

No. 2301

THE BRITISH CORPORATION FOR THE SURVEY
AND

REGISTRY OF SHIPPING.

N/N TORONPOC,

Report No. 2264 No. in Register Book 3651

S.S. "Saracen"

Makers of Engines Wallsend Slipway & Engloy.

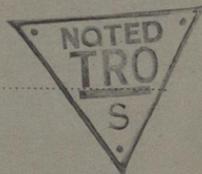
Works No. 887.

Makers of Main Boilers Wallsend Slipway & Engloy.

Works No. 887.

Makers of Donkey Boiler None.

Works No. -



MACHINERY.



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003131-003137-0119

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office *24th February 1930*

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Twin~~ ^{Single Triple} Screw "Baracou".

Official No. *161523* Port of Registry *Newcastle*

Registered Owners *Inland Line Ltd.*
Grain Exchange, Winnipeg.

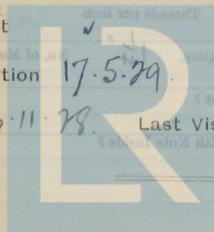
Engines Built by *The Wallsend Slipway & Englopy.*
at *Wallsend.*

Main Boilers Built by *The Wallsend Slipway & Englopy.*
at *Wallsend.*

Donkey .. *None.*

Date of Completion *17.5.29*

First Visit *26.11.29* Last Visit *17.5.29* Total Visits ..



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RECIPROCATING ENGINES.

Works No. 887. No. of Sets One Description Triple expansion
Surface condensing.

No. of Cylinders each Engine Three. No. of Cranks Three.
Diars. 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.? Yes.

" " each Receiver? Yes.

Type of H.P. Valves, Piston Valve.

1st I.P. " Eric Valve.

2nd I.P., "

L.P. " Doubleported slide.

" Valve Gear Stephenson Link.

" Condenser Circular Two flow. Cooling Surface 700 sq. ft.

Diameter of Piston Rods (plain part) Screwed part (bottom of thread)

Material "

Diar. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diar. over Thrd.

Thrds. per inch

Material

" Crank Pin " "

" "

" "

" "

" Main Bearings

Lengths

" Bolts in each

Diar. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine 61

Diar.

1 1/4"

No. of Metal Checks 61.

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

Langley Forge. Langley.

Piston " "

Crossheads,

Connecting Rods, Finished by

Wallsend Slipway & Engloy.

Piston " "

Crossheads,

Date of Harbour Trial 11.5.29.

" Trial Trip 17.5.29.

Trials run at Off River Tyne.

Were the Engines tested to full power under Sea-going conditions? Yes.

If so, what was the I.H.P.? 884.

Revs. per min. 93-75

Pressure in 1st I.P. Receiver, 70.0 lbs., 2nd I.P., ✓ lbs., L.P., 10.5 lbs., Vacuum, 25.4 ins.

Speed on Trial 9.08.

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

data:—

Builders' estimated I.H.P. ✓

Revs. per min. ✓

Estimated Speed ✓

This machinery is a duplicate of that numbered 1324 built by Swan Hunter and fitted into No 1369 s/s "John O. McWilliam" building at the same time, the details of which are similar unless otherwise stated.



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TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of I.P. No. of L.P. No. of Astern

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

Is Single or Double Reduction Gear employed?

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

Estimated Pressure per lineal inch

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

Estimated Pressure per lineal inch

Revs. per min. of H.P. Turbines at Full Power S.H.P.

" " I.P. " " II the conditions on trial were such that full power was not reached

" " L.P. " " date:

" " 1st Reduction Shaft

" " 2nd "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

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

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

No. of Turbine-Generator Sets

Types of Turbines employed

Description of Generators

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

Is Single or Double Reduction Gear employed?

No. of Motors driving Propeller Shafts

Description of Motors

Estimated Pressure per lineal inch

Revs. per min. of H.P. Turbines at Full Power

" " I.P. " " II the conditions on trial were such that full power was not reached

" " L.P. " " date:

" " 1st Reduction Shaft

" " 2nd "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

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

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by



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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

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

Estimated Pressure per lineal inch

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

Estimated Pressure per lineal inch

Revol. 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 Revol. per min. S.H.P.

