

No. 2392

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2399 No. in Register Book 3824

" " "
S.S. BOUVET I.

Makers of Engines Smiths Dock Co. Ltd.

Works No. 399

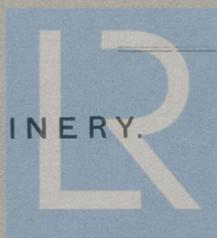
Makers of Main Boilers Richardson Westgarth & Co. Ltd.

Works No. D. 212.

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.



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005061-005068-0148

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. *333* No. in Register Book

Received at Head Office

15th November 1930

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Single Triple~~ *Screw* *Whaler*
" *Bauvet. 1.* "

Official No.

Port of Registry

Tromsberg

Registered Owners

Aktieselskabet. Sevilla.

Engines Built by

Clyde Works & Co. Ltd.

at

Cornth Bank-on-Dees.

Main Boilers Built by

Richardson Westgarth & Co. Ltd.

at

Hartlepool.

Donkey

at

Date of Completion

8-30

First Visit *1-4-30*

Last Visit

27-8-30

Total Visits *36.*



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RECIPROCATING ENGINES

Works No. **399** No. of Sets **1** Description **Triples expansion. S.P. Berks.**

No. of Cylinders each Engine **3** No. of Cranks **3**
 Diars. of Cylinders **14" - 23" - 39"** Stroke **24"**
 Cubic feet in each L.P. Cylinder **16.6**

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

" " each Receiver? **yes.**

Type of H.P. Valves, **piston slides.**

1st I.P. "

2nd I.P.,

L.P. "

" Valve Gear **slide.**

" Condenser **Surface.**

Diameter of Piston Rods (plain part) **4"**

Cooling Surface **925** sq. ft.
 Screwed part (bottom of thread) **2.8 sq.**

Material "

Diar. of Connecting Rods (smallest part) **3 5/8"**

Material **S.P.**

" Crosshead Gudgeons **4**

Length of Bearing **4 1/2"**

Material **Stat.**

No. of Crosshead Bolts (each) **4**

Diar. over Thrd. **1 3/4"**

Thrds. per inch **7**

Material **W.S.**

" Crank Pin " " **2**

" " " " **2 1/4"**

" " " " **6**

" Main Bearings **6**

Lengths **9"**

" Bolts in each **2**

Diar. over Thread **2"**

Threads per inch **7**

Material **W.S.**

" Holding Down Bolts, each Engine **5 1/2"**

Diar. **1 1/4"**

No. of Metal Chocks **5 1/2"**

Are the Engines bolted to the Tank Top or to a Built Seat? **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 S.K.C.**

Piston " "

Crossheads, " "

Date of Harbour Trial **26-8-30**

" Trial Trip **27-8-30**

Trials run at **In Lus Bay.**

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

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

900

Revs. per min. **154**

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

lbs., L.P., **11** lbs., Vacuum, **26** ins.

Speed on Trial **no ches taken.**

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

Builders' estimated I.H.P. **12 knots.**

Revs. per min.

Estimated Speed



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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

" Motors

" Reduction Gear

Turbine Splindles 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 *1* Angle of Cranks *-120°*

Diar. by Rule *7 1/2"* Actual *7 1/2"* In Way of Webs *7 1/2"*

" of Crank Pins *7 1/2"* Length between Webs *9 3/8"*

Greatest Width of Crank Webs *14 1/2"* Thickness *4 1/16"*

Least " " *11 1/4"* " " " *3 7/8"*

Diar. of Keys in Crank Webs *1 1/4"* Length *3 1/2"* Screwed or Plain *plain.*

" Dowels in Crank Pins *1"* Length *3 1/2"* Screwed or Plain *plain.*

No. of Bolts each Coupling *4* Diar. at Mid Length *2 1/8"* Diar. of Pitch Circle *11 3/4"*

