

No. 2244

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2254 No. in Register Book 3638

" "
S.S. F. V. MASSEY

Makers of Engines Smiths Dock Co Ltd

Works No. 339

Makers of Main Boilers Blair No (1926) Ltd

Works No. 6192

Makers of Donkey Boiler ✓

Works No. 2021

MACHINERY.

Lloyd's Register
Foundation

14
002577-002582-0230

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

8th November 1929

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the ~~Single Triple~~ ~~Twin Quadruple~~ Screw Steamers.

"Y. V. Massey"

Official No. 160420 Port of Registry

Middlesbrough

Registered Owners

The Yate Transit Co. Ltd.

Engines Built by

Synthe Works Ltd.

at

South Bank-on-Sea.

Main Boilers Built by

Blair & Co (1926) Ltd.

at

Stockton-on-Sea.

Donkey

at

Date of Completion

4-29.

First Visit

19-11-28

Last Visit

16-4-29

Total Visits

40

© 2021

Lloyd's Register
Foundation

RECIPROCATING ENGINES.

Works No. **339** No. of Sets **1** Description **Triple expansion****D.C. 3 crks**No. of Cylinders each Engine **3** No. of Cranks **3**Diams of Cylinders **15" - 25" - 40"** Stroke **33"**Cubic feet in each L.P. Cylinder **24"**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

" " " each Receiver?

Type of H.P. Valves,

1st I.P. "

2nd I.P.,

L.P. "

" Valve Gear

" Condenser

Cooling Surface sq. ft.

Diameter of Piston Rods (plain part)

Screw part (bottom of thread)

Material "

Diam. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diam. over Thrd.

Thrds. per inch

Material

" Crank Pin " "

" Main Bearings

Lengths

" Bolts in each

Diam. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine

Diam.

No. of Metal Chocks

Are the Engines bolted to the Tank Top or to a Built Seat?

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside?

If not, how are they fitted?

Connecting Rods, Forged by **Brown Bros.**

Piston " "

Crossheads

Connecting Rods, Finished by **Smiths & Co.**

Piston " "

Crossheads,

Date of Harbour Trial

" Trial Trip

Trials run at

Were the Engines tested to full power under Sea-going conditions? **yes**

If so, what was the I.H.P.?

Pressure in 1st I.P. Receiver, **60** lbs., 2nd I.P.,

Speed on Trial

If the Conditions on Trial were such that full power records were not obtained give the following estimated

data:—

Builders' estimated I.H.P.

Estimated Speed

Revs. per min.



© 2021

Lloyd's Register
Foundation

TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Diam. of 1st Reduction Pinion	}	Width	Pitch of Teeth
" 1st " Wheel			

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion	}	Width	Pitch of Teeth
" 2nd " Wheel			

Estimated Pressure per lineal inch

Revs. per min. of Generators at Full Power

"	"	Motors	"
"	"	1st Reduction Shaft	
"	"	2nd "	
"	"	Propellers at Full Power	

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial	Knots.	Propeller Revs. per min.	S.H.P.
----------------	--------	--------------------------	--------

Makers of Turbines

" Generators

" Motors

" Reduction Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.



© 2021

Lloyd's Register
Foundation

PUMPS, ETC.

No. of Air Pumps Diar. Stroke

Worked by Main or Independent Engines?

No. of Circulating Pumps Diar. Stroke

Type of "

Diar. of " Suction from Sea

Has each Pump a Bilge Suction with Non-return Valve? Diar.

What other Pumps can circulate through Condenser?

No. of Feed Pumps on Main Engine Diar. Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

Can one Pump be overhauled while the others are at work?

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine Diar. Stroke

Can one Pump be overhauled while the others are at work?

No. of Independent Bilge Pumps

What other Pumps can draw from the Bilges?

Are all Bilge Suctions fitted with Roses?

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges?

Are all Sea Connections made with Valves or Cocks next the Ship's sides?

Are they placed so as to be easily accessible?

Are the Discharge Chests placed above or below the Deep Load Line?

Are they fitted direct to the Hull Plating and easily accessible?

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges on the Outside?

BOILERS

Work No.

No. of Boilers

Single or Double-ended

No. of Furnaces in each

Type of Furnace

Date when Plan approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Drafting

Can Boilers be worked separately?

