

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

attach to 7.8. Rpt

WILLIAM PENN

No. 5984

TUE NOV 19 1920

Date of writing Report

4th Novr.

19 20

Was handed in at Local Office

Port of

Received at London Office

Copenhagen

No. in Survey held at
Reg. Book.

Copenhagen

Date, First Survey 5th April 1918Last Survey 10th May 1920

Number of Visits 55

✓ on the ^{Single} Twin ^{Triple} Screw vessel

Master

Built at Wilmington

By whom built Tusey & Jones Co

Yard No. 17

When built

Engines made at

Copenhagen

By whom made

Akt. Burmeister & Wain

Engine No. 696

When made 1918

Donkey Boilers made at

By whom made

Boiler No.

When made

Brake Horse Power 2 x 1750

Owners

Port belonging to

Nom. Horse Power as per Rule 2 x 428

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Type of Engines 2 off Vertical Diesel Oil Engines

2 or 4 stroke cycle 4 Single or double acting Single

Minimum pressure in cylinders 35 kg. per cm²

No. of cylinders 1 x 6

No. of cranks 2 x 6

Diameter of cylinders 740 mm = 29 1/8"

Length of stroke 1150 mm = 45 1/4"

Revolutions per minute 115

Mass of ignition

air compression

Kind of fuel used Crude oil (Flash point above 150°F)

Is there a bearing between each crank

yes

Span of bearing (Page 92, Section 2, par. 7 of Rules)

980 mm

Distance between centres of main bearings

500 mm

Is a flywheel fitted

yes

Diameter of crank shaft journals

as per Rule 442 mm

Diameter of crank pins

456 mm

Breadth of crank webs

as per Rule 586 mm

as fitted 990 mm

Thickness of ditto

as per Rule 247 mm

Diameter of flywheel shaft

as per Rule 441 mm

as fitted 456 mm

Diameter of tunnel shaft

as per Rule

as fitted

Diameter of thrust shaft

as per Rule 14 1/2"

as fitted 14 5/8"

Diameter of screw shaft

as per Rule

as fitted

Is the screw shaft fitted with continuous liner the whole length of the stern tube

yes

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 joints burned

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 no liners are fitted, is the shaft lapped or protected between the liners

yes

If without liners, is the shaft arranged to run in oil

yes

Is a gland fitted to stern tube

yes

Length of stern tube

yes

Diameter of propeller

yes

No. of blades

No. of blades

state whether moveable

Total surface

square feet

Method of reversing

Direct reversible

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

yes

Governor Burmeister & Wain

Thickens of cylinder liners

60 mm

Are the cylinders fitted with safety valves

yes

Means of lubrication

forced lubrication

Are the exhaust pipes and silencers water cooled or lagged with

The exhaust

conducting material or 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

The pipes are water cooled

and the silencers are lagged

The exhaust

The exhaust will be led up along the mast

yes

No. of cooling water pumps

3 for sea water

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

yes

In the vessel

No. of bilge pumps fitted to the main engines

none

Diameter of ditto

Stroke

yes

Can one be overhauled while the other is at work

yes

No. of auxiliary pumps connected to the main bilge lines

2 duplex

How driven Electromotors

No. of pumps plungers

8" Stroke 11"

No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room

Rotary ring pump

Main holds, etc.

yes

No. of ballast pumps

1 off

How driven by Electro motor

Sizes of pumps 150 tons capacity

yes

Is the ballast pump fitted with a direct suction from the engine room bilges

yes

State size

yes

Is a separate auxiliary pump suction fitted in

yes

Engine Room and size

yes

Are all the bilge suction pipes fitted with roses

yes

Are the roses in Engine Room always accessible

yes

Are the sluices on Engine Room bulkheads always accessible

yes

Are all connections with the sea direct on the skin of the ship

yes

Are they valves or cocks

yes

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

yes

Are the discharge pipes above or below the deep water line

yes

Are they each fitted with a discharge valve always accessible on the plating of the vessel

