

Rpt. 4b

## REPORT ON OIL ENGINE MACHINERY

No. 87042

18 APR 1931

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report

19

When handed in at Local Office

16<sup>th</sup> April 1931. Port of

NEWCASTLE-ON-TYNE

No. in Survey held at  
Reg. Book.

90379

Single

on the

Screw vessel

M.V. "ELISE"

Date, First Survey

21<sup>st</sup> May 1930

Last Survey

16<sup>th</sup> April 1931

Number of Visits

119

Tons { Gross 7910  
Net 4719

Built at

Walker

By whom built

S. H. G. Armstrong Whitworth &amp; Co. (Engineers) Ltd. Yard No. 1068

When built

1931

Engines made at

Sextonwood

By whom made

S. H. G. Armstrong Whitworth &amp; Co. (Engineers) Ltd. Engine No. 96

When made

1931

Donkey Boilers made at

Sextonwood

By whom made

S. H. G. Armstrong Whitworth &amp; Co. (Engineers) Ltd. Boiler No. 96

When made

1931

Brake Horse Power

3300

Owners

Carl Beech

Port belonging to

Juedstrand

Nom. Horse Power as per Rule

776

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which vessel is intended

Ocean Going

7378

4174

## OIL ENGINES, &amp;c.—Type of Engines

Armstrong Sulzer

2 or 4 stroke cycle 2. Single or double acting Single

Maximum pressure in cylinders

500 lb/sq. in.

Diameter of cylinders

600 in.

Length of stroke

1060 in.

No. of cylinders

8

No. of cranks

8

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

860 in.

Is there a bearing between each crank

Yes

Revolutions per minute

125

Flywheel dia.

2075 in.

Weight

4.6 tons

Means of ignition

Compression

Kind of fuel used

Crude oil

Crank Shaft, dia. of journals

as per Rule 403 in.

as fitted 420 in.

Crank pin dia.

420 in.

Crank Webs

Mid. length breadth

500 in.

Thick. parallel to axis

as per Rule 403 in.

as fitted 420 in.

Solid

## COMPRESSOR

Shaft, diameter

as per Rule 403 in.

as fitted 285 in.

Intermediate Shafts, diameter

as per Rule 12.03 in.

as fitted 18.75 in.

Thrust Shaft, diameter at collars

as per Rule 403 in.

as fitted 420 in.

Solid

Tube Shaft, diameter

as per Rule 403 in.

as fitted 285 in.

Screw Shaft, diameter

as per Rule 13.28 in.

as fitted 13.75 in.

Is the

screw

shaft fitted with a continuous liner

Yes

Yes

Yes

Bronze Liners, thickness in way of bushes

as per Rule 6.75 in.

as fitted 7.5 in.

Thickness between bushes

as per Rule 6.54 in.

as fitted 6.54 in.

Is the after end of the liner made watertight in the

propeller boss

Yes

Continuous

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 or other appliance fitted at the after

end of the tube shaft

No

Length of Bearing in Stern Bush next to and supporting propeller

4' 9"

Propeller, dia.

15' 0"

Pitch

11' 3"

No. of blades

4

Material

Bronze

whether Moveable

Solid

Total Developed Surface

80 sq. feet

Method of reversing Engines

Screw Motor

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

Yes

Means of lubrication

Forced

Yes

Thickness of cylinder liners

20 in.

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

Yes

Cooling Water Pumps, No.

Three

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.

2

Diameter

6 in.

Stroke

13 3/4 in.

Can one be overhauled while the other is at work

Yes

Pumps connected to the Main Bilge Line

No. and Size

Two one @ 8" x 9" x 12" &amp; one @ 10 1/2" x 14" x 24"

How driven

Steam

Ballast Pumps, No. and size

One @ 10 1/2" x 14" x 24"

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

Two @ 6 1/2" x 9" x 12" &amp; 7 1/2" x 13"

Are two independent means arranged for circulating water through the Oil Cooler

None fitted

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces

Two @ 3 1/2" dia

Two @ 2 1/2" dia

Two @ 5" dia

In Holds, &amp;c.

