

No. 1800

THE BRITISH CORPORATION FOR THE SURVEY

REGISTRY OF SHIPPING.

Report No.

2121

No. in Register Book

3476.

ETMOR

EX

M.S.

MELINGA

Makers of Engines BURMEISTER & WAIN. COPENHAGEN.

Works No. 1397.

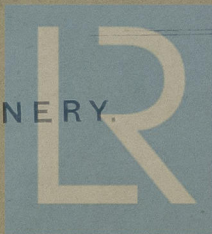
Makers of Main Boilers

Works No.

Makers of Donkey Boiler

Works No.

MACHINERY.



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002978-002988-0066

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office *24th February 1928*

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ^{Single Triple}
^{Twin Quadruple} Screw OIL MOTOR SHIP

"MELINGA"

Official No. Port of Registry **SYDNEY.**

Registered Owners **NORTH COAST STEAM NAVIGATION.**

Engines Built by **BURMEISTER & WAIN.**

at **COPENHAGEN.**

Main Boilers Built by

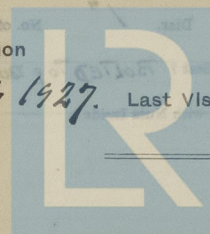
at

Donkey " " "

at

Date of Completion

First Visit *28/7 1927.* Last Visit *21/2 1928* Total Visits *40*



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INTERNAL COMBUSTION ENGINE.RECIPROCATING ENGINESWorks No. 1397. No. of Sets 1. Description Four Stroke Cycle, SingleActing, Forced Lubricated, Direct Reversible Diesel Engine. Trunk Piston
Type.No. of Cylinders each Engine 6 No. of Cranks 6
Diams. of Cylinders 330 ⁷/₁₆ Stroke 600 ⁷/₁₆
Cubic feet in each ~~Top~~ Cylinder 1.8.
Are Spring-loaded Relief Valves fitted to Top and ~~Bottom~~ of each Cyl.? YES.

" " " each Receiver?

Type of H.P. Valves,

" 1st I.P. "

" 2nd I.P. "

" L.P. "

" Valve Gear

" Condenser

Cooling Surface sq. ft.

Diameter of Piston Rods (plain part) 110 ⁷/₁₆ Screwed part (bottom of thread)

Material "

Diam. of Connecting Rods (smallest part) 110 ⁷/₁₆ Material S.M.S." Crosshead Gudgeons 120 ⁷/₁₆ Length of Bearing 180 ⁷/₁₆ Material —

No. of Crosshead Bolts (each) Diam. over Thrd. Thrds. per inch Material

" Crank Pin " " 4. " 1 ⁷/₈" " 4 ¹/₂" " S.M.S." Main Bearings 9. Lengths 158 ⁷/₁₆

" Bolts in each Diam. over Thread Threads per inch Material

" Holding Down Bolts, each Engine 66. Diam. 1" No. of Metal Chocks —Are the Engines bolted to the Tank Top or to a Built Seat? Bolted 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 Mrs. BURMEISTER & WAIN.

Piston " "

Crossheads, " "

Connecting Rods, Finished by — " —

Piston " "

Crossheads, " "

Date of Harbour Trial 14-16/2 1928." Trial Trip 17/2 1928.Trials run at PresinaWere the Engines tested to full power under Sea-going conditions? yes.If so, what was the I.H.P.? 450/550Revs. per min. 190/205

Pressure in 1st I.P. Receiver, lbs., 2nd I.P., lbs., L.P., lbs., Vacuum, ins.

Speed on Trial 9 to 9.9 Knots.

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

data:—

Builders' estimated I.H.P. 450.Revs. per min. 190Estimated Speed 9 Knots.

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TURBINE ENGINES.

Works No. 1397.
 No. of H.P. Turbines No. of I.P. No. of L.P. No. of Stern

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

Is Single or Double Reduction Gear 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 H.P. Turbines at Full Power

" " I.P. " "

" " L.P. " "

" " 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

The British Corporation for the Survey and Registry of Shipping.

INTERNAL COMBUSTION ENGINES.

Vessel's Name, *Albion*

Built by *A/S. Burmeister & Wain, Copenhagen.*

Ship No. 546.

