

REPORT ON OIL ENGINE MACHINERY.

No. 105889
11 FEB 1949

Received at London Office

Date of writing Report 17-1-49 19 When handed in at Local Office 17 FEB 1949 19 Port of NEWCASTLE-ON-TYNE

Survey held at Wallsend Date, First Survey 11-3-47 Last Survey 21-1-49 19
Number of Visits 92

Single on the Triple Screw vessel PALUDINA. Tons Gross 6414.45 Net 2026.30

By whom built Swan, Hunter & Wigham Richardson Yard No. 1771 When built 1929-1 mo

By whom made Wallsend Slipway & Eng'g Co Ltd Engine No. 1007 When made 1949

By whom made ditto Boiler No. 1007 When made 1949

Owners Anglo Saxon Port belonging to LONDON

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Open sea service Carrying Petroleum in bulk

ENGINES, &c. Type of Engines 3 Cylr opposed piston type 2 or 4 stroke cycle 2 St. Single or double acting Single Acting
Minimum pressure in cylinders 640 lb/sq in Diameter of cylinders 600 (23 7/8) combined 2320 (91 5/8) Length of stroke 2320 (91 5/8) No. of cylinders 3 No. of cranks 3 of THREE THROW.

Indicated Pressure 91.5 lb/sq in Ahead Firing Order in Cylinders 1.3.2 Span of bearings, adjacent to the crank, measured between each THREE-THROW. Revolutions per minute 117

Centres of side rods 1200 m.m. Is there a bearing between each crank No. Kind of fuel used Heavy oil fuel.
Weight 3.43 Tons Moment of inertia of flywheel 16.650 x 10^5 lbs.in^2 or Kg.cm^2 Means of ignition Compression Kind of fuel used Heavy oil fuel.
Heat of compression 2.263 Heat of compression 2.263

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Intermediate Shafts, diameter as fitted 17 3/4" Thrust Shaft, diameter at collars ON CRANK SHAFT as fitted 4.50"

Is the screw shaft fitted with a continuous liner Yes

Thickness between bushes as per Rule 27/32" Is the after end of the liner made watertight in the propeller boss Yes

Length of bearing in Stern Bush next to and supporting propeller 72"

Material Bronze whether moveable No Total developed surface 84 sq. feet

Kind of damper, if fitted NIL

Means of reversing Engines Compressed air by hand lever Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes

Thickness of cylinder liners 25 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled Lagged

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Can one be overhauled while the other is at work Yes

Power Driven Lubricating Oil Pumps, including spare pump, No. and size one by Main Eng - 25 tons/hr one Stand-by - 60 tons/hr

Suctions, connected to both main bilge pumps and auxiliary pumps, No. and size:—In machinery spaces one of 4" & one of 4 1/2" In pump room 1 of 4"

Are the bilge suction pipes in holds and tunnel well 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 except on the 5" X above which has a STRUM BOX IN BILGE

Are they fitted with valves or cocks VALVES & COCKS 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 ABOVE

Are the blow off cocks fitted with a spigot and brass covering plate YES

How are they protected

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 YES

Is the shaft tunnel watertight NIL Is it fitted with a watertight door worked from

What provision is made for first charging the air receivers Steam driven Air Compressors

SWK
9/3/49

100-201500-1000

CONT'D OVER

AIR RECEIVERS:—Have they been made under survey YES. State No. of report or certificate...
 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. NIL. 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. 220 CUB. FT. Internal diameter. 4 1/2 3/8" thickness. 1 5/32"
 Seamless, welded or riveted longitudinal joint. RIVETED Material. M. STL. Range of tensile strength. 29 to 33 TONS Working pressure
 by Rules. 612 Actual. 600

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. No.
 PLANS. Are approved plans forwarded herewith for shafting. Yes Receivers. Yes. Separate fuel tanks. Yes
 (If not, state date of approval)

Donkey boiler. Yes General pumping arrangements. ✓ Pumping arrangements in machinery space. 2-5-47
 Oil fuel burning arrangements. Yes (sent with LEMBULUS. ENG. 1001)
 Have Torsional Vibration characteristics been approved. yes. Date of approval. 4-11-46
& Secy's letter of 5th April

SPARE GEAR.