Material of Plates

Stay Bars

Rivets

Furnaces

Greatest Internal Diam. of Boilers

Length

© 2021

Lloyd's Register
Foundation

BOILERS.

Works No.

No. of Boilers

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when Plan approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Draught

Can Boilers be worked separately?

Makers of Plates

" Stay Bars

" Rivets

" Furnaces

Greatest Internal Diam. of Boilers

" " Length "

Square Feet of Heating Surface each Boiler

" " Grate " "

No. of Safety Valves each Boiler

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler

" Test Cocks

Rule Diam.

Actual

No. of Water Gauges

" Salinometer Cocks

C. 192.
Cylindrical multitubular
Single.

Blighton

180 lbs.

320 "

13-3-29

12-4-29

185 lbs.

12-4-29

185 lbs.

C.A.

James Dunlop & Co. Ltd.
D. Colville & Sons Ltd.

Blair & Co.
Broomsides, St. Lb. @

10'-4 3/8"

10'-9 15/16"

1128 sq

33.8 sq

2

2 1/2

yes.

2

3

1

1

Are the Water Gauges fitted direct to the boiler shells or mounted on Piping?

Are the Water Gauges fitted direct to the boiler shells or connected by Piping?

Are these Pipes connected to Boilers by Cocks or Valves?

Are Blow-off Cocks or Valves fitted on Boiler Shells?

No. of Stations of Steam Fitting in each Boiler

There is each Station

Thickness of Shell Plates (Approximate)

" " " " in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Joints Bolt or Lap Joints?

Are the Joint Groups Single or Double?

Are the Double Joint Groups of equal width?

Thickness of outside Joint Groups

" " "

Are Longitudinal Joints Hand or Machine Riveted?

Are they Single, Double, or Triple Riveted?

No. of Rivets in a Joint

Diam. of Rivet Holes

No. of Rows of Rivets in Centre Circumferential Joints

Are these Joints Hand or Machine Riveted?

Diam. of Rivet Holes

No. of Rows of Rivets in Flange Joint Circumferential Joints

Are these Joints Hand or Machine Riveted?

Diam. of Rivet Holes

No. of Rows of Rivets in Flange Joint Circumferential Joints

Are these Joints Hand or Machine Riveted?

Diam. of Rivet Holes

Lloyd's Register

Foundation

Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars?

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes?

Are these Pipes connected to Boilers by Cocks or Valves?

Are Blow-off Cocks or Valves fitted on Boiler Shells?

No. of Strakes of Shell Plating in each Boiler

Plates in each Strake

Thickness of Shell Plates Approved

in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

inside

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

Diam. of Rivet Holes

Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diam. of Rivet Holes

Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diam. of Rivet Holes

Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings



© 2021

Lloyd's Register
Foundation

Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diam. " " " " Approved Threads per Inch

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diam. and Thickness of Loose Washers on End Plates

" " Riveted " "

Width " " Doubling Strips "

Thickness of Middle Back End Plates Approved

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " "

Diam. of Stays Approved Threads per Inch

" " " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces



© 2021

Lloyd's Register
Foundation

Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" Plain "

Thickness of Stay Tubes

" Plain "

External Diar. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Tops

"Same as inside wall"

Threads per Inch

Diar. of Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Sides Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Diag. " Approved " " "

" " in Boilers

Material "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diag. " Approved " " "

" " in Boilers

Material "

Are all Screwed Stays fitted with Nuts at C.C.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " Centre

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

© 2021
Lloyd's Register
Foundation



Diam. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Are all Screwed Stays fitted with Nuts inside C.O.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS

No. of Boilers
Type
Greatest Diam.
Height
Height of Boiler Crown above Fire Grate
Area Boiler Crown Flat or Dished?
Internal Radius of Dished Ends
Description of Stays in Boiler Crown
Diam. of Rivet Hole
Pitch
Height of Rivet Crown above Fire Grate
Area Rivet Crown Flat or Dished?
External Radius of Dished Crown
Thickness of Plates
Diam.
Material
External Diam. of Rivet at Top
Bottom
Thickness
No. of Water Tubes
Internal of Water Tubes
Size of Manhole in Shell
Dimensions of Connecting Pipe
Heating Surface, each Boiler
Grate Surface

SUPERHEATERS

Description of Superheater
Where situated?
Which Boilers are connected to superheater?
Can superheaters be shut off while Boilers are working?
No. of Safety Valves on each superheater
Date of last test
Date when safety Valves set
Pressure on Valves



© 2021

Lloyd's Register
Foundation

VERTICAL DONKEY BOILERS.