ENGINES, Single or Twin-Screw, *single.*

Estimated B.H.P., 340

Built by *A/S Burmeister & Wain, Copenhagen.*

Works No., 1397.

Description, *four stroke cycle, single acting, forced lubricated, direct reversible. Diesel engine. Trunk piston type.*

No. of Working Cylinders (each Engine), 6

Cub. Ft., each Cyl., 1.8

Diar. of " *330 mm = 13"*

Stroke, *600 mm = 23.6"* Estimated Revs. per Min., 185

Diar. of Crank Shaft (made), *204 mm* Thrust, *204 mm* Intermed., *6 1/2"* Propeller, *7"*

" " (by rule), *199 mm* " *5.9"* " *5.6"* " *6.2"*

No. of Main Bearings, 8

Length, *158 mm*

Dist. between Edges, *402 mm*

Thickness of Web (made), *120 mm*

Breadth of Web, *450 mm*

" " (by rule),

Diar. of Propellers, *7'-0"*

Pitch, *5'-6"*

Surface (each), *12.6 sq ft*

Coeff. of Displacement at 4/5th Mld. Depth, *0.701*

Max. Initial Working Pressure, *500 lbs/sq inch.*

Estimated Mean Pressure, *100 lbs/sq inch*

No. of Scavenging Pumps, *none* Diar.,

Stroke, —

Description,

Pressure of Scavenging Air, —

No. of Main Air Compressors, 1

No. of Stages (each), 3

Stage 1:—Diar., *320 mm A.*

Stroke, *250 mm*

Pressure, *5 kg/cm²*

Stage 2:— " *280 mm B.*

" *250 mm*

" *25 kg/cm²*

Stage 3:— " *63 mm C.*

" *250 mm*

" *65 kg/cm²*

Description, *see sketch.*

Vertical, single acting, three stage compressor, coupled direct to main motor and forced lubricated.

No. of Auxiliary Air Compressors, 1

No. of Stages (each), 3

Stage 1:—Diar., *210 mm A.*

Stroke, *216 mm*

Pressure, *5 kg/cm²*

Stage 2:— " *176 mm B.*

" *216 mm*

" *22 kg/cm²*

Stage 3:— " *45 mm C.*

" *216 mm*

" *65 kg/cm²*

Description, *see sketch.*

Vertical, single acting, three stage compressor, coupled direct to auxiliary motor.

No. of Emergency air Compressor, 1

Stage 1:—Diar., *90 mm.*

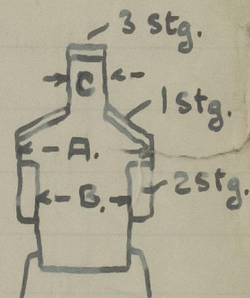
Stroke, *120*

Stage 2:— " *35 mm*

" *120*

No. of Stages, 2

driven by hand.



Survey and Registry of Shipping.

ATION ENGINES.

hagen.

Ship No. 546.

Estimated B.H.P., 340

hagen.

Works No., 1397.

ing, forced lubricated, direct reversible.

Cub. Ft., each Cyl., 1.8

300 mm 23.6 Estimated Revs. per Min., 185

Intermed., 6½" Propeller, 7"

" 5.6" " 6.2"

Dist. between Edges, 402 mm

Breadth of Web, 450 mm

6" Surface (each), 12.6 sq ft

Estimated Mean Pressure, 100 lbs/sq inch

Stroke, —

DESCRIPTION OF INSTALLATION.



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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

" 1st " Wheel

Width

Pitch of Teeth

Estimated Pressure per lineal inch

Diar. 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

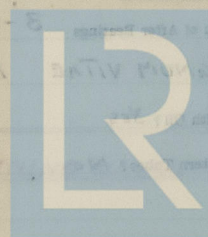
Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.



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SHAFTING.