Has the spare gear required by the Rules been supplied. YES
 State the principal additional spare gear supplied. 1 main Bearing, 25 Piston Rings, 2 Fuel Valves (complete),
2 sets of Fuel Pump pressure parts, valves, crossheads & levers, etc.; 12 each Rubber Pipes for Piston water
service & for Transverse Pin Lubrication; 1 each Roller chains for chain drives;
2 Pyrometers for Exhaust; 6 HD Bolts for Bedplate, one TS(Cl), etc. etc.

The foregoing is a correct description, and the particulars of the installation as fitted, are as approved
 for TORSIONAL VIBRATION CHARACTERISTICS. Manufacturer.

FOR THE WALLSEND SLIPWAY & ENGINEERING

Dates of Survey while building	During progress of work in shops - -		During erection on board vessel - -	
	1947	1948	1947	1948
	MAR 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	MAY 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	JUNE 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	JULY 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
	NOV 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	DEC 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	JAN 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	FEB 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
	Total No. of visits. <u>92</u>			

Dates of examination of principal parts—Cylinders. 6-5-48 to 21-7-48. Pistons. Various to 3-8-48 Rods. 27-5-48 to 5-7-48 Connecting rods. 16-6-48
 Crank shaft. 28-6-48 Flywheel shaft. as Crank Sh. Thrust shaft. as Crank Sh. Intermediate shaft. 6-8-48 Tube shaft. ✓
 working 14-6-48 IN WORKS 14-6-48 IN WORKS 31-5-48
 Screw shaft. Spare 7-7-48 Propeller. AT SHIP 20-8-48 Stern tube. AT SHIP 21-7-48 Engine seatings. 14-9-48 Engine holding down bolts. 4-10-48
 Completion of fitting sea connections. 16-8-48 Completion of pumping arrangements. 14-1-49 Engines tried under working conditions. JAN. 1949
 Crank shaft, material. M. STL Identification mark. LLOYDS 5137 Flywheel shaft, material. M. STL Identification mark. as Crank
 Thrust shaft, material. Identification mark. WHP 3-5-48 Intermediate shaft, material. M. STL Identification marks. 16929 HA
 Tube shaft, material. Identification mark. Screw shaft, material. M. STL Identification mark. 16929 HA

Identification marks on air receivers. LLOYDS TEST 800 LBS.
W.P. 600 LBS
2 STARTING AIR RECEIVERS
AW 9-7-48 AW
 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
 Description of fire extinguishing apparatus fitted. Steam fire smothering, also Foam Extinguishers 3 of 10 Gallon & 5 of 2 Gal.
in ENG. RM. & IN BIR. RM. one 2 1/2" Hose on 4.5 Pump & one 2 1/2" Hose in B. Rm. to Awy. C.W.
 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. not desired
 Is this machinery duplicate of a previous case. Yes If so, state name of vessel. LEMBULUS.
NWC Rpt No 105153.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed and fitted on board under special survey, in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good.
The machinery was tested under working conditions with satisfactory results and is eligible, in my opinion, for record + LMC 1.49, and the notations;—DB 180th TS Cl., Fitted for oil fuel 1.49, FP above 150°F.
The torsional vibrations characteristics data was approved 4-11-46 & 5-4-48.
Torsiograph records were taken during sea trials, and a slight critical was noticed at 94.5.
In view of this, a NOTICE PLATE, to avoid continuous running between 90 and 100 rpm has been fitted at the CONTROL STATION. Copies of the Torsiograph Records will be forwarded as soon as there are available.
Fees on May 1947 Scale.

The amount of Entry Fee ... £ ...
 Special ... £186
 7 1/2" Constr. Bed. Satab. Cols. £14 - 0/-
 Donkey Boiler Fee... £47 - 16/-
 2 Starting Air Receivers. £8 - 0/-
 Travelling Expenses (if any) £
 When applied for. Not yet 19
 When received. 19
 Committee's Minute
 Assigned. + LMC 1.49 Out Eng.
C.L. DB 180th



NEWCASTLE-ON-TYNE. (The Surveyors are requested not to write on or below the space for Committee's Minute.)