

No. 2575

TRANSFERRED TO:
L. R. SYSTEM

THE BRITISH CORPORATION REGISTER
OF SHIPPING AND AIRCRAFT

2660
Report No. ~~1353~~ No. in Register Book 4220

TRANSFERRED TO:
L. R. SYSTEM

Ship... *Unitas 5"*

Makers of Engines... *Bremer Vulkan*

Works No. *743*

Makers of Main Boilers... *Bremer Vulkan*

Works No. *812*

Makers of Donkey Boiler... */*

Works No.

MACHINERY



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THE BRITISH CORPORATION REGISTER
OF SHIPPING AND AIRCRAFT

Report No. *1359* No. in Register Book *4220*

Received at Head Office *Sept 24, 1934*

Surveyor's Report on Engines, Boilers, and Auxiliary
Machinery of Single Triple
Twin Quadruple Screw

Official No.

Port of Registry *Bremen*

Registered Owners

*Jurgens, Van den Bergh Mang.
Berkt. Union S. m. b. H., Berlin*

Engines Built by

Bremer Vulkan

at

Pegesack

Main Boilers Built by

Bremer Vulkan

at

Pegesack

Donkey " "

at

Date of Completion

29.5.37.

First Visit

15/8/36

Last Visit

29.5.37.

Total Visits

23

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GENERAL DESCRIPTION AND TRIAL PARTICULARS

Works No. **743** No. of Sets **1**
 Description **3 cylinder triple expansion**
 Date of Harbour Trial **22.5.33.**
 „ Trial Trip **29.5.33.**
 Trials run at **Baltic between Kiel and Eckernförde**
 Were Engines tested at full power under Sea-going conditions? **yes**
 Draught of Ship Loaded **11'7"** Draught on Trial **11'5 1/2"**
~~B.H.P.~~ I.H.P. Developed. **1728** Revs. per Min. **180**
 Boiler Pressure = **200** lbs. 1st I.P. Receiver = **5.40** 2nd I.P. = **1.15** at
 Mean Ind. Pressure = **6.39** at **HP** **IP** **LP** **3.25** **1.35** Vacuum = **89%** lbs.
 Speed of Ship on Trial **14.16** Knots.
 Builder's estimated data:—
~~B.H.P.~~ I.H.P. **1560** Revs. per min. **176** Speed **14**

REMARKS

RECIPROCATING STEAM ENGINES

No. of Cylinders each Engine **3** No. of Cranks **3**
 Diars of Cylinders **410 x 660 x 1120** in Stroke **660** in
 Cubic feet in each L.P. Cylinder **22.96**
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cyl.? **yes**
 „ „ „ each Receiver? **yes**
 Type of H.F. Valves, **piston valve**
 „ 1st I.P. „ „ „
 „ 2nd I.P. „ „ „
 „ L.P. „ **balanced slide valve**
 „ Valve Gear **Stephenson**
 „ Condenser **surface** Cooling Surface **1500** sq. ft.
 Diar. of Piston Rods (plain part) **115** Screwed part (bottom of thread) **76.48** Material **J.S.**
 „ Connecting Rods (smallest part) **108 φ** Material „
 „ Crosshead Gudgeons **120** Length of Bearing **140** Material „
 No. of Crosshead Bolts (each) **4** Diar. over Thrd. **48** Thrds. per inch **7** Material „
 „ Crank Pin „ „ **2** „ **64** „ **6** „ „
 „ Main Bearing „ „ **2** „ **58** „ **6** „ „
 „ Main Bearings **6** Length of Bearings **290**
 „ Holding Down Bolts, each Engine **64** Diar. **1 1/4"** No. of Chocks (Metal) **64** P. J.

Are Engines bolted to Tank Top or to Built Seat? **to built seat**Are Bolts tapped through Tank Top and fitted with Nuts Inside? **—**If not, how are Bolts fitted? **with head below shipbuilding foundation**

REMARKS

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STEAM TURBINES

Type of Turbines

Arrangements of Turbines

No. of H.P. Rotors	I.P. Rotors	L.P. Rotors	Astern Rotors
--------------------	-------------	-------------	---------------

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

Is Single or Double Reduction Gear used?

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

S.H.P.

"	"	I.P.	"	"	"
---	---	------	---	---	---

"	"	L.P.	"	"	"
---	---	------	---	---	---

"	"	1st Reduction Shaft
---	---	---------------------

"	"	2nd	"
---	---	-----	---

Is Nodal Drive fitted?