Greatest Distance from Edge of Main Bearing to Crank Web *1/8"*

Type of Thrust Blocks *Michel.*

No. " Rings *1.*

Diar. of Thrust Shafts at bottom of Collars *7 1/2"* No. of Collars *2*

" " Forward Coupling *7 1/8"* At Aft Coupling *2 1/8"*

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 *8"* At Coupling *7 1/2"*

Are Propeller Shafts fitted with Continuous Brass Liners? *yes.*

Diar. over Liners *9 1/4" + 9 5/16"* Length of After Bearings *3'-0"*

Of what Material are the After Bearings composed? *Lignum Vitae.*

Are Means provided for lubricating the After Bearings with Oil? *no*

" " to prevent Sea Water entering the Stern Tubes? *no*

If so, what Type is adopted? *open to sea.*

SKETCH OF CRANK SHAFT.

Handwritten notes and sketches of a crank shaft, including dimensions and labels such as 'No. of Blades each Propeller', 'Diar. of Crank Pins', and 'Thickness'.

Stamp: No. 1581, Sp. P. 30, R. 2.



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BOILERS

Works No. *P. 212.*

No. of Boilers *1* Type *Cylindrical multitubular*

Single or Double-ended *single.*

No. of Furnaces in each *3*

Type of Furnaces *High-ton.*

Date when Plan approved *7-6-30*

Approved Working Pressure *200 lbs.*

Hydraulic Test Pressure *350 "*

Date of Hydraulic Test *24-7-30*

„ when Safety Valves set *26-8-30*

Pressure at which Valves were set *206 lbs.*

Date of Accumulation Test *26-8-30*

Maximum Pressure under Accumulation Test *206 lbs.*

System of Draught *C.A.*

Can Boilers be worked separately? *yes.*

Makers of Plates *Steel Co. of Scotland.*

„ Stay Bars

„ Rivets *R. B. & Co. Ltd.*

„ Furnaces *High-ton & Co.*

Greatest Internal Diam. of Boilers *14'-0"*

„ „ Length „ *11'-6"*

Square Feet of Heating Surface each Boiler *2292 sq*

„ „ Grate „ „ *55-7 sq*

No. of Safety Valves each Boiler *2* Rule Diam. Actual *2 1/2*

Are the Safety Valves fitted with Easing Gear? *yes.*

No. of Pressure Gauges, each Boiler *2* No. of Water Gauges *1*

„ Test Cocks „ *3* „ Salinometer Cocks *1*



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

direct.

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?

values.

No. of Strakes of Shell Plating in each Boiler

1

Plates in each Strake

2

Thickness of Shell Plates Approved

1 1/4"

in Boilers

1 1/4"

Are the Rivets Iron or Steel?

steel.

Are the Longitudinal Seams Butt or Lap Joints?

butt.

Are the Butt Straps Single or Double?

double.

Are the Double Butt Straps of equal width?

yes.

Thickness of outside Butt Straps

3/32"

inside

1 3/32"

Are Longitudinal Seams Hand or Machine Riveted?

machine.

Are they Single, Double, or Treble Riveted?

treble

No. of Rivets in a Pitch

5

Diam. of Rivet Holes

1 5/16"

Pitch

8 3/4"

No. of Rows of Rivets in Centre Circumferential Seams

5

Are these Seams Hand or Machine Riveted?

✓

Diam. of Rivet Holes

✓

Pitch

✓

No. of Rows of Rivets in Front End Circumferential Seams

2

Are these Seams Hand or Machine riveted?

hand.

Diam. of Rivet Holes

1 1/4"

Pitch

3.64

No. of Rows of Rivets in Back End Circumferential Seams

2

Are these Seams Hand or Machine Riveted?

machine.

Diam. of Rivet Holes

1 1/4"

Pitch

3.64

Size of Manholes in Shell

16" x 12"

Dimensions of Compensating Rings

2'-8" x 2'-4" x 1 1/4"

Handwritten notes and calculations on page 17, including various measurements and formulas such as 1 1/4" + 1 1/4" = 2 1/2", 3/8" + 3/8" = 3/4", and 1 1/4" + 1 1/4" = 2 1/2".