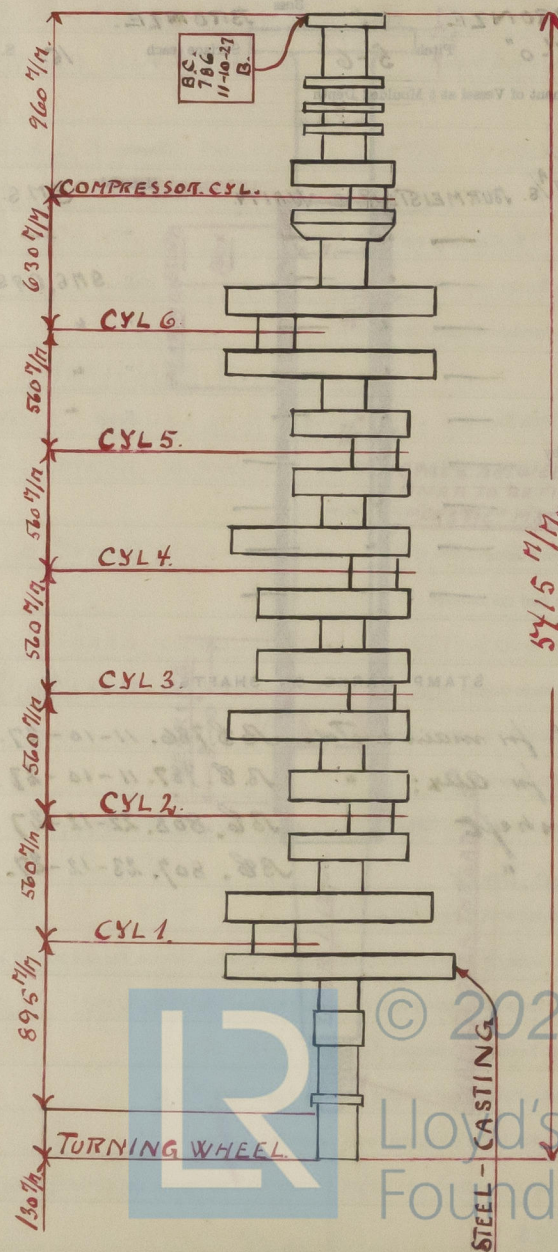
Are the Crank Shafts Built or Solid? *BUILT.*No. of Lengths in each *1.*Angle of Cranks *120°*Diar. by Rule *199 7/16*. Actual *204 7/16*. In Way of Webs *212 7/16*." of Crank Pins *220 7/16*. Length between Webs *154 7/16*.Greatest Width of Crank Webs *450 7/16*. Thickness *120 7/16*.Least " " *450 -* " *104 -*Diar. of Keys in Crank Webs *25 -* Length *52 -*

" Dowels in Crank Pins Length Screwed or Plain

No. of Bolts each Coupling *8.* Diar. at Mid Length *47 7/16* Diar. of Pitch Circle *300 7/16*.Greatest Distance from Edge of Main Bearing to Crank Web *4 7/16*.Type of Thrust Blocks *B&W. TYPE. FORCED LUBRICATED.*No. " Rings *20-15*Diar. of Thrust Shafts at bottom of Collars *204 7/16*.No. of Collars *3.*" " Forward Coupling *-*At Aft Coupling *204 7/16*Diar. of Intermediate Shafting by Rule *5.6"* Actual *6 1/4"* No. of Lengths *1.*No. of Bolts, each Coupling *6-8.* Diar. at Mid Length *47 7/16* Diar. of Pitch Circle *10 1/4"*Diar. of Propeller Shafts by Rule *6.18"* Actual *7"* At Couplings *6 7/8"*Are Propeller Shafts fitted with Continuous Brass Liners? *YES.*Diar. over Liners *8 1/8" - 8 1/4"* Length of After Bearings *3'-0"*Of what Material are the After Bearings composed? *LIGNUM VITAE BRASS BUSH.*Are Means provided for lubricating the After Bearings with Oil? *YES.*" " to prevent Sea Water entering the Stern Tubes? *NO.*

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.



No. of Blades each Propeller

4.

Fitted or Solid?

SOLID.

Material of Blades

BRONZE

Boss

BRONZE.

Diam. of Propellers

7'-0"

Pitch

5'-6"

Surface (each)

1/6 S. ft.

Coefficient of Displacement of Vessel at Moulded Depth

Crank Shafts Forged by

1/8.

BURMEISTER & WAIN.

Material

S.M.S.