One Peak 3" dia Aft. Peak 4" dia For. Cofferdam 4" dia Aft. Cofferdam 4" dia Hold 2 @ 2" dia

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

One @ 5" dia

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

Yes

Are the Bilge Suctions in the Machinery Spaces

Are all Sea Connections fitted direct on the skin of the ship

Yes

Are they fitted with Valves or Cocks

Both

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

Above

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

None

How are they protected

Yes

What pipes pass through the deep tanks

Yes

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

Yes

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

Yes

Main Air Compressors, No.

One

No. of stages

3

Diameters

5 1/2" x 4 1/2" x 10 1/2"

Stroke

600 in.

Driven by

Main Engine

Auxiliary Air Compressors, No.

One (200 c.ft.)

No. of stages

3

Diameters

13 1/2" x 10 1/2" x 3 1/2"

Stroke

8 in.

Driven by

Steam

Small Auxiliary Air Compressors, No.

One (800 c.ft.)

No. of stages

3

Diameters

10 1/2" x 8 1/2" x 2 1/2"

Stroke

6 in.

Driven by

Steam

Scavenging Air Pumps, No.

One (Tandem)

Diameter

1400 in.

Stroke

680 in.

Driven by

Main Engine

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

## 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

Yes

What means are provided for cleaning their inner surfaces

Manhole

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

Yes

High Pressure Air Receivers, No.

4 @ 1000 lbs.

Cubic capacity of each

23 c.ft.

Internal diameter

470 in.

Thickness

25 in.

Working pressure by Rules

1430 lbs./sq. in.

Seamless, lap welded or riveted longitudinal joint

Seamless

Starting Air Receivers, No.

2 @ 425 lbs.

Total cubic capacity

540 c.ft.

Internal diameter

50 in.

Thickness

9 1/2 in.

Working pressure by Rules

1800 lbs./sq. in.

Seamless, lap welded or riveted longitudinal joint

Riveted

Material

Steel

Range of tensile strength

28-32 tons

Working pressure by Rules

29-33 tons

Working pressure by Rules

437 lbs.

Working pressure by Rules

437 lbs.

Working pressure by Rules

437 lbs.

002427-002434-0046

Lloyd's Register Foundation



# **DONKEY BOILERS FITTED?**

PLANS. Are approved plans forwarded herewith for Shafting (If not, state date of approval)

Donkey Boilers

General Pumping Arrangements

Receivers

Separate Tanks

Oil Fuel Burning Arrangements

SPARE GEAR 1 cyl cover complete with all valves etc & one complete set of valves for one cylinder & rings etc, fuel needle valves for half the number of cylinders, 1 piston complete with all piston rings, studs & nuts, 1 set of piston rings for 1 piston, 2 telescopic cooling pipes for one piston, 1 set of skew wheels for cam shaft drive, 1 set of studs & nuts for one cyl cover, 2 crosshead bearing bolts & nuts, 2 crank pin bearing bolts & nuts, 1 set of bolts for crank shaft coupling, 1 set of bolts for the intermediate shaft coupling, 2 cyl liners, 1 hr of main bearing brasses, 1 piston head, skirt & rod. Main & aux Compressor & Pumps. 1 set of piston rings for each compressor piston, 1 half set of suction & delivery valves for each stage, 2 bottom end bolts for main compressor, 10 of suction & delivery valves, 2 bottom end & 2 top end bolts for Scavenge air pump, 1 set of piston rings, valve & seat etc for each stage of aux compressor, all working parts for one fuel pump. Overhauling Pumps 1 each & one del valve for the oil fuel transfer pump, 1 suction & one delivery valve for bilge pump, a quantity of assorted bolts & nuts, a length of pipe of each size used for the fuel delivery & injection air pipes & the air delivery from main & aux compressors to receivers with unions & flanges suitable for each.