Makers of Turbines

" Generators *Bill*

" Motors

" Reduction Gear

Turbine Spindles forged by *Same as propellers*

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

sketch of crank shaft

multi-center frame base

as in sketch



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SHAFTING.

Are the Crank Shafts Built or Solid?

Built.

No. of Lengths in each

Angle of Cranks

Diar. by Rule

Actual

In Way of Webs

" of Crank Pins

Length between Webs

Greatest Width of Crank Webs

Thickness

Least

Diar. of Keys in Crank Webs

Length

" Dowels in Crank Pins

Length

Screwed or Plain

No. of Bolts each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Greatest Distance from Edge of Main Bearing to Crank Web

Type of Thrust Blocks

Multi-collar horse shoe.

No. " Rings

Diar. of Thrust Shafts at bottom of Collars

No. of Collars

" " Forward Coupling

At Aft Coupling

Diar. of Intermediate Shafting by Rule

Actual

No. of Lengths

No. of Bolts, each Coupling

Diar. at Mid Length

Diar. of Pitch Circle

Diar. of Propeller Shafts by Rule

Actual

At Coupling

Are Propeller Shafts fitted with Continuous Brass Liners?

Diar. over Liners

Length of After Bearings

Of what Material are the After Bearings composed?

Are Means provided for lubricating the After Bearings with Oil?

" " to prevent Sea Water entering the Stern Tubes?

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

*Same as 1/2 Kingdoe
Engine No 1236. built 1927.*



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No. of Blades each Propeller

Pitted or Solid?

Material of Blades

Boss

Diam. of Propellers

Pitch

Surface (each

S. ft.)

Coefficient of Displacement of Vessel at $\frac{3}{4}$ Moulded Depth

Crank Shafts Forged by

Langley Forge.

Material

Steel.

,, Pins ,,

,, Webs ,,

Thrust Shafts ,,

Interned ,,

Propeller ,,

Crank ,, Finished by

Wallsend Slipway.

Thrust ,,

Interned ,,

Propeller ,,

STAMP MARKS ON SHAFTS.

Crank Shaft. B.C. 210. O.H.M. J.L. 22/3/29

Thrust shaft. B.C. 200. O.H.M. J.L. 22/3/29

Propeller shaft B.C. 202. O.H.M. J.L. 22/3/29

SKETCH OF PROPELLER SHAFT.

Same as $\frac{1}{2}$ Kingdoc.
 Engine No 1236.
 Built 1927.



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BOILERS

Works No. 887.

No. of Boilers Two Type Multitubular Cylindrical.

Single or Double-ended Single-ended.

No. of Furnaces in each Two.

Type of Furnaces Deighton.

Date when Plan approved 7.2.29.

Approved Working Pressure 180 lbs.

Hydraulic Test Pressure 320 " Ballast pump.

Date of Hydraulic Test 11.4.29.

„ when Safety Valves set 11.5.29.

Pressure at which Valves were set 185 lbs.

Date of Accumulation Test None taken

Maximum Pressure under Accumulation Test ✓

System of Draught Howden's Forced draught.

Can Boilers be worked separately? Yes.

Makers of Plates Steel Coy of Scotland.

„ Stay Bars „

„ Rivets Rivet, bolt & nut Coy.

„ Furnaces Deighton. Flue + Tube Coy. @

Greatest Internal Diam. of Boilers

„ „ Length „

Square Feet of Heating Surface each Boiler

„ „ Grate „ „

No. of Safety Valves each Boiler Rule Diam. Actual

Are the Safety Valves fitted with Easing Gear?

No. of Pressure Gauges, each Boiler No. of Water Gauges

„ Test Cocks „ „ Salinometer Cocks



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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



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Thickness of End Plates in Steam Space Approved

Are the Water Stays in Boilers

Pitch of Steam Space Stays

Diar. of Stays Approved Threads per Inch

Material of Stays in Boilers

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

Are the Washers Riveted

Width of Doubling Strips

Are the Bolt Heads Tight or Loose?

Thickness of Middle Back End Plates Approved

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at

Diar. of Stays Approved Threads per Inch

Material of Stays in Boilers

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in

Thickness of Front End Plates at Bottom Approved

No. of Longitudinal Stays in Spaces between Furnaces

Thickness of Front Tube Plates Approved

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

Pitch of Stay Tubes in Back Tube Plates

Thickness of Stay Tubes

Material of Tubes

Thickness of Front Plates Approved

Thickness of Back Plates Approved

Thickness of Front Plates Approved

Thickness of Back Plates Approved

Thickness of Front Plates Approved

Thickness of Back Plates Approved

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Thickness of Front Plates Approved



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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

Threads per Inch

Diar. of Stay Tubes Approved

.. .. in Boilers

Material

Thickness of Combustion Chamber Ends Approved

.. .. in Boilers

Pitch of Screwed Stays in C.C. Ends

Threads per Inch

Diar. of Stay Tubes Approved

.. .. in Boilers

Material

Thickness of Combustion Chamber Ends Approved

.. .. in Boilers

Pitch of Screwed Stays in C.C. Ends

Threads per Inch

Diar. of Stay Tubes Approved

.. .. in Boilers

Material

Are all screw stay fitted with Nuts both C.C.?

Thickness of Combustion Chamber Ends

No. of doublings over each Tube



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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.C. Sides

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diam. " " Approved Threads per Inch

" " " in Boilers

Material " "

Are all Screwed Stays fitted with Nuts inside 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

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS

No. of Boilers
Type
Greatest Int. Diam.
Height of Boiler Crown above the Grate
Are Water-Covering Pipes or Pipes?
Internal Diameter of Jacket Flues
Description of Grates in Boiler Crown
Pitch of Water Tubes
Height of Smoke Crown above the Grate
Are Pressure Covers Fitted on Jacket?
External Diameter of Jacket Crown
Type of Crown Stays
Internal Diam. of Jacket at Top
Size of Water Tubes
Internal of Water Tubes
Size of Jackets in Jacket
Dimensions of Combustion Ring
Heating Surface, each Boiler
Jacket Surface

SUPERHEATERS

How situated?
What boiler are they fitted to?
Can superheaters be used on water boilers?
Type of boiler?
Date when fitted?
Pressure on Water



MAIN STEAM PIPES.

No. of Lengths

3.

Material

Steel.

Brazed, Welded or Seamless

Seamless.

Internal Diam.

3½"

Thickness

¼"

How are Flanges secured?

Screwed.

Date of Hydraulic Test

3-5-79.

Test Pressure

540 lbs/sq"

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

SPINNING ROTATORS.

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



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

Installation fitted by *Wm. Hunter & Co. Ltd.*
 No. and Description of Dynamos *See company's drawing*
 Make of Dynamos *General Electric Co. Ltd.*
 Capacity " *110 Volts 380 Amps per Min.*
 Current Alternating or Continuous *Continuous*
 Single or Double Wire System *Double wire*
 Location of Dynamos *In steering engine platform*
 " Main Switch Board *In lower platform starboard side*
 No. of Circuits to which switches are provided on Main Switch Board *10*
 Particulars of these Circuits:— *10*

Material	Insulation	Conductivity	Current	Size	Current	Particulars	Number	Location
Are Out-outs 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-outs 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? *yes*

What does the Resistance amount to? *400,000* Ohms.

Is the Installation supplied with a Voltmeter? *yes*

" " " an Ampere Meter *yes*

Date of Trial of complete Installation *11.5.29* Duration of Trial *6 hours.*

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



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. *✓*

Are 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. *"Baraceni"*

as ascertained by *me* from personal examination

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

Fees—

	£	s.	d.
MAIN BOILERS.			
H.S.	Sq. ft.	:	:
G.S.	"	:	:
DONKEY BOILERS.			
H.S.	Sq. ft.	:	:
G.S.	"	:	:
	£	:	:
ENGINES.			
L.P.O.	Cub. ft.	:	:
	£	:	:
Testing, &c. ...		:	:
	£	:	:
Expenses ...		:	:
Total ...	£	:	:

It is submitted that this Report be approved,

Jas Barr for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *23rd December 1929*



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 Foundation Secretary.

Fees advised

Fees paid



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