Pins

Webs

Thrust Shafts

Intermed. „

Propeller „

Crank „ Finished by

Thrust „

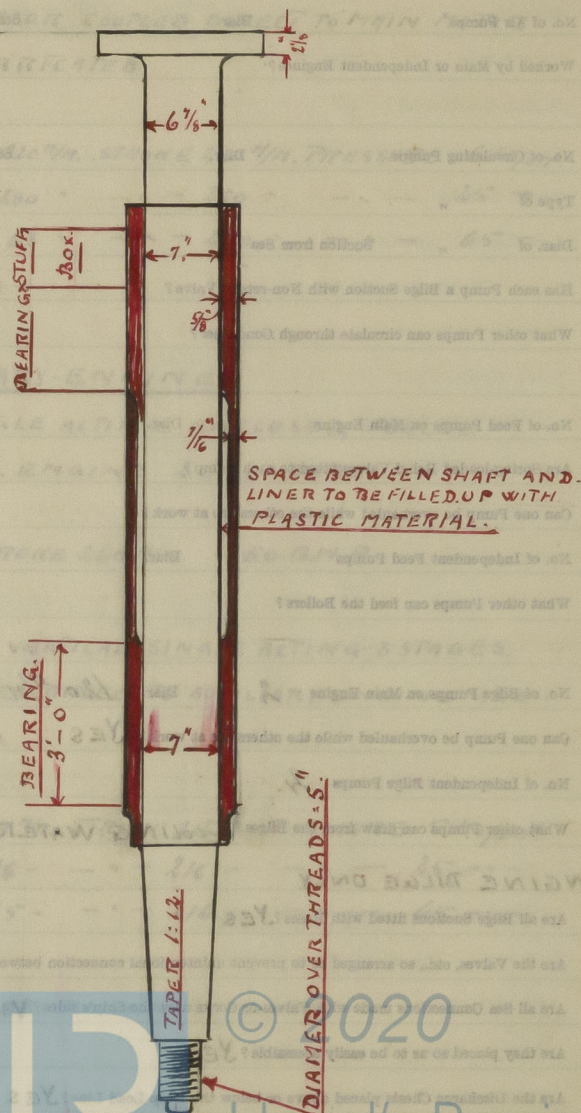
Intermed. „

Propeller „

STAMP MARKS ON SHAFTS.

Crank shaft for main motor. B.C. 786. 11-10-27.
 „ „ for aux: „ B.C. 787. 11-10-27
 Intermediate shaft B.C. 808. 22-12-27
 Propeller „ B.C. 807. 23-12-27.

SKETCH OF PROPELLER SHAFT.



PUMPS, ETC. TO MOTORS

No. of Air Pumps Diar. Stroke

Worked by Main or Independent Engines?

No. of Circulating Pumps Diar. Stroke

Type of "

Diar. of " Suction from Sea

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

What other Pumps can circulate through Condenser?

No. of Feed Pumps on Main Engine Diar. Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

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

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine 2. Diar. 120 ^m/h. Stroke 120 ^m/h.

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

No. of Independent Bilge Pumps 2.

What other Pumps can draw from the Bilges? COOLING-WATER-PUMP

ENGINE BILGE ONLY.

Are all Bilge Suctions fitted with Roses? YES.

Are the Valves, etc., 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? VALVES.

Are they placed so as to be easily accessible? YES.

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

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.

1. MAIN AIR COMPRESSOR, VERTICAL, SINGLE ACTING
3. STAGE COMPRESSOR COUPLED DIRECT TO MAIN MOTOR
AND FORCED LUBRICATED.

STAGE I DIAR. 320 ^m/h. STROKE 250 ^m/h. PRESSURE 5 kg/cm².

" II " 280 " " " 250 " " " 25 " "

" III " 63 " " " 250 " " " 65 " "

AUXILIARY-ENGINE.

1. FOUR CYCLE, SINGLE ACTING ENCLOSED, FORCED.
LUBRICATED. DIESEL ENGINE 3 CYLINDERS.

DIAR: 230 ^m/h. STROKE 260 ^m/h. - 50 B.H.P.

1. AIR COMPRESSOR, VERTICAL SINGLE ACTