.5 mm No. of blades 3 Material Steel whether moveable Yes Total developed surface 16.4 sq. feet  
Moment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 821 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 25.5 mm 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 None  
Cooling Water Pumps, No. and how driven ONE MAIN ENG. Working F.W. Nil S.W. Nil Spare F.W. Nil S.W. Nil 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 ONE 6000 G.P.H. Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line { No. and capacity of each ONE 6000 G.P.H. How driven MAIN ENG.  
Is 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 None  
Ballast Pumps, No. and capacity 2 OFF 4600 G.P.H. each Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 OFF 4600 G.P.H. each  
Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions Nil  
No. and size:—In machinery spaces Nil In pump room Nil  
In holds, &c. Nil

Direct Bilge Suctions to the engine room bilges, No. and size Nil  
Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes 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 Yes  
Are all Sea Connections fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks Yes 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  
What pipes pass through the bunkers Nil How are they protected Nil  
What pipes pass through the deep tanks Nil 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  
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 Yes Is the shaft tunnel watertight Yes Is it fitted with a watertight door Yes worked from Nil  
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork None

Main Air Compressors, No. ONE No. of stages TWO diameters 70/175 mm stroke 350 mm driven by MAIN ENG.  
Auxiliary Air Compressors, No. Nil No. of stages Nil diameters Nil stroke Nil driven by Nil  
Small Auxiliary Air Compressors, No. Nil No. of stages Nil diameters Nil stroke Nil driven by Nil  
What provision is made for first charging the air receivers Nil  
Scavenging Air Pumps or Blowers, No. ONE How driven MAIN ENG.  
Auxiliary Engines { Have they been made under survey Yes Engine Nos. Nil  
{ Makers name Nil Position of each in engine room Nil  
Report No. Nil



003391-003400-0078

JM  
16/4/53

AIR RECEIVERS:—Have they been made under survey... *yes* State No. of report or certificate *C 99233 C 99234*  
 State full details of safety devices... *Safety valve fitted also fusible plug.*  
 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 *66 cu ft* Internal diameter *25 1/2"* thickness *5/8"*  
 Seamless, welded or riveted longitudinal joint... *welded* Material *H.S.* Range of tensile strength *26/32 T.* Working pressure *355 lbs/sq. in.*

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... *24-4-52* 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 and particulars of approval... *25-2-52 Service speed of 250 RPM*

SPARE GEAR.  
 Has the spare gear required by the Rules been supplied... *yes* State if for "short voyages" only... *long voyages.*  
 State the principal additional spare gear supplied...

The foregoing is a correct description,  
*Thomas & Rotherham* for *BPE LTD* Manufacturer.

Dates of Survey while building  
 During progress of work in shops - - *1952 Nov 27<sup>th</sup>, 28<sup>th</sup> Dec 1<sup>st</sup> to 30<sup>th</sup> 1953 Jan. 16<sup>th</sup>*  
 During erection on board vessel - -  
 Total No. of visits *ENG. 12.*  
 Dates of examination of principal parts—Cylinders *28-11-52 1-12-52* Covers *19-12-52* Pistons *27-11-52* Rods *✓* Connecting rods *13-11-51 12-12-51*  
 Crank shaft *21-8-52* *SCAV* Flywheel shaft *23-11-49* Thrust shaft *3-12-52* 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...  
 Crank shaft, material *S.M. STEEL* Identification mark *2593 AS* *SCAV* Flywheel shaft, material, *O.H. STEEL* Identification mark *19941 HRI.*  
 Thrust shaft, material *O.H. STEEL* Identification mark *8222 WJ1* Intermediate shafts, material... Identification marks...  
 Tube shaft, material... Identification mark... Screw shaft, material... Identification mark...  
 Identification marks on air receivers *Nº 1251 13-3-53 TMS. Nº 1252 13-3-53 TMS.*

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...  
 Full description of fire extinguishing apparatus fitted in machinery spaces...  
 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...  
 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.)  
*This engine has been built under Special Survey in accordance with the Secretary's Letters and approved plans. The materials and workmanship are good and on completion the engine was tried on the test bed at the makers works with satisfactory results. It has now been despatched to the Burntisland S. B. Co Ltd to be fitted to their ship N 359 and is eligible in my opinion for the record of *h.M.C.* (with date) when efficiently installed on board. The torsional vibration characteristics have been approved for a service speed of 250 R.P.M.*

The amount of Entry Fee ... £ *52* : 0  
 Special ... £ :  
 Donkey Boiler Fee... £ :  
 Travelling Expenses (if any) £ :  
 When applied for... *31 MAR 1953* 19  
 When received... 19  
 Committee's Minute  
 Assigned *Deferred for completion*  
 A. G. Smith  
 Engineer Surveyor to Lloyd's Register of Shipping  
 GLASGOW 31 MAR 1953  
 Lloyd's Register Foundation

*Sum 24/3/53*  
*2-10-53*  
 Certificate (if required) to be sent to...  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)