yes

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times

yes

Are the bilge suction pipes, cocks and valves arranged so as to prevent any

yes

Communication between the sea and the bilges

yes

Is the screw shaft tunnel watertight

yes

Is it fitted with a watertight door

yes

Is the vessel

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

No. of main air compressors

2 off

No. of stages

3

Diameters

LP = 750 mm

Stroke 350 mm

Driven by the main engines

No. of auxiliary air compressors

1 off

No. of stages

2

Diameters

LP = 460 mm

Stroke 260 mm

Driven by an electromotor

No. of small auxiliary air compressors

1 off

No. of stages

2

Diameters

LP = 106 mm

Stroke 80 mm

Driven by a direct coupled steam engine

No. of scavenging air pumps

yes

Diameter

yes

Stroke

yes

Driven by

yes

Diameter of auxiliary Diesel Engine crank shafts

as per Rule 166 mm

as fitted 170 mm

Are the air compressors and their coolers made so as to be easy of access

yes

III RECEIVERS:—No. of high pressure air receivers

2 off

No. of stages

3

Diameters

LP = 750 mm

Stroke 350 mm

Driven by the main engines

No. of auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 460 mm

Stroke 260 mm

Driven by an electromotor

No. of small auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 106 mm

Stroke 80 mm

Driven by a direct coupled steam engine

No. of scavenging air pumps

yes

Diameter

yes

Stroke

yes

Driven by

yes

Diameter of auxiliary Diesel Engine crank shafts

as per Rule 166 mm

as fitted 170 mm

Are the air compressors and their coolers made so as to be easy of access

yes

IV RECEIVERS:—No. of high pressure air receivers

2 off

No. of stages

3

Diameters

LP = 750 mm

Stroke 350 mm

Driven by the main engines

No. of auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 460 mm

Stroke 260 mm

Driven by an electromotor

No. of small auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 106 mm

Stroke 80 mm

Driven by a direct coupled steam engine

No. of scavenging air pumps

yes

Diameter

yes

Stroke

yes

Driven by

yes

Diameter of auxiliary Diesel Engine crank shafts

as per Rule 166 mm

as fitted 170 mm

Are the air compressors and their coolers made so as to be easy of access

yes

V RECEIVERS:—No. of high pressure air receivers

2 off

No. of stages

3

Diameters

LP = 750 mm

Stroke 350 mm

Driven by the main engines

No. of auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 460 mm

Stroke 260 mm

Driven by an electromotor

No. of small auxiliary air receivers

1 off

No. of stages

2

Diameters

LP = 106 mm

Stroke 80 mm

Driven by a direct coupled steam engine

No. of scavenging air pumps

yes

Diameter

yes

Stroke

yes

Driven by

yes

Diameter of auxiliary Diesel Engine crank shafts

as per Rule 166 mm

as fitted 170 mm

Are the air compressors and their coolers made so as to be easy of access

yes

VI RECEIVERS:—No. of high pressure air receivers

2 off

No. of stages

3

Diameters

LP = 750 mm

Stroke 350 mm

Driven by the main engines

No. of auxiliary air receivers

1 off

No. of stages

2

Diameters

If so, is a report now forwarded?

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
COVERS Water Passage	14/9, 14/10, 8/11 1918	15 lbs. per sq"	30 lbs. per sq"	R	
JACKETS	5/4 & 15/4 1919	15 — " —	30 — " —	"	
PISTON WATER PASSAGES	22/4 & 25/4 "	15 — " —	30 — " —	"	
MAIN COMPRESSORS—1st STAGE					
2nd " { water jackets	15/10 & 4/12 1918	15 — " —	30 — " —	"	
3rd " { " "	10/2 1919	15 — " —	30 — " —	"	
3rd " { air space	4/2 1919.	60 Atm.	90 Atm.	R	
AIR RECEIVERS—STARTING	2/6 & 10/6 1919.	25 Atm.	39 Atm.	HP = 39 Atm. WP = 25 " & 2.6.17. C.K.	HP = 39 Atm. WP = 25 " & 2.6.17. C.K.
INJECTION	13/9.18	65 "	130 "	LLOYD TEST 130 Atm. Working pressure 65	
AIR PIPES	10/2 1919	60 "	90 "	No 1674 195, 1676, 1677, 1678, 1679 & 1681 Skm. 13	
FUEL PIPES from pumps to fuel valves	8/11 1918	75 Atm.	150 Atm.	R	
FUEL PUMPS	7/10 1918 Suction space delivery "	1 Atm. 75 "	10 Atm. 150 —	"	
SILENCER					
WATER JACKET	5/7 1918	15 lbs. per sq"	30 lbs per sq"		
SEPARATE FUEL TANKS	10/6 & 23/6 1919.	"	10 lbs per sq"		

SPARE GEAR

✓ As per accompanying list.

The foregoing is a correct description,

Actieselskabet
Burmeister & Wains Maskin- og Skibsbyggeri,
København

Manufacturer.


During progress of work in shops - -	5, 10, 16, 24 April 7, 13, 21 May 4, 7, 11 June 5, 29 July 7, 12 Aug 2, 4, 13, 14 Sept 5, 7, 14 Oct. 8 Nov. 4, 14 Dec. 1918. 4, 8, 20 Jan. 1, 10, 19 Feb. 5, 26, 31 March, 5, 28, 29
During erection on board vessel - - -	5, 12 May. 2, 10, 13 June, 2, 9, 11 July. 6, 20 Aug. 12 Sept. 1 Nov., 3, 12 Dec. 1919. 31 Jan. 20 Feb. 10 May 1920.
Total No. of visits	16 1/2 24 1/2 13

Total No. of visits		7/6, 12/8, 14/7, 8/11, 18		5/7, 3/9, 11/7, 4/10, 9/10, 18		13/7, 8/10, 18, 8/16, 22/4,		16/4, 24/4, 13/	
Date of Examination of principal parts—Cylinders		5/7, 15/4, 20/8, 17, 17/5, 20		Covers		20/4, 13/6, 14/4, 17, 1/6, 20		Pistons	
Crank shaft		7/6, 21/7, 9/10, 18		Tunnel shafts		Screw shaft		Propeller	
Thrust shaft		7/6, 21/7, 9/10, 18		Tunnel shafts		Screw shaft		Propeller	
Engines holding down bolts		Completion of pumping arrangements		Engines tried under working conditions.		Screw shaft and propeller		Identification Marks on Do.	
Completion of fitting sea connections		Stern tube		Screw shaft and propeller		Identification Marks on Do.		Identification Marks on Do.	
Material of crank shaft		S.M.I. Steel		Material of thrust shafts		S.M.I. Steel		Material of tunnel shafts	
Identification Mark on Do.		No. 5581-12		Material of screw shafts		Identification Marks on Do.		Identification Marks on Do.	
Material of tunnel shafts		Identification Marks on Do.		Material of screw shafts		Identification Marks on Do.		Identification Marks on Do.	

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, site name of vessel Sprika

General Remarks (State quality of workmanship, opinions as to class, etc.) In accordance with the Rules for Special Survey we have examined the material and workmanship from the commencement of construction until the trial of the main auxiliary engines, main & auxiliary air compressors in full power working condition on the testing bench and found it good in every respect. The material used in the construction of the engines and the air receivers has been tested as required by the Rules as per certificates produced. The dimensions are as specified and in accordance with the Rules and the plans approved for Burmeister & Wain's Yard No. 314, Afrika. - please see London letter E dated 24th Jan. 1917 and 30th May 1918.

Recommend the vessel's machinery to have notation of  L.M.C - when the machinery has been fitted onboard. -

The amount of Entry Fee ... £	:	:	When applied for,
Special ...	£ 10 20	00	12 5 19 20
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	18 5 19 20

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping

Lloyd's Register
Foundation