Diar. of Shafts

Are arrangements such that Steam can be led direct to L.P. Turbine?

"	"	"	either H.P. or I.P. Turbine can exhaust direct to the Condenser?
---	---	---	--

Description of Lubricating Oil System

Diar. and No. Holding Down Bolts H.P. Turbine	I.P. Turbine	L.P. Turbine
---	--------------	--------------

Metal Chocks	"	"	"	"
--------------	---	---	---	---

Diar. and No. Holding Down Bolts for Gear Cases

REMARKS

RECIPROCATING OIL ENGINES

Description

No. of Cylinders	Diar. of Cylinders	Stroke	No. of Cranks
------------------	--------------------	--------	---------------

Span between Bearing Edges	No. of Bearings
----------------------------	-----------------

Maximum Initial Pressure	Mean Indicated Pressure	B.H.P.	Revs.
--------------------------	-------------------------	--------	-------

Flywheel : Diar.	Weight
------------------	--------

Crankshaft Balance Weights	"	Radius of Gyration
----------------------------	---	--------------------

Fuel Injection System	W.P.
-----------------------	------

Injection Air Compressors, No.	Diars.	Stroke	W.P.
--------------------------------	--------	--------	------

No. of Injection Air Receivers	Capacity	W.P.	Type
--------------------------------	----------	------	------

Scavenge Air Units, No.	Driven by	"
-------------------------	-----------	---

Superchargers, No.	"	"	"
--------------------	---	---	---

Cylinder cooling by	No. of Pumps	Driven by
---------------------	--------------	-----------

Pistons	"	"	"	"	"
---------	---	---	---	---	---

Lubrication Oil System	"	"	"	"	"
------------------------	---	---	---	---	---

No. of Coolers	Purpose
----------------	---------

Material Cylinder Covers	Liners	Pistons
--------------------------	--------	---------

Are Engines Reversible?	Is Gearing used?
-------------------------	------------------

How are Engines started?

No. of Starting Air Receivers	Capacity	W.P.	Type
-------------------------------	----------	------	------

" of Exhaust Gas Boilers	W.P.	Is Oil Fuel used?	Purpose
--------------------------	------	-------------------	---------

Diar. of Piston Rods (plain part)	Screwed part (bottom of Thread)	Material
-----------------------------------	---------------------------------	----------

" " Connecting Rod (smallest part)	"
------------------------------------	---

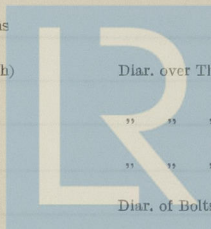
" " Crosshead Gudgeons	Length of Bearing	"
------------------------	-------------------	---

No. of Crosshead Bolts (each)	Diar. over Thread	Threads per inch	"
-------------------------------	-------------------	------------------	---

" " Crank Pin	"	"	"	"
---------------	---	---	---	---

" " Main Bearing Bolts	"	"	"	"
------------------------	---	---	---	---

" " Holding Down Bolts	Diar. of Bolts	No. of Metal Chocks
------------------------	----------------	---------------------



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RECIPROCATING OIL ENGINES, Contd.

Are Engines Bolted to Tank Top or to Built Seat?

,, Bolts tapped through the Tank Top and fitted with Nuts inside?

If not, how are they fitted?

No. of Auxiliary Engines,

Description

No. of Cylinders

Diar.

Stroke

No. of Cranks

Span between Bearing Edges

No. of Bearings

Max. Init. Press.

Mean Ind. Press.

B.H.P.

R.P.M.

No. of Aux. Air Compressors

Diar.

Stroke

W.P.

Driven by

,, ,, Holding Down Bolts

No. of Metal Chocks

REMARKS

ELECTRIC PROPULSION GENERATORS AND MOTORS

Description of Generators

Makers of Generators

No. of Generators

How Driven

Capacity of each, Kw.

Amps.

Volts

Revs. per min.

Continuous or Alternating Current

Phases

Periods

Diar. of Armature Shaft

No. and length of Bearings

Type of Circuit Breakers

Cut out load

Description of Motors

Makers of Motors

No. of Motors

How Driven

Output of Motor (each), H.P.

Amps.

Volts

Revs. per min.

Diar. of Motor Shafts

No. and length of Bearings

Description of Boosters

Makers of Boosters

No. of Boosters

How Driven

Capacity of each, Kw.

Amps.

Volts

Revs. per min.

Description of Control and Switch Gear

REMARKS



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REDUCTION GEARING

Is Single or Double Reduction Gearing employed?

Diar. of 1st Reduction Pinion

" 1st " Wheel

Estimated Pressure per lineal inch

Diar. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of 1st Red. Shaft

" " " " 2nd " "

Width

Pitch of Teeth

Width

Pitch of Teeth

PROPELLERS

No. of Blades each Propeller

Fitted or Solid

Material of Boss

Material of Blades

Diar. of Propellers

Pitch

Surface (each)

sq. ft.

No. of Studs for one Blade

Diar. of Studs

solid

C.S.

9' 9"

9'

40

sq. ft.

FORGINGS

Piston Rods

forged by

Bremer Vulkan

Material

J. S.

Connecting Rods

" "

Th. Wuppermann

"

"

Crossheads

" "

Bremer Vulkan

"

"

Turbine Spindles

" "

"

" Wheels

" "

"

Reduction Gear Shafts

forged by

"

" " Wheel

" "

"

Generator Armature Shafts

" "

"

Motor

" "

"

Crankshaft Pins

forged by

"

" End

" "

"

" Webs

" "

"

Thrust Shaft

" "

"

Intermediate Shaft

" "

"

Propeller

" "

"

Piston Rods

finished by

Diar.

Connecting Rods

" "

Crossheads

" "

Turbine Spindles

" "

Reduction Gear Shafts

finished by

" " Wheels

" "

Generator Armature Shafts

" "

Motor

" "

Crankshafts

" "

Thrust Shafts

" "

Intermediate

" "

Propeller

" "

Th. Wuppermann

Bremer Vulkan

Bremer Vulkan

115 mm

108 "

120 "

220 "

216 "

216 "

226 "

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SHAFTING

Are Crankshafts built or solid *built* No. of lengths in each *4* Angle of Cranks *120°*
 Diar. of Shafts (Rule) *220* (Actual) *220* In way of Webs *222* Diar. of Crank Pins *220*
 Span between Webs *304* Width of Webs *416* Thickness of Webs *136*
 Diar. of Dowel in Crank Webs *22* Length and No. *90 1/2* Type *round*
 No. of Bolts each Coupling *6* Diar. at Mid Length *54* Diar. of Pitch Circle *320*
 Greatest Distance from Edge of Main Bearing to Crank Web *7 1/2*
 Diar. of Turbine Shafts (Rule) *—* (Actual) No. and length of Bearings
 " " Gearing " " " " " " " " " " " "
 Type of Thrust Block *1 ring* No. of Rings *1*
 Diar. of Thrust Shafts at bottom of Collars *216* No. of Collars *1*
 " " Forward Coupling *216* At Aft Coupling *216*
 Diar. of Intermediate Shafting (Rule) *216* (Actual) *220* No. of Lengths *1*
 No. of Bolts, each Coupling *6* Diar. at Mid Length *54* Diar. of Pitch Circle *320*
 Diar. of Propeller Shafts (Rule) *226* (Actual) *227/26* At Coupling *220*
 Are Propeller Shafts fitted with Continuous Brass Liners? *yes* Diar. over Liners *256/57*
 Length of After Bearings *1076* Of what Material is After Bearing made? *lignum*
 Are Means provided for Oil Lubrication of After Bearing? *no* *vibee*
 What means are adopted to prevent Sea Water entering Stern Tube? *—*

LIST OF MARKS STAMPED ON SHAFTS

S. L. B. 306 on crank-shaft
" 4 264 376 on webs.
" 4 642 on thrust-shaft
" 4 659 F on intermediate shaft
" 4 659 F on tail-shaft
" 4 647 R on spare tail-shaft.
The numbers are testing numbers.

SKETCH OF CRANK SHAFTS

See sketch S. S. 723 and plan approved:
29/8/35.



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PUMPS, &c.

No. of Air Pumps *1* Diar. *19"* Stroke *15"*

Worked by Main or Independent Engines? *independent*

No. of Circulating Pumps *1* Diar. *700 mm* Stroke *—*

Type of *centrifugal*

Diar. of *—* Suction from Sea *225 mm*

Has each Pump a Bilge Suction with Non-return Valve? *yes* Diar. *150*

What other Pumps can circulate through Condenser? *general service pumps*

No. of Feed Pumps on Main Engine *—* Diar. *—* Stroke *—*

Are Spring-loaded Relief Valves fitted to each Pump? *yes*

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

No. of Independent Feed Pumps *2* Diar. *160* Stroke *450*

What other Pumps can feed the Boilers? *general service pumps*

No. of Bilge Pumps on Main Engine *—* Diar. *—* Stroke *—*

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

No. of Independent Bilge Pumps *1*

What other Pumps can draw from the Bilges? *general service pumps and ejector*

Are all Bilge Suctions fitted with Roses? *yes*

Are the Valves, &c., so arranged as to prevent unintentional connection between Sea and Bilges? *yes*

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

Are they placed so as to be easily accessible? *yes*

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

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

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

on the Outside? *yes*

ETCH OF PROPELLER SHAFTS

See sketch S.S. 723 and plan approved: 9/9/35.



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BOILERS

Works No. *P/2.*

No. of Boilers *1* Type *multitubular*

Single or Double-ended *single*

No. of Furnaces in each *3*

Type of Furnaces *Morrison*

Date when Plan approved *24/8/35*

Approved Working Pressure *200 lbs.*

Hydraulic Test Pressure *350 "*

Date of Hydraulic Test *9.3.37.*

„ when Safety Valves set *29.5.37.*

Pressure at which Valves were set *200 lbs.*

Date of Accumulation Test *29.5.37.*

Maximum Pressure under Accumulation Test *203 lbs.*

System of Draught and Fuel *forced, c. a., oil*

Can Boilers be worked separately? *—*

Makers of Plates *Deutsche Röhrenwerke A. G.*
Stahl und Walzwerk Thyssen

„ Stay Bars *Klöckner Werke A. G.*

„ Rivets *A. Sternberg, Saest*

„ Furnaces *Deutsche Röhrenwerke A. G.*

Greatest Internal Diam. of Boilers *4800 mm*

„ „ Length „ *3691 "*

Square Feet of Heating Surface each Boiler *3390*

„ „ Grate „ „ *—*

No. of Safety Valves each Boiler *2* Rule Diam. Actual *2 x 100*

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

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

„ Test Cocks „ *3* „ Sallinometer Cocks *1*



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

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

Are these Pipes connected to Boilers by Cocks or Valves? *by valves*

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

No. of Strakes of Shell Plating in each Boiler *1*

„ Plates in each Strake *1*

Thickness of Shell Plates Approved *34 mm*

„ „ in Boilers *34 "*

Are the Rivets Iron or Steel? *steel*

Are the Longitudinal Seams Butt or Lap Joints? *butt straps*

Are the Butt Straps Single or Double? *double*

Are the Double Butt Straps of equal width? *yes*

Thickness of outside Butt Straps *30 mm*

„ Inside „ *30 "*

Are Longitudinal Seams Hand or Machine Riveted? *machine riveted*

Are they Single, Double, or Treble Riveted? *treble riveted*

No. of Rivets in a Pitch *5*

Diam. of Rivet Holes *38 mm* Pitch *245 mm*

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 *2*

Are these Seams Hand or Machine riveted? *hydraulic riveted*

Diam. of Rivet Holes *35 mm* Pitch *102.5 mm*

No. of Rows of Rivets in Back End Circumferential Seams *2*

Are these Seams Hand or Machine Riveted? *hand riveted*

Diam. of Rivet Holes *35 mm* Pitch *102.5 mm*

Size of Manholes in Shell *320 x 420*

Dimensions of Compensating Rings *960 x 1060*



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Thickness of End Plates in Steam Space Approved *30.5 mm*

" " " " " " In Boilers *30.5 "*

Pitch of Steam Space Stays *520 x 500*

Diar. " " " " Approved *80* Threads per Inch *6*

" " " " " " In Boilers *80* " *6*

Material of " " " *steel*

How are Stays Secured? *by nuts*

Diar. and Thickness of Loose Washers on End Plates *-*

" " Riveted " " " *350 φ, 22 mm thick.*

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 *24 mm*

" " " " " " In Boiler *24 "*

Pitch of Stays at Wide Spaces between Fireboxes *240 x 210*

Thickness of Doublings in " " *-*

Thickness of Front End Plates at Bottom Approved *25 mm*

" " " " " " In Boilers *25 "*

No. of Longitudinal Stays in Spaces between Furnaces *2*



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Diar. of Stays Approved ~~56.5~~ Threads per Inch ~~6~~

" " in Boilers ~~56.5~~

Material ~~steel~~

Thickness of Front Tube Plates Approved ~~17.5~~ 25

" " " in Boilers ~~17.5~~ 25

Pitch of Stay Tubes at Spaces between Stacks of Tubes 188 x 345

Thickness of Doublings in " " "

" Stay Tubes at " " " 9

Are Stay Tubes fitted with Nuts at Front End? no

Thickness of Back Tube Plates Approved 22

" " " in Boilers 22

Pitch of Stay Tubes in Back Tube Plates 188 x 285

" Plain " 95 x 94

Thickness of Stay Tubes 7

" Plain " 4.06

External Diar. of Tubes 63.5

Material " steel

Thickness of Furnace Plates Approved 16.5

" " " in Boilers 16.5

Smallest outside Diar. of Furnaces 118.3

Length between Tube Plates 2470

Width of Combustion Chambers (Front to Back) 900

Thickness of " " Tops Approved 17.5

" " " in Boilers 17.5

Pitch of Screwed Stays in C.C. Tops 213.7 x 200



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Diar. of Screwed Stays Approved *57a.51* Threads per Inch *9*

" " " in Boilers *57.51*

Material " " *steel*

Thickness of Combustion Chamber Sides Approved *17.5 mm*

" " " in Boilers *17.5 "*

Pitch of Screwed Stays in C.O. Sides *210 x 240 "*

Diar. " " Approved *38 mm* Threads per Inch *9*

" " " in Boilers *38 "*

Material " " *steel*

Thickness of Combustion Chamber Backs Approved *16.5 mm*

" " " in Boilers *16.5 "*

Pitch of Screwed Stays in C.O. Backs *213.75 x 200 "*

Diar. " " Approved *53,47,41,35* Threads per Inch *9*

" " " in Boilers " " " "

Material " " *steel*

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

Thickness of Combustion Chamber Bottoms *22 mm*

No. of Girders over each Wing Chamber *4*

" " " Centre " *4*

Depth and Thickness of Girders *240 x 22.5*

Material of Girders *steel*

No. of Stays in each *3*

No. of Tubes, each Boiler *496*

Size of Lower Manholes *300 x 400*



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MAIN PRESSURE PIPES

No. of Lengths	3
Material	steel
Brazed, Welded or Seamless	
Internal Diam.	110 mm
Thickness	5 mm
How are Flanges secured?	
Date of Hydraulic Test	15.5.39.
Test Pressure	50 atm

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	

DESCRIPTION OF OIL FUEL INSTALLATION

Oil pumped to burners by simplex pressure pumps.

LIST OF HYDRAULIC TESTS

Feed-pipes.	35 atm.	15.5.39.
Safety-valve-chests.	28 atm.	2.3.39.
Feed-heater No. 29929.	3/38.45 atm.	5.2.39.
Air-mixer No. 194.	14 atm.	9.3.39.
2 oil-heaters No. 443.	28 atm.	9.3.39.
H.P. cylinder.	21 atm.	9.3.39.
M.P.	11 atm.	12.3.39.
L.P.	2 atm.	" " "



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EVAPORATORS

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

FEED WATER HEATERS

No. *1* Type *surface*
 Makers *Atlas Werke, Bremen*
 Working Pressure *15.5 at.* Test Pressure *38.75 at.* Date of Test *—*

FEED WATER FILTERS

No. *2* Type *coke filter* Size *290 φ*
 Makers *Bremer Vulkan*
 Working Pressure *14 at.* Test Pressure *28 at.* Date of Test *—*

STEERING ENGINE

No. *1* Type *2 cyl. vertical* Size *N 54/5* Date of Test *29.5.34*
 Makers *M. Achgelis Söhne*

WINDLASS

No. *1* Type *fish winch* Size *N 550* Date of Test *29.5.34*
 Makers *M. Achgelis Söhne*

LIST OF AUXILIARY MACHINERY

2 feed water pumps
1 air pump
1 bilge pump
1 general service pump
1 circulating pump
1 fan engine
1 bilge ejector
1 fuel transfer pump
2 oil fuel service pumps
1 dynamo



