

No. 2237

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. 2244 No. in Register Book 3662

" " "  
S.S. K O S IV

Makers of Engines *Cammell McAlister Ltd*

Works No. 332

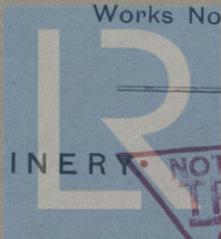
Makers of Main Boilers *Blair (1926) Ltd*

Works No. C. 190

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY



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4 301

No.

THE BRITISH CORPORATION FOR THE SURVEY  
AND  
REGISTRY OF SHIPPING.

Report No. .... No. in Register Book .....

Received at Head Office

18<sup>th</sup> December 1929

Surveyor's Report on the New Engines, Boilers, and Auxiliary  
Machinery of the <sup>Single Triple</sup> ~~Twin Quadruple~~ Screw Whaler  
"K O S. IV"

Official No.

Port of Registry

Sandefjord

Registered Owners

Hvalfangerselskabet Koenos A/S

Engines Built by

Smiths Dock Co. Ltd.

at

South Bank-on-Sea

Main Boilers Built by

Blair & Co. (1929) Ltd.

at

Stockton-on-Sea

Donkey

at

Date of Completion

5-29

First Visit

25-2-29

Last Visit

28-5-29

Total Visits

30

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## RECIPROCATING ENGINES

Works No. 332

No. of Sets 1

Description

Triple Expansion  
S.C. 3 Cyls.

No. of Cylinders each Engine 3

No. of Cranks 3

Diams 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.?

" " " each Receiver?

Type of H.P. Valves,

1st L.P. "

2nd I.P.,

L.P. "

" Valve Gear

" Condenser

Cooling Surface

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

Diar.

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 Skelton

Piston " "

Crossheads,

Date of Harbour Trial

27-5-29

" Trial Trip

28-5-29

Trials run at

In North Sea.

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

yels.

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

857

Revs. per min.

149

Pressure in 1st I.P. Receiver,

61

lbs., 2nd I.P.,

lbs., L.P.,

10.5

lbs., Vacuum, 24

Speed on Trial

no speed 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.

Revs. per min.

Estimated Speed



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No. of Blades each Propeller *SKETCH OF PROPELLER SHAFT* Fitted or Solid? *9*  
 Material of Blades Boss *"KOS. I"*  
 Diam. of Propellers *Same as* Pitch Surface (each S. It.)  
 Coefficient of Displacement of Vessel at  $\frac{1}{2}$  Moulded Depth

Crank Shafts Forged by *Yip Yee Coy.* Material *LS*  
 ,, Pins ,, " " " " " "  
 ,, Webs ,, " " " " " "  
 Thrust Shafts ,, " " " " " "  
 Intermed. ,, " " " " " "  
 Propeller ,, " " " " " "  
 Crank ,, Finished by " " " " " "  
 Thrust ,, " " " " " "  
 Intermed. ,, " " " " " "  
 Propeller ,, " " " " " "

STAMP MARKS ON SHAFTS.

*Crank, Thrust  
 & Tail Shafts:—*

**B. G.  
 N°657  
 26-3-29.  
 R. S.**

SKETCH OF PROPELLER SHAFT.

No. of Air Pumps  
 Worked by Main or Independent Engines?  
 No. of Circulating Pumps  
 Type of  
 Diam. of  
 Section from Sea  
 Has each Pump a Rigid Section with Non-return Valve?  
 What other Pumps can circulate through Condenser?  
 No. of Feed Pumps on Main Engine  
 Are Spring-loaded Ball Valves fitted to each Pump?  
 Can one Pump be overhauled while the others are at work?  
 No. of Independent Feed Pumps  
 What other Pumps can feed the boilers?  
 No. of High Pumps on Main Engine  
 Can one Pump be overhauled while the others are at work?  
 No. of Independent High Pumps  
 What other Pumps can draw from the bilges?  
 Are all High Sections fitted with Hoses?  
 Are the Valves, etc., so arranged as to prevent unidirectional connection between Sea and Bilges?  
 Are all Sea Connections made with Valves or Hose next the Ship's Side?  
 Are they placed so as to be easily accessible?  
 Are the Distances from the bilge above or below the Deep Lead Lines?  
 Are the Bilge Pumps so arranged as to be easily accessible?  
 Are all Bilge Connections made with Hoses and are they fitted with Covering Plates or Flanges on the Outside?







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

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings

*Same as KOS I*

*Handwritten notes in red ink*



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*Handwritten notes in red ink*

Thickness of End Plates in Steam Space Approved

" " " " " 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

" " 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 " " " "

Diar. 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

*Same as K.O.S.I.*



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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

*Same as "K.O.S.I"*

Threads per Inch Diar. of Screwed Stays & Approved

" " " " in Boilers

Material "

Thickness of Combustion Chamber Stays Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Stays

Threads per Inch Diar. " Approved

" " " " in Boilers

Material "

Thickness of Combustion Chamber Backs & Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Threads per Inch Diar. " Approved

" " " " in Boilers

Material "

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

Thickness of Combustion Chamber Headers

No. of Doublers over each Wing Chamber

Centre " " " "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each " " " "

No. of Stays in each " " " "

Size of Lower Manholes



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Diar. 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

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

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

Thickness of Combustion Chamber Bottom

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

*Same as "KOSI"*

VERTICAL DONKEY BOILERS

No. of Boilers	Type
Greatest Int. Diar.	Height
Height of Boiler Crown above Fire Grate	The Boiler Crown Flat or Dished?
Internal Radius of Dished Ends	Thickness of Plates
Description of Seams in Boiler Crown	Diar. of Water Tubes
Height of Firebox Crown above Fire Grate	Pitch
The Firebox Crown Flat or Dished?	Width of Overlap
Internal Radius of Dished Crown	Thickness of Plates
No. of Crown Stays	Material
External Dia. of Firebox at Top	Bottom
No. of Water Tubes	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	



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## 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 Basing Gear ?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

## MAIN STEAM PIPES.

No. of Pipes

Material

Joints, Welded or Bolted

Internal Diar.

Thickness

How are Joints secured ?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Joints, Welded or Bolted

Internal Diar.

Thickness

How are Joints secured ?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Joints, Welded or Bolted

Internal Diar.

Thickness

How are Joints secured ?

Date of Hydraulic Test

Test Pressure



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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

1  
copper.  
S. P.  
4 1/2"  
Lg. W.L.  
braced.  
23-5-29  
400 lbs.

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

## STEAM EVAPORATORS TEST

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

Description of Equipment

Working Pressure

Date of Test

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

Description of Equipment

Working Pressure

Date of Test

No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

Same as "KOS I"

FEED WATER HEATERS

FEED WATER FILTERS



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No. of Dynamos  
 Type of Dynamos  
 Temp. at  
 Temp. at  
 Temp. at

No. of Belts  
 Particulars of Belts  
 Particulars of Belts

System of Distribution

Are there any other regulations

A table of space gear for lighting

Are all lights

Are all lights

Are all lights

Are all lights

Rate of Fuel under Working Conditions

ELECTRIC LIGHTING

Installation Fitted by

*R. Pickensqiel Ross*

No. and Description of Dynamos

*1. Compound wound*

Makers of Dynamos

*Candler and Lorge Eng. Co.*

Capacity

*40 Amperes, at 110 Volts, 350 Revols. per Min.*

Current Alternating or Continuous

*Continuous.*

Single or Double Wire System

Position of Dynamos

Main Switch Board

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

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.
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*Same as Test*



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Total No. of Lights

No. of Motors driving Fans, &c.

No. of Heaters

Current required for Motors and Heaters

Do not include in this

(8)

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

*Installation fitted by*  
*No. and Description of Dynamos*  
*Meters of Dynamos*  
*Capacity*  
*Current Alternating or Continuous*  
*Single or Double Wire System*  
*Position of Dynamos*  
*Main Switch Board*  
*No. of Circuits to which switches are provided on Main Switch Board*  
*Particulars of these Circuits:-*

Number of Lights	Number of Meters	Size of Conductors	Current Intensity	Conductivity	Insulation
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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

*Same as KOS I*

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 28-5-29. Duration of Trial 6 hrs.

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



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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.

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,

*Joe Batt* for Chief Surveyor.

Approved by the Committee for the Class of M.B.S.\* on the *23<sup>rd</sup>* December 1929

Fees advised

Fees paid



GENERAL CONSTRUCTION

MAIN BUILDING	
H.S.	2222
G.S.	2222
DORMERY BUILDING	
H.S.	
G.S.	
KITCHEN	
L.P.C.	10.0
Testing, etc.	
Expenses	
Total ... 2	

It is admitted that this Report be approved.

Approved by the Committee for the Class of M.E.S. on the 22<sup>nd</sup> November 1922

*[Signature]*

KOS IV

Lives paid

Lives advised

*[Signature]*



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