

REPORT ON OIL ENGINE MACHINERY

No. 81713

Received at London Office 25 AUG 1927

NEWCASTLE-ON-TYNE

Date of writing Report

19

When handed in at Local Office 11. 8.

Port of

Date, First Survey 5 Nov. 1925 Last Survey 4 Aug 1927

Number of Visits 112

on in Survey held at

of Book.

Single
on the ~~Triple~~ Screw vessel

"Patella"

Tons: Gross 7468
Net 4328

uilt at

Tarrow
Wallsend

By whom built

Palmer's S B Coy Ltd.

Yard No.

When built 1927

Engines made at

Wallsend

By whom made

North Eastern Marine Co Ltd

Engine No.

2616 When made 1927

onkey Boilers made at

Wallsend

By whom made

North Eastern Marine Co Ltd

Boiler No.

2616 When made 1927

ake Horse Power

3500

Owners

Anglo-Saxon Petroleum Oil Co Ltd

Port belonging to

London

om. Horse Power as per Rule

1200/1200

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

L ENGINES, &c.

Type of Engines

North Eastern Works Diesel 2 or 4 stroke cycle H Single or double acting D.A.

rimum pressure in cylinders

500

No. of cylinders

6

Diameter of cylinders

820 mm

No. of cranks

6

Length of stroke

1500 mm 59 1/8

an of bearings, adjacent to the Crank, measured from inner edge to inner edge

1110 mm

Is there a bearing between each crank

yes

olutions per minute

85

Flywheel dia.

3000 mm

Weight

9 tons

Means of ignition

Compression Kind of fuel used Fuel oil F.P. Abney 180°F.

ank Shaft, dia. of journals

as per Rule 504 mm

as fitted 540 mm

Crank pin dia.

540 mm

Crank Webs

Mid. length breadth 1040 mm

Thickness parallel to axis 340 mm

wheel Shafts, diameter

as per Rule 504 mm

as fitted 540 mm

Intermediate Shafts, diameter

as per Rule 15.8"

as fitted 22.044"

Thrust Shaft, diameter at collars

as per Rule 16.632"

as fitted 22.044"

be Shafts, diameter

as per Rule 14.3"

as fitted 18.3"

Screw Shaft, diameter

as per Rule 8.3"

as fitted 8.8"

Is the screw shaft fitted with a continuous liner

yes

onze Liners, thickness in way of bushes

as per Rule 8.3"

as fitted 8.8"

Thickness between bushes

as per rule 6.2"

as fitted 7.9"

Is the after end of the liner made watertight in the

peller 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

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

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

of the tube shaft

yes (also C.L. and wood lined bush)

Length of Bearing in Stern Bush next to and supporting propeller

6'-2 1/2"

opeller, dia.

17'-6"

Pitch

16'-3"

No. of blades

4

Material

Bronze whether Moveable

no

Total Developed Surface

95 sq. feet

ethod of reversing Engines

Compressed air Is a governor or other arrangement fitted to prevent racing of the engine when disclutched

yes

Means of lubrication

peed

Thickness of cylinder liners 45 to 50 mm

Are the cylinders fitted with safety valves

yes

Are the exhaust pipes and silencers water cooled or lagged with

conducting material

yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

yes

oling Water Pumps, No.

3, 2 on M.E. + 1 motor driven

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

yes

ge Pumps fitted to the Main Engines, No.

2

Diameter

140 mm

Stroke

300 mm

Can one be overhauled while the other is at work

yes

mps connected to the Main Bilge Line

No. and Size 2 as above

How driven

on M.E. + 1 motor driven

1 duplex dky 6" x 4" x 10"

1 duplex Ball. dky 8" x 10" x 10"

Steam driven

2 on M.E. 210 dyl x 300 mm

last Pumps, No. and size

1 @ 8" x 10" x 10"

Lubricating Oil Pumps, including Spare Pump, No. and size

1 motor driven

6" suction

yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

two independent means arranged for circulating water through the Oil Cooler

yes

mps, No. and size:—In Engine and Boiler Room

6 @ 3 1/2"

Holds, &c.