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SPARE GEAR

No. of Top End Bolts	2	No. of Bot. End Bolts	2	No. of Cylinder Cover Studs	124
" Coupling Bolts	6	" Main Bearing Bolts	2	" Valve Chest "	14
" Junk Ring Bolts	6	" Feed Pump Valves		" Bilge Pump Valves	
" H.P. Piston Rings	124	" I.P. Piston Rings	124	" L.P. Piston Rings	124
" " Springs		" " Springs		" " Springs	
" Safety Valve "		" Fire Bars		" Feed Check Valves	2
" Piston Rods		" Connecting Rods		" Valve Spindles	
" Air Pump Rods		" Air Pump Buckets		" Air Pump Valves	124
" Clr. centrifugal		" Clr. "		" Clr. "	
" Crank Shafts		" Crank Pin Bushes	1	" Crosshead Bushes	
" Propeller Shafts	1	" Propellers	1	" Propeller Blades	-
" Boiler Tubes	6 x 2	" Condenser Tubes	12	" Condenser Ferrules	30.

OTHER ARTICLES OF SPARE GEAR:-

For further spare gear see attached list of builders.

DETAILS OF FIRE EXTINGUISHING APPARATUS

Minimax fire extinguisher
Hose for deck wash line.



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REFRIGERATING PLANT

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

[illegible]

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

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ELECTRIC INSTALLATION

Installation Fitted by

Allgem. Elektr. Ges.

Makers of Dynamos

" " "

Description of Dynamos

*compound*No. of Dynamos *1* Revs. *400* Amps. *39* Volts *115* Total Capacity *4.5* Kw.

Current, Alternating or Continuous

continuous

System of Wiring

2 pool

Position of Dynamos

Eng. R. stb.

Makers of Prime Movers

Bohn & Kähler

Description of Prime Movers

1 cyl. steam eng.

Position of Main Switch Board

stb aft in Eng. R.

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

9

Particulars of these Circuits

for light and wireless

Circuit	Number of Lights	Number of Motors	Number of Heaters	Current Required. Amps.	Size of Cable	Rated Maximum Capacity	Insulation Covering	Resistance per Mile Insulation
No. 1	Eng.	—	—	6 Amps	1.5	2	Navy	
" 2	Bl. R.	—	—	6 "	"	"	cable	
" 3	Phys	—	—	6 "	"	"	"	
" 4	Wireless	—	—	15 "	6	"	"	
" 5	Spare	—	—	6 "	1.5	"	"	
" 6	Sw. board aft	—	—	10 "	2.5	"	"	
" 7	"	" amidships	—	15 "	"	"	"	
" 8	"	" forward	—	10 "	"	"	"	
" 9	7 Nav. lights	—	—	10 "	"	"	"	
Total	69	—	—					



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POSITIONS OF AUXILIARY SWITCH BOARDS

One in messroom amidships
 " " crew's space forward
 " " engineer's " aft

No. of Switches
on each

Are Cut-outs fitted as follows (to both Conductors of Two-Conductor Systems) :—

On Main Switch Board to Cables of each Main Circuit?

yes

On Auxiliary Switch Boards to Cables of each Aux. Circuit?

yes

Wherever a Cable is reduced in size?

yes

To each Lamp Circuit?

yes

Are all Cut-outs and Switches easily accessible?

yes

Are Fuses of standard sizes?

yes

Smallest Conductor used

1.5 mm²

Largest single wire Conductor used

—

Nature of Insulation and Protective Covering of Cables in Engine and Boiler Spaces

Rubber with iron armature

"

"

"

in Saloons, State Rooms, &c.

"

"

"

Insulated Spaces

"

"

"

Exposed to Heat or Damp

rubber
with lead

Nature of Insulation, &c., passing through Bunkers and Cargo Spaces

" " " " " " " Deck Beams and Bulkheads
 Are all Joints in Cables efficiently made, effectively Insulated
 and readily accessible

steel pipe
bkkhd. stuffing
boxes

Have Special Requirements for Ships carrying Low Flash Oil
 been complied with

yes
no

Has it been ascertained by actual Tests that Compasses are not
 injuriously affected

yes

What is the Insulation Resistance over the whole System?

Have the Governing Trials proved satisfactory?

yes

Date of Trial of complete Installation

29.5.33.

Duration of Trial

2 hours



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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. *—*

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.

"Unitas 5"

as ascertained by *me* from personal examination

O. H. Johns.

Surveyor to the British Corporation Register
of Shipping and Aircraft.

It is submitted that this Report be approved,

John King

Chief Surveyor.

6 OCT 1937

Approved by the Committee for the Class of M.B.S.* on the

6th Oct 1937

A. H. Casling

Secretary.



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