

No. 2300

X

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 2266 No. in Register Book 3650  
COTEAUDOC

EX. " "   
S.S. "Dania".

Makers of Engines Wallsend Slipway & Eng Coy Ltd.

Works No. 886.

Makers of Main Boilers Wallsend Slipway & Eng Coy Ltd.

Works No. 886.

Makers of Donkey Boiler None.

Works No. ✓

MACHINERY.



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004300-004307-0086



No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office 24<sup>th</sup> February 1930

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the <sup>Single Triple</sup> ~~Double~~ Screw Steamer "Damia"

Official No. 161522 Port of Registry Newcastle

Registered Owners Inland Lines Ltd.  
Winnipeg.

Engines Built by The Wallsend Shipway & Eng'g. Co.  
at Wallsend.

Main Boilers Built by The Wallsend Shipway & Eng'g. Co.  
at Wallsend.

Donkey "None"

Date of Completion 10.5.29.

First Visit 16.11.28 Last Visit 10.5.29. Total Visits

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## RECIPROCATING ENGINES.

Works No. 886. 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., Tric Valve.

2nd I.P.,

L.P., Double ported 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 "

Diars. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diars. over Thrd.

Thrds. per inch

Material

" Crank Pin " "

"

"

"

"

" Main Bearings

Lengths

" Bolts in each

Diars. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine

61.

Diars.

1 1/4"

No. of Metal Chocks

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. Wallsend.

Piston " "

Crossheads,

Date of Harbour Trial

3.5.29.

" Trial Trip

10.5.29.

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.?

774

Revs. per min.

92.0

Pressure in 1st I.P. Receiver,

72

lbs., 2nd I.P.,

✓

lbs., L.P.,

12.0

lbs., Vacuum, 75.5 ins.

Speed on Trial

8.96.

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. McKellar" building at the same time, the details of which are similar unless otherwise stated.



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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

Diam. of 1st Reduction Pinion

" 1st " Wheel

} Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

} Width

Pitch of Teeth

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

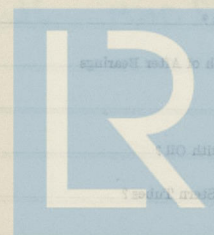
Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

## DESCRIPTION OF INSTALLATION.



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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

*no intermediate shafting.*

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 "King doc".**Engine No 1236. built 1927.*

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No. of Blades each Propeller

Titted or Solid?

Material of Blades

Boss

Diam. of Propellers

Pitch

Surface (each

S. ft.)

Coefficient of Displacement of Vessel at  $\frac{1}{2}$  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. BC. 211, O.H.M., J.L. 22/3/29

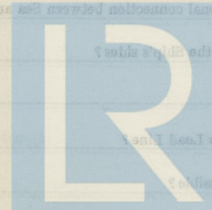
Thrust shaft. BC. 201, O.H.M., J.L. 22/3/29

Propeller shaft. BC. 202, O.H.M., J.L. 3/4/29

## SKETCH OF PROPELLER SHAFT.

Same as 9 $\frac{1}{2}$  "kingdoc".Engine No. 1236,  
Built. 1927.General service pump and  
injector

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## BOILERS

Works No. 886.

No. of Boilers Two. Type Multitubular Cylindrical.

Single or Double-ended Single-ended.

No. of Furnaces in each Two.

Type of Furnaces Deighton & Bonnicie - Simplex.

Date when Plan approved 7.2.29.

Approved Working Pressure 180 lbs.

Hydraulic Test Pressure 320 lbs. Ballast pump.

Date of Hydraulic Test 28.3.29.

„ when Safety Valves set 3.5.29.

Pressure at which Valves were set 185 lbs.

Date of Accumulation Test none taken.

Maximum Pressure under Accumulation Test ✓

System of Draught Howdens Forced. C.A. pump and

Can Boilers be worked separately? Yes

Makers of Plates Steel Coy of Scotland. R. & S.

„ Stay Bars „

„ Rivets Rivet Bolt + nut coy.

„ Furnaces Deighton Blue & 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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Thickness of End Plates in Steam Space Approved

Are the " " " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " " " Approved Threads per Inch

" " " " " " in Boilers

Material of " " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

Are the " " " " Riveted " "

Width " " " " Doubling Strips " "

Are the Bolt Straps Single or Double?

Thickness of Middle Back End Plates Approved

" " " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " " " "

Diar. of Stays Approved Threads per Inch

" " " " in Boilers

Material " " " "

Are Stays fitted with Nuts outside?

Are these Boilers Hand or Machine Driven?

Thickness of Back End Plates at Bottom Approved

" " " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " " "

Are the Rows of Stays in Back End Circumferential?