Carrying petroleum in bulk 4 and hold 3 @ 2 1/2" 3 @ 4" in pump room, 1 @ 3" in fwd pp room

ependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

1 @ 4 1/2" & 1 @ 4" dia.

all the Bilge Suction pipes in Holds and Tunnel are fitted with strum-boxes

yes

Are the Bilge Suctions in the Machinery Space

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

yes

all Sea Connections fitted direct on the skin of the ship

yes

Are they fitted with Valves or Cocks

both

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

above

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

at pipes pass through the bunkers

none

at pipes pass through the deep tanks

yes

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mounting accessible at all times

yes

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

partment to another

yes

Is the Shaft Tunnel watertight

none

Is it fitted with a watertight door

yes

worked from

wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

in Air Compressors, No.

Two

No. of stages

Three

Diameters

15/650/650 mm

Stroke

550 mm

Driven by Main Engines

xiliary Air Compressors, No.

Two

No. of stages

Three

Diameters

300 cubic feet free air

Stroke

Driven by 1 off steam

all Auxiliary Air Compressors, No.

yes

No. of stages

yes

Diameters

Stroke

Driven by

1 off oil

avenging Air Pumps, No.

none

Diameter

Stroke

Driven by

yes

xiliary Engines crank shafts, diameter

as per Rule

as fitted

See separate reports.

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

yes

the internal surfaces of the receivers be examined

yes

What means are provided for cleaning their inner surfaces

manholes in ends

there a drain arrangement fitted at the lowest part of each receiver

yes

gh Pressure Air Receivers, No.

Three

Cubic capacity of each

20 ft

Internal diameter

440 mm

thickness

22.5 mm

mless, lap welded or riveted longitudinal joint

Seamless

Material

Steel

Range of tensile strength

32538 lbs

Working pressure by Rules

1630 lbs

orting Air Receivers, No.

Four

Total cubic capacity

1820 ft

Internal diameter

1545.6 mm

thickness

27.48 mm

mless, lap welded or riveted longitudinal joint

milled

Material

Steel

Range of tensile strength

28632 lbs

Working pressure by Rules

450 lbs

Registered
Foundation

W 205-0103

IS A DONKEY BOILER FITTED? yes (two) If so, is a report now forwarded? yes.
HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	8-10-26 & 10-3-27	500 lbs	1000 lbs	WB	
" " COVERS	14-12-26 & 18-3-27	"	"	WB	
" " JACKETS	21-12-26 & 18-1-27	20 lbs.	40 lbs	WB	
" " PISTON WATER PASSAGES	13-1-27 & 1-4-27	"	45 lbs	WB	
MAIN COMPRESSORS—1st STAGE	14-9-26 & 3-11-26	45 lbs	640 lbs	WB	
" 2nd "	14-9-26 & 9-2-27	300 lbs	640 lbs	WB	
" 3rd "	13-1-27 & 16-3-27	1000 lbs	2200 lbs	WB	
AIR RECEIVERS—STARTING	31-3-27 & 22-4-27	450 lbs	900 lbs	WB	
" INJECTION		1000 lbs	2000 lbs	T.H.	124920, 124923, 124924 13-7-26 15-7
AIR PIPES	26-5-27 & 14-4-27	450 lbs	645 lbs	WB	
FUEL PIPES		200 & 15 lbs. 1000 lbs.	400 & 60 lbs. 2000 lbs.	WB	
FUEL PUMPS	13-1-27	1000 lbs	2000 lbs.	WB	
SILENCER	✓	✓	✓	✓	
" WATER JACKET	✓	✓	✓	✓	
SEPARATE FUEL TANKS	✓	✓	✓	✓	

PLANS. Are approved plans forwarded herewith for Shafting 11-4-27 Receivers sent with 1st entry report of the Harpessa
Donkey Boilers See Harpessa General Pumping Arrangements See Harpessa Oil Fuel Burning Arrangements ✓
Separate Tanks

SPARE GEAR In accordance with & much in excess of Rule requirements. List of same is enclosed herewith (blue print.).

