

# REPORT ON OIL ENGINE MACHINERY.

No. 95474

Received at London Office

OCT - 1 1937

NEWCASTLE-ON-TYNE

of writing Report

19

When handed in at Local Office

30/9/37 Port of

in Survey held at

Newcastle on Tyne

Date, First Survey

23 Dec/1936

Last Survey

28-9-1937

Book.

Number of Visits

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel

"ARNDALE"

Tons { Gross 8296 Net 4936

ilt at Newcastle on Tyne

By whom built Swan, Hunter & W. Richardson & Co. Yard No. 1516 When built 1937

gines made at Sunderland

By whom made Wm Daxford & Sons, Ltd Engine No. 201 When made 1937

nkey Boilers made at Newcastle

By whom made Swan, Hunter & W. Richardson & Co. Boiler No. 1516 When made 1937

ake Horse Power 2850

Owners The Admiralty

Port belonging to LONDON

Hor. Horse Power as per Rule 687

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

de for which vessel is intended Ocean going

23 1/8

91 5/16

## ENGINES, &c.

Type of Engines

Doxford Opposed-piston airless injn 2 or 4 stroke cycle 2

Single or double acting Single

imum pressure in cylinders 570 lb

Diameter of cylinders 600 mm

Length of stroke

upper 980

No. of cylinders 4

No. of cranks

4 three throw

Indicated Pressure

84 lb

2320

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

Is there a bearing between each crank

utions per minute 97

Flywheel dia.

F 2050 mm Weight 62 cwt

Means of ignition

Compressor

Kind of fuel used

Heavy oil fuel

nk Shaft, dia. of journals

as per Rule

as fitted

Crank pin dia.

as per Rule

as fitted

Crank Webs

Mid. length breadth

shrunk

Mid. length thickness

Thickness parallel to axis

Thickness around eyehole

heel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as fitted

12.85

Thrust Shaft, diameter at collars

as per Rule

as fitted

ie Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

14.24

Is the

screw

shaft fitted with a continuous liner

Yes

ize Liners, thickness in way of bushes

as per Rule

as fitted

23 5/32

Thickness between bushes

as per rule

as fitted

9 1/16

Is the after end of the liner made watertight in the

eller boss

Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

one length

he 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

tight fit

wo liners are fitted, is the shaft lapped or protected between the liners

Yes

Is an approved Oil Gland or other appliance fitted at the after end of the tube

Yes

Length of Bearing in Stern Bush next to and supporting propeller

5' 6 1/2

eller, dia. 16' 9"

Pitch

10.75

No. of blades

4

Material

hang By

whether Moveable

No

Total Developed Surface

91

sq. feet

h of reversing Engines

Hand lever

Is a governor or other arrangement fitted to prevent racing of the engine when decelerated

Yes

Means of lubrication

Hand lever

Are the cylinders fitted with safety valves

Yes

Are the exhaust pipes and silencers water cooled or lagged with

lagged

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

led up funnel

ding Water Pumps, No. 1. 1/2 hp + 1 Standby Steam

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

Yes

ge Pumps worked from the Main Engines, No. None

Diameter

Stroke

Can one be overhauled while the other is at work

Yes

ns connected to the Main Bilge Line

No. and Size

One 7 1/2 x 10 x 10 duplex

180 tons/hr

& two 7 x 8 x 8 duplex, 100 tons/hr

Steam

he cooling water led to the bilges

No

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

ngements

last Pumps, No. and size

one 10 x 12 x 10 aft in ER

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

one 8 x 8 x 10 in Ford Hold Pump Room

one 14.5 hp 100 mm x 610 mm

one Stand by Steam

8 x 7 x 18

two independent means arranged for circulating water through the Oil Cooler

Yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

ns, No. and size:—In Machinery Spaces

3-3 1/2" also 2-2 1/2" from Ford oil Cuttersways

In Pump Room

For 2 1/2"

Aft 2 1/2"

Holds, &c.

In Ford Cargo Hold 2 1/2" and 2 1/2"

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

2 1/2"

all the Bilge Suction pipes in Hold and Tunnel Well fitted with strum-boxes

Yes

Are the Bilge Suctions in the Machinery Spaces

Yes

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

Yes

Are they fitted with Valves or Cocks

Yes both

all Sea Connections fitted direct on the skin of the ship

Yes

Are the Overboard Discharges above or below the deep water line

both

they fixed sufficiently high on the ship's side to be seen without lifting the platform plates

Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Yes

they each fitted with a Discharge Valve always accessible on the plating of the vessel

Yes

How are they protected

None

at pipes pass through the bunkers

None

at pipes pass through the deep tanks

None

Have they been tested as per Rule

Yes

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

Yes

he 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

Yes

Is it fitted with a watertight door

Yes

worked from

Yes

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

Yes

in Air Compressors, No. None

— Airless suction

No. of stages

Diameters

Stroke

Driven by

Steam

Auxiliary Air Compressors, No. 2

No. of stages

3

Diameters

Stroke

Driven by

all Auxiliary Air Compressors, No. None

No. of stages

3

Diameters

Stroke

Driven by

Steam

avinging Air Pumps, No. One

See Sld Rpt in 32175

Diameter

Stroke

Driven by

levers from M. Eng.

all on

5th side in E.R.

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

one 30 Kw oil by Dyno Ltd

one 30 Kw + one 8 Kw Steam

Dyno Sats

Position

all on

5th side in E.R.

Foundation

002754-002761-0129

Lloyd's Register

Foundation

AIR RECEIVERS:—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

High Pressure Air Receivers, No. None

Cubic capacity of each ✓

Internal diameter ✓

thickness ✓

Seamless, lap welded or riveted longitudinal joint ✓

Material ✓

Range of tensile strength ✓

Working pressure ✓

by Rules

Actual

Starting Air Receivers, No. Two

Total cubic capacity 280 cub ft

Internal diameter 4'-1 1/2"

thickness 1 3/32"

Seamless, lap welded or riveted longitudinal joint Riveted

Material Steel

Range of tensile strength 29/33 tons

Working pressure 602 lbs

by Rules

Actual

IS A DONKEY BOILER FITTED? Yes, Two

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

(If not, state date of approval)

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

See ER 11/3/36 as per British Junc. Yards 1498.

Pumping Arrangements in Machinery Space 11/3/36

Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied

1 Set of ahead thrust pads; 1-6 feed T&K lubricator for cylinders;

1- C.I. Propeller (solid); 1 Screw Shaft complete with oil & nut; 2 feed check valve lids;

12 boiler tubes; 1 safety valve spring; 1 set cages for feed water filter;

1 nest of tubes for distilled water cooler & one for oil cooler; 1 set of cages or strainers for forced lubrication filters.

The foregoing is a correct description.

G. J. J. J. J.

Manufacturer.

Dates of Survey while building	During progress of work in shops--	During erection on board vessel--	Total No. of visits	1936 1937											
				Dec. 23.	Jan. 2, 4, 12	Mar. 5, 11, 16, 22	Apr. 15, 20, 23, 26, 27, 29, 30	May 3, 7, 10, 11, 13, 25, 28, 31	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
					3, 4, 8, 10, 11, 14, 21, 22, 28		July 1, 2, 7, 9, 13, 15, 21, 23		Aug. 5, 9, 16, 17, 18, 24, 27, 31		Sept. 1, 3, 16, 21, 28				

Dates of Examination of principal parts—Cylinders				Covers				Pistons				Rods				Connecting rods			
Crank shaft	✓	Flywheel shaft	✓	Thrust shaft	✓	Intermediate shafts	28/6/37	Tube shaft	✓										
Screw shaft	28/6/37	Propeller	13/7/37	Stern tube	11/6/37	Engine seatings	1/9/37	Engines holding down bolts	1/9/37										
Completion of fitting sea connections				13-7-37	Completion of pumping arrangements				21-9-37	Engines tried under working conditions				28-9-37					
Crank shaft, Material	✓	Identification Mark	✓	Flywheel shaft, Material	✓	Identification Mark	✓	Intermediate shafts, Material	2 Steel	Identification Marks	6903 HAI	Screw shaft, Material	2 Steel	Identification Mark	6903 HAI	Spare screw shaft	6903 HAI		
Thrust shaft, Material	✓	Identification Mark	✓																
Tube shaft, Material	✓	Identification Mark	✓																

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

If so, have the requirements of the Rules been complied with ✓

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓

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 Yes

If so, state name of vessel British Junc. New Rpt No 94124

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been constructed and installed under survey in accordance with the Rules and approved plans, and the material and workmanship are good. The machinery has been satisfactorily installed on board & tested under working conditions, and the vessel is eligible in my opinion for record + LMC. .37; TSC. 2 DBLs. 150 lbs WP.

The amount of Entry Fee .. £		When applied for,	
Special	15 <sup>th</sup> installing 21 : 17 :	30 SEP 1937	
2 Donkey Boilers Fee	10-2-0 £ 27 : 8 :	When received,	
2 Starting Air Receivers	4 : 4 :	12 10 37	13/10
2 Travelling Expenses (if any)			

Committee's Minute

Assigned + LMC 9.37  
2 DBL - 150 lb  
oil fuel

FRI 8 OCT 1937

A. A. Latt

Engineer Surveyor to Lloyd's Register of Shipping.



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