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Thickness of End Plates in Steam Space Approved

1 3/16" direct

" " " " " in Boilers

1 3/16"

Pitch of Steam Space Stays

19 1/2" x 18"

Diar. " " " " Approved

3 1/8" Threads per Inch 6

" " " " " in Boilers

3 1/8" 6

Material of " " "

steel.

How are Stays Secured?

double-nuts washers.

Diar. and Thickness of Loose Washers on End Plates

11" x 13/16"

" " Riveted " "

Width " " Doubling Strips "

double.

Thickness of Middle Back End Plates Approved

-

" " " " " in Boilers

-

Thickness of Doublings in Wide Spaces between Fireboxes

-

Pitch of Stays at

13 1/2" x 8 1/8"

Diar. of Stays Approved

1 7/8" Threads per Inch 9

" " in Boilers

1 7/8" 9

Material "

steel.

Are Stays fitted with Nuts outside?

yes.

Thickness of Back End Plates at Bottom Approved

15/16"

" " " " " in Boilers

16/16"

Pitch of Stays at Wide Spaces between Fireboxes

13 1/2" x 8 1/8"

Thickness of Doublings in " "

-

Thickness of Front End Plates at Bottom Approved

7/8"

" " " " " in Boilers

7/8"

No. of Longitudinal Stays in Spaces between Furnaces

1



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Diarr. of Stays Approved

2 1/2
2 2

Threads per Inch

9
9

.. .. in Boilers

Material ..

steel.

Thickness of Front Tube Plates Approved

3/8"
7/8"

.. .. in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

13 1/2" x 9 1/4"

Thickness of Doublings in

3/8", 7/16"

.. Stay Tubes at

Are Stay Tubes fitted with Nuts at Front End

yes.

Thickness of Back Tube Plates Approved

3/4"
3/4"

.. .. in Boilers

Pitch of Stay Tubes in Back Tube Plates

10 1/8" x 4 1/2"
3 3/4" x 3 1/8"
5/16", 3/8", 7/16"

.. Plain ..

Thickness of Stay Tubes

.. Plain ..

External Diarr. of Tubes

2 1/2"
Iron.

Material ..

Thickness of Furnace Plates Approved

9/32"
19/32"

.. .. in Boilers

Smallest outside Diarr. of Furnaces

3'-4" 15/16"
8'-0"

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

2'-7" 15/16"

Thickness of Tops Approved

21/32"
21/32"

.. .. in Boilers

Pitch of Screwed Stays in C.O. Tops

8" x 7 1/2"



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VERTICAL DONKEY BOILERS.

No. of Boilers *178* Type *9*

Greatest Int. Diar. *21 1/2* Height *21 1/2*

Height of Boiler Crown above Fire Grate *2 1/2*

Are Boiler Crowns Flat or Dished? *2 1/2*

Internal Radius of Dished Ends *2 1/2* Thickness of Plates *3/8*

Description of Seams in Boiler Crowns *8 x 9 1/8*

Diar. of Rivet Holes *3/8* Pitch *1 1/2* Width of Overlap *9*

Height of Firebox Crowns above Fire Grate *2 1/2*

Are Firebox Crowns Flat or Dished? *2 1/2*

External Radius of Dished Crowns *2 1/2* Thickness of Plates *3/8*

No. of Crown Stays *2* Diar. *3/8* Material *steel*

External Diar. of Firebox at Top *21 1/2* Bottom *21 1/2* Thickness of Plates *3/8*

No. of Water Tubes *218* Ext. Diar. *2 1/8* Thickness *3/8*

Material of Water Tubes *218*

Size of Manhole in Shell *21 1/8*

Dimensions of Compensating Ring *21 1/8*

Heating Surface, each Boiler *218* Grate Surface *21 1/8*

SUPERHEATERS.