No. of Boilers	Type		
Greatest Int. Diar.		Height	
Height of Boiler Crown above Fire Grate			
Are Boiler Crowns Flat or Dished?			
Internal Radius of Dished Ends		Thickness of Plates	
Description of Seams in Boiler Crowns			
Diar. of Rivet Holes	Pitch	Width of Overlap	
Height of Firebox Crowns above Fire Grate			
Are Firebox Crowns Flat or Dished?			
External Radius of Dished Crowns		Thickness of Plates	
No. of Crown Stays	Diar.	Material	
External Diar. of Firebox at Top	Bottom	Thickness of Plates	
No. of Water Tubes	Ext. Diar.	Thickness	
Material of Water Tubes			
Size of Manhole in Shell			
Dimensions of Compensating Ring			
Heating Surface, each Boiler		Grate Surface	

SUPERHEATERS.

Description of Superheaters

Where situated?

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working?

No. of Safety Valves on each Superheater

Diar.

Are " " fitted with Easing Gear?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

MAIN STEAM PIPES.



© 2021

Lloyd's Register
Foundation

MAIN STEAM PIPES.

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

4.
copper.
S. D.
3 1/2"
y. w. g.
braked.
9-4-29
400 lbs.

LIST OF CONDENSERS

No. of Lengths
Material
Brazed, Welded or Seamless
Internal Diam.
Thickness
How are Flanges secured?
Date of Hydraulic Test
Test Pressure

FEED WATER HEATERS

No. of Lengths
Material
Brazed, Welded or Seamless
Internal Diam.
Thickness
How are Flanges secured?
Date of Hydraulic Test
Test Pressure

FEED WATER FILTERS

No. of Lengths
Material
Brazed, Welded or Seamless
Internal Diam.
Thickness
How are Flanges secured?
Date of Hydraulic Test
Test Pressure



© 2021

Lloyd's Register
Foundation

No. of Top End Bolts.	No. of Bot. End Bolts.	No. of Cylinder Cover Studs
" Coupling Bolts	" Main Bearing Bolts	" Valve Chest "
" Junk Ring Bolts	" Feed Pump Valves	" Bilge Pump Valves
" H.P. Piston Rings	" L.P. Piston Rings	" L.P. Piston Rings
" " Springs	" " Springs	" " Springs
" Safety Valve "	" Fire Bars	" Feed Check Valves
" Piston Rods	" Connecting Rods	" Valve Spindles
" Air Pump Rods	" Air Pump Buckets	" Air Pump Valves
" Ctr. "	" Ctr. "	" Ctr. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts	" Propellers	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

REFRIGERATORS.

No. of Machines

Capacity of each

Makers

Description

No. of Steam Cylinders, each Machine

No. of Compressors

No. of Cranks

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines
or Independently

System of Refrigeration

Insulation

Are Brine and other Regulating Valves placed so as to be accessible without entering the Insulated Spaces?

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage?

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions

RESULTS OF TRIALS.

Articles of Spare Gear for Refrigerating Plant carried on board:—

© 2021

Lloyd's Register
Foundation

to each
lamp
No. of
lamps
to be
supplied
by
each
dynamo
No. of
lamps
to be
supplied
by
each
dynamo
No. of
lamps
to be
supplied
by
each
dynamo
No. of
lamps
to be
supplied
by
each
dynamo

Description

No. of lamps to be supplied by each dynamo

Description of dynamo and of the system of lighting to be adopted

No. of lamps to be supplied by each dynamo

Description of dynamo

No. of lamps to be supplied by each dynamo

Description of dynamo and of the system of lighting to be adopted

A table of space gear for distribution of light given on board.

No. of lamps to be supplied by each dynamo

Description of dynamo and of the system of lighting to be adopted

No. of lamps to be supplied by each dynamo

Description of dynamo

ELECTRIC LIGHTING.