The foregoing is a correct description,

FOR

W. A. JONSTON & SONS LTD (ENGINEERS) LIMITED

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1930 May 21, June 13, 16, 18, 19, July 1, 4, 7, 15, 18, 23, 24, 28, Aug 5, 11, 15, 20, 22, 25, 26, Sep 4, 5, 12, 16, 17, 19, 24, 25, 26, 29, 30, Oct 1, 2, 3, 4, 6, 8, 10, 13, 14, 16, 20, 21, 22, 23, 24, 26, 28, 29, 30, 31, Nov 3, 4, 5, 6, 7, 11, 12, 13, 14, 15, 18, 19, 21, 25, 27, 28, Dec 1, 2, 3, 4, 5, 8, 9, 12, 16, 17, 18, 19, 22, 29, 30, 31, 1931 Jan 5, 8, 9, 12, 16, 22, 23, 26, 27, 28, 30, Feb 2, 4, 6, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24, 25, 27, Mar 2, 3, 5, 10, 12, 13, 19, Apr 16.  
During erection on board vessel -  
Total No. of visits 119.

Dates of Examination of principal parts - Cylinders 14.11.30 Covers 8.12.30 Pistons 15.11.30 Rods 26.8.30 Connecting rods 28.11.30.  
Crank shaft 3.11.30 COMPRESSOR 8.11.30 FLYWHEEL 12.11.30 Thrust shaft 12.11.30 Intermediate shafts 12.11.30 Tube shaft ✓  
Screw shaft 23.12.30 Propeller 1.12.30 Stern tube 4.12.30 Engine seatings 4.12.30 Engines holding down bolts 23.1.30.  
Completion of fitting sea connections 18.12.30 Completion of pumping arrangements 3.3.31. Engines tried under working conditions 5.3.31.  
Crank shaft, Material Steel Identification Mark 8505 & 8506. COMPRESSOR shaft, Material Steel Identification Mark 8507.  
FLYWHEEL Thrust shaft, Material Steel Identification Mark 1816 Intermediate shafts, Material Steel Identification Marks 1986.  
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material Steel Identification Mark 1927.

Is the flash point of the oil to be used over 150° F.

Is this machinery duplicate of a previous case

Yes.

If so, state name of vessel

M.V. "ATTILA" Nac Rpt No 86497.

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

The machinery has been built under Special Survey and in accordance with the Society's Rules & approved plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board, tested & manoeuvred on completion under working conditions and found satisfactory. The machinery of this vessel is eligible in my opinion to be classed and to have the notation of "Oil Engine" and records of + LMC 4,31 and TS CL.

The amount of Entry Fee ... £ 6 : -

Special ... £ 113 : 16

Donkey Boiler Fee ... £ 22 : 16

AIR RECEIVERS, Travelling Expenses (if any) £ 6 : 6

Committee's Minute

Assigned

+ L.M.C. 4,31 C.L.

Oil Eng. 288.150lb.  
CERTIFICATE WRITTEN.

When applied for,

17 APR 1931

When received,

30.4.1931

Engineer Surveyor to Lloyd's Register of Shipping.



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Certificate (if required) to be sent to Newcastle-on-Tyne

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

Rpt. 5a.

Date of writing

No. in Reg. Book.

90379.

Master

Engines made

Boilers made

Nominal Horsepower

MULTITUBULAR

Manufacturer

Total Heating Surface

No. and Description of Boilers

Tested by hydro

Area of Fire

Area of each

In case of damage

Smallest diameter

Smallest diameter

Largest internal

Thickness

long, seams

Percentage of

Percentage of

Thickness of

Material

Length of plate

Dimensions of

End plates in

How are stays

Tube plates:

Mean pitch of

Girders to cover

at centre

in each

Tensile strength

Pitch of stays

Working pressure

Thickness

Pitch of stays

Working pressure

Diameter

Over

Working pressure

Diameter

Over