Thickness of Front End Plates at Bottom Approved

" " " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Thickness of Stay-securing Rings

Thickness of Stay-securing Rings

Are the " " " " " " 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 Diam. of Tubes

Material " " " "

Thickness of Furnace Plates Approved

" " " " " " in Boilers

External Diam. of Furnaces

Length between Tubes

Width of Combustion Chambers (Front to Back)

Thickness of " " " "

" " " " " " in Boilers

Pitch of Stay Tubes in Front Tubes



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Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Thickness of Front Tube Plates Approved

" " " " in Boilers

" " " " 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.O. Tops



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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.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  
Greatest Int. Diam.  
Height  
Height of Boiler Crown above Fire Grate  
Are Boiler Crowns Flat or Dished?  
Internal Radius of Dished Ends  
Description of Joists in Boiler Crowns  
Dist. of Rivet Heads  
Height of Rivet Crowns above Fire Grate  
Are Rivet Crowns Flat or Dished?  
External Radius of Dished Crowns  
Thickness of Plates  
Diam.  
No. of Crown Stays  
Internal Dist. of Rivets at Top  
No. of Water Tubes  
Material of Water Tubes  
Dist. of Manhole in Shell  
Dimensions of Compression Ring  
Heating Surface each boiler  
Gross Surface

## SUPERHEATERS

Description of Superheaters  
Where situated?  
Which flues are connected to superheaters?  
Can superheaters be cut off from the boiler?  
No. of Safety Valves on each superheater  
Date of Hydro Test  
Dimensions of Tubes



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No. of Boilers	Type	Height
Greatest Int. Diar.		
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

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## 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

3.  
Steel  
Seamless.

3 1/2"

1/4"

Screwed.

20.4.29.

540 lbs.

## SUPERHEATERS

## LIST OF EVAPORATORS.

Tons per Day

Type

No.

Same as

Test Pressure

Working Pressure

Engine No. 1324

Date of Test of Safety Valve under Steam

## FEED WATER HEATERS

①  
Type  
No. 10  
Working Pressure  
180 lbs.  
Test Pressure  
200 lbs.  
Date of Test  
10.3.29.  
with 450 lbs.

## FEED WATER FILTERS

①  
Type  
No. 10  
Working Pressure  
180 lbs.  
Test Pressure  
450 lbs.  
Date of Test  
4.3.29.



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## EVAPORATORS.

No.	Type	Tons per Day	
Makers	Date of Test		
Working Pressure	Test Pressure	Date of Test of Safety Valves under Steam	

## FEED WATER HEATERS.

No. *One* Type *Exhaust Steam Surface.* *@*  
Makers *Hocking.*  
Working Pressure *180 lbs.* Test Pressure *Cyl. 450 lbs.* Date of Test *10. 3. 29.*  
*Body 50*

## FEED WATER FILTERS.

No.	One.	Type	Pressure.	Size	(2)
Makers	HyWatson & Sons.				
Working Pressure	180 lb	Test Pressure	450 lb	Date of Test	4.3.29.

LIST OF DONKEY PUMPS.

Same as John O. McHellar.  
Culphine No 1324. Built 1979.

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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	" I.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
" Cir. "	" Cir. "	" Cir. "
" Crank Shafts	" Crank Pin Bushes	" Crosshead Bushes
" Propeller Shafts	" Propellers	" Propeller Blades
" Boiler Tubes	" Condenser Tubes	" Condenser Ferrules

OTHER ARTICLES OF SPARE GEAR:—

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## REFRIGERATORS.

No. of Machines	No. Capacity of each	No. of Cylinders or Shafts
Makers	Main Bearing Holes	Crank Shafts
Description	Piston Pump Valves	Crank Pump Valves
	I.P. Piston Rings	I.P. Piston Rings
	Springs	Springs
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		
	Air Pump Buckets	Air Pump Valves
	Oil	Oil
	Crank Shafts	Crankshaft Buckets
	Propeller Shafts	Propeller Shafts
	Roller Tables	Condenser Buckets

OTHER ARTICLES OF STAMP WORK—

### 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:—

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Swan Hunter & W.R. Ltd

One compound wound.

Sunderland Forge Engloy.

91. Amperes, at 110. Volts, 380 Revols. per Min.

Continuous.

Double-wire

On steering engine platform

On lower platform starb side

Yours

No. of Motors driving Fans, &amp;c. No. of Heaters

# Lloyd's Register



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"

Deck Beams or Bulkheads		
(3)	"	"

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?

"            "            "            an Ampere Meter

Date of Trial of complete Installation 3. 5. 79. 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 Dynamometer, Main and Branch Cables, as placed, that the Company are

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?

Is the insulation supplied with a Voltmeter?

an Ammeter Meter

Date of Trial of complete installation

Have all the requirements of Section 12 been satisfactorily carried out?

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.*

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

Whether the Cable is referred to in the

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

"*Dania*".

as ascertained by *me* from personal examination

What is the protection provided in the Machinery?

(1) Machinery exposed to Heat or Frost

(2) Machinery passing through Windows or Doors

(3) Machinery in the Deck

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

## Fees—

## MAIN BOILERS.

	£	s.	d.
H.S. Sq. ft.	:	:	:
G.S. "	:	:	:

## DONKEY BOILERS.

H.S. Sq. ft.	:	:	:
G.S. "	:	:	:
£	:	:	:

## ENGINES.

L.P.C. 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 *23rd December 1929*



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Secretary.

Fees advised

Fees paid



## GENERAL INSTRUCTIONS

Fees—

For the report of the Committee on the Survey of the Coast of the State of New York, the fee of \$100.00 is payable to the Surveyor General of the State of New York, at the time the report is submitted.

H.S. ... Sp. 12

For the report of the Committee on the Survey of the Coast of the State of New York, the fee of \$100.00 is payable to the Surveyor General of the State of New York, at the time the report is submitted.

DONOR'S NAME

H.S. ... Sp. 12

G.S.

INSTRUCTIONS

L.P.C. ... Sp. 12

Sp. 12

Twelve, for ...

1

Expenses ...

Total ...

It is submitted that this Report be approved.

Chief Surveyor

Approved by the Committee for the State of M.S. on the 15th of March 1914.

Dania

Fees advised

Fees paid

*Handwritten signature*



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