Installation Fitted by

R. Pickersills Sons Ltd

No. and Description of Dynamos

1. Compound wound

Makers of Dynamos

Sunderland Forge & Co Ltd

Capacity

1/2 H.P. Amps, at 110 Volts, 350 Revs. per Min.

Current Alternating or Continuous

Continuous.

Single or Double Wire System

Double.

Position of Dynamos

Starting Platform.

Main Switch Board

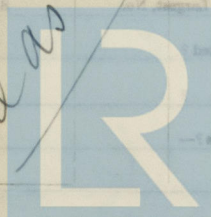
No. of Circuits to which Switches are provided on Main Switch Board

4

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
----------	-------------------	---------------	-------------------------	--------------------	------------------	----------------------------	---------------------------------

"I read this all
as well as head clips hall"



© 2021

Lloyd's Register Foundation

Total No. of Lights

No. of Motors driving Fans, &c.

No. of Heaters

Current required for Motors and Heaters

Positions of Auxiliary Switch Boards, with No. of Switches on each

Are Out-lets fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

On Aux. " " each Auxiliary Circuit

Wherever a Cable is reduced in size

To each Lamp Circuit

To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted

Are the Fuses of Standard Sizes?

Are all Switches and Out-lets constructed of Non-inflammable Material?

Are they placed so as to be always and easily accessible?

Smallest Single Wire used, No. S.W.G., Largest, No. S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

" " Saloons, State Rooms, &c., " ?

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

Are all Joints in Cables properly soldered and thoroughly insulated so that the efficiency of the Cables

is unimpaired?

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces?

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface?

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously affected by them?

Have Tests been made to prove that this condition has been satisfactorily fulfilled?

Has the Insulation Resistance over the whole system been tested?

What does the Resistance amount to?

Ohms,

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter

Date of Trial of complete Installation 16-4-29. Duration of Trial 6 hrs

Have all the requirements of Section 42 been satisfactorily carried out? Yes.



© 2021

Lloyd's Register
Foundation

GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the

Approved Plans? *yes.*

If not, give details of the points of difference, and state when these were sanctioned by the Chief

Surveyor.

Have the Materials used in the Construction of Engines and Boilers, so far as could be seen, sound and

trustworthy? *yes.*

Is the Workmanship throughout thoroughly satisfactory? *yes.*

The above correctly describes the Machinery of the S.S.

as ascertained by ^{me} from personal examination

What special provision is provided for the following cases?

(1) Machinery exposed to Heat or Friction

(2) Machinery exposed to Corrosion

(3) Machinery exposed to Vibration

(4) Machinery exposed to Shock

(5) Machinery exposed to Wear

(6) Machinery exposed to Rust

(7) Machinery exposed to Oil

(8) Machinery exposed to Dust

(9) Machinery exposed to Noise

(10) Machinery exposed to Vibration

(11) Machinery exposed to Shock

(12) Machinery exposed to Wear

(13) Machinery exposed to Rust

(14) Machinery exposed to Oil

(15) Machinery exposed to Dust

(16) Machinery exposed to Noise

(17) Machinery exposed to Vibration

(18) Machinery exposed to Shock

(19) Machinery exposed to Wear

(20) Machinery exposed to Rust

(21) Machinery exposed to Oil

(22) Machinery exposed to Dust

F. V. MASSEY

J. D. Stephenson

Engineer Surveyor to the British Corporation for the
Survey and Registry of Shipping.

Fees—

MAIN BOILERS.		£	s.	d.
H.S.	<i>2256</i> Sq. ft.	:	:	:
G.S.	<i>674.6</i> "	:	:	:
DONKEY BOILERS.				
H.S.	Sq. ft.	:	:	:
G.S.	"	:	:	:
		£	:	:
ENGINES.				
L.P.C.	<i>24</i> Cub. ft.	:	:	:
		£	:	:
Testing, &c.	:	:	:
		£	:	:
Expenses	:	:	:
Total ...		£	:	:

It is submitted that this Report be approved,

John Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *13th November 1929.*

Fees advised

Fees paid



© 2021

Lloyd's Register
Foundation
Secretary.

© 2021

Lloyd's Register
Foundation



© 2021

Lloyd's Register
Foundation



© 2021

Lloyd's Register
Foundation