The foregoing is a correct description.
THE NORTH EASTERN MARINE ENGINEERING CO., LTD.
Manufacturer.

Dates of Survey while building	{	During progress of work in shops - -	1925 NOV. 5. 18. 130.										1926 FEB. 9. 22. MAR. 11. APRIL. 1. 9. 29. MAY. 19. 26. JUNE. 4. 10. 17. 18. JULY. 2. 22. 28. AUG. 4. 12. 20. 25. 30.									
		During erection on board vessel - -	1927 SEP. 2. 6. 16. 17. 20. 23. 28. OCT. 1. 5. 6. 8. 21. 22. 25. 27. 29. NOV. 2. 3. 8. 9. 16. 19. 24. 25. DEC. 3. 8. 9. 10. 13. 16. 17. 21. 31. JAN. 5. 6. 20. 24. 25. 28. FEBRUARY. 3. 9. 14. 15. 17. 18. 23. 24. 25. 28. MAR. 2. 4. 8. 10. 11. 15. 16. 18. 24. 25. 28. 29. 31. APRIL. 1. 4. 7. 8. 13. 22. 25. 27. MAY. 3. 6. 11. 13. 20. 26. 31. JUNE. 4. 9. JULY. 6. 14. AUG. 12.																			
		Total No. of visits																				
Dates of Examination of principal parts—Cylinders			8-10-26 & 10-3-27	Covers			14-12-26 & 18-3-27	Pistons			13-1-27 & 1-4-27	Rods			13-1-27 & 1-4-27	Connecting rods			3-2-27			
Crank shaft			9-4-26	Flywheel shaft			5-11-25	Thrust shaft			16-11-26	Intermediate shafts			18-3-27	Tube shaft			✓			
Screw shaft			12-8-26.	Propeller			4-4-27	Stern tube			26-5-27	Engine seatings			6-5-27.	Engines holding down bolts			16-6-27			
Completion of fitting sea connections			4-8-27.	Completion of pumping arrangements			16-6-27	Engines tried under working conditions			10-8-27.											
Crank shaft, Material			OH Steel	Identification Mark			5618, 5619 H.I. 9-4-26	Flywheel shaft, Material			OH Steel	Identification Mark			399 TL. R's							
Thrust shaft, Material			OH Steel	Identification Mark			1805 W.B.	Intermediate shafts, Material			OH Steel	Identification Marks			1921 W.B.							
Tube shaft, Material			✓	Identification Mark			✓	Screw shaft, Material			OH Steel	Identification Mark			12400 TN. 494 38015 80							

Is the flash point of the oil to be used over 150° F. yes
Is this machinery duplicate of a previous case yes. If so, state name of vessel M.S. Pecten.
General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this Vessel has been built under Special Survey. Materials & Workmanship good. Hydraulic tests satisfactory. The whole of the machinery is efficiently installed and fixed in the vessel and has been tried and tested under working conditions and is in good & safe working condition and eligible in my opinion to be classed & have records. LMC. 8-27 Tail Sha C.L. (O.G.) Electric Light. Fitted for oil fuel 8-27 Flash Point above 150° F

The amount of Entry Fee ...	£ 6 - 0 - 0	When applied for,
Special ...	£ 130 - 3 - 6	24 AUG 1927
Donkey Boiler Fee ...	£ 19 - 16 - 0	When received,
Air Reservoir	£ 18 - 18 - 0	15-9-27
Travelling Expenses (if any)		

Committee's Minute TUES. 30 AUG 1927
Assigned 1 June 8-27
Oil Engines 2 DB 18016

William Butler.
Engineer Surveyor to Lloyd's Register of Shipping.



Newcastle-on-Tyne

Certificate (if required) to be sent to

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

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