Description of Superheaters *218*

Where situated? *218*

Which Boilers are connected to Superheaters? *218*

Can Superheaters be shut off while Boilers are working? *218*

No. of Safety Valves on each Superheater *218* Diar. *3/8*

Are " " fitted with Lasing Gear? *218*

Date of Hydraulic Test *218* Test Pressure *218*

Date when Safety Valves set *218* Pressure on Valves *218*

MAIN STEAM PIPES

No. of Pipes *1*

Material *steel*

External, Welded or Seamless *1*

Internal Diar. *1*

Thickness *1*

How and Where secured? *1*

Date of Hydraulic Test *1*

Test Pressure *1*

No. of Lengths *1*

Material *1*

External, Welded or Seamless *1*

Internal Diar. *1*

Thickness *1*

How and Where secured? *1*

Date of Hydraulic Test *1*

Test Pressure *1*



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MAIN STEAM PIPES.

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

1	1
copper.	copper.
4 1/2"	S. P.
4 w.l.	4 1/2"
braked.	4 w.l.
20-8-30	braked.
braked.	20-8-30
400 lbs.	400 lbs.

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

FEED WATER HEATERS

FEED WATER FILTERS



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EVAPORATORS.

No. 1 Type *Weyns* 10 Tons per Day @
 Makers *J. Weyns Co.*
 Working Pressure *15 lbs.* Test Pressure *50 lbs.* Date of Test *13-8-30.*
 Date of Test of Safety Valves under Steam *26-8-30*

FEED WATER HEATERS.

No. 1 Type ~~*Hallden + Brook*~~ @
 Makers ~~*Hallden + Brook*~~ *Caird + Raynor*
 Working Pressure *200 lbs.* Test Pressure *400 lbs.* Date of Test *1/7/30*

FEED WATER FILTERS.

No. 1 Type *Carpady* Size
 Makers *Smiths Dh Co.*
 Working Pressure Test Pressure Date of Test

LIST OF DUNGEY, PUMPS.

Duplex General Service 6 x 4 1/4" x 6"
7" Centrifugal Pump.



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SPARE GEAR.

No of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	
" Coupling Bolts	1 set.	" Main Bearing Bolts	2	" Valve Chest "	
" Junk Ring Bolts	6	" Feed Pump Valves	1 set.	" Bilge Pump Valves	1 set.
" H.P. Piston Rings	1 set.	" I.P. Piston Rings	1 set.	" L.P. Piston Rings	
" " Springs		" " Springs		" " Springs	
" Safety Valve "	1 set.	" Fire Bars	1/2 set.	" Feed Check Valves	
" Piston Rods		" Connecting Rods		" Valve Spindles	
" Air Pump Rods		" Air Pump Buckets		" Air Pump Valves	1 set.
" Cir. "		" Cir. "		" Cir. "	
" Crank Shafts		" Crank Pin Bushes		" Crosshead Bushes	
" Propeller Shafts	1	" Propellers	1	" Propeller Blades	
" Boiler Tubes	6	" Condenser Tubes	12	" Condenser Ferrules	30

OTHER ARTICLES OF SPARE GEAR:—

REFRIGERATORS

No. of Machines		Capacity of each	
Description			
No. of Steam Cylinders, each Machine		No. of Compressor	
No. of Cranks			
Machines of Foreign or British origin, and whether worked by Refrigerating Machines or Independently			



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REFRIGERATORS.

No. of Machines *2* Capacity of each *2*
 Makers *1st*
 Description *6*
 No. of Steam Cylinders, each Machine *1st* No. of Compressors *2* No. of Cranks *1st*
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently
 Condenser Tubes *12* Condenser Surface *30*

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.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
<i>40</i>	<i>11</i>	<i>350</i>	<i>10</i>	<i>23</i>
<i>11</i>	<i>23</i>	<i>11</i>	<i>10</i>	<i>23</i>

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



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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. "BOUVET. I."
as ascertained by *me* from personal examination

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

Fees—

MAIN BOILERS.

	£	s.	d.
H.S. <i>2292</i> Sq. ft.	:	:	:
G.S. <i>55.7</i> "	:	:	:

DONKEY BOILERS.

H.S.	Sq. ft.	:	:
G.S.	"	:	:
	£	:	:

ENGINES.

L.P.C. <i>16.6</i> Cub. ft.	:	:
	£	:

Testing, &c.

Expenses

Total ... £ : :

It is submitted that this Report be approved,

John King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the *26th* November 1930

Fees advised

Fees paid

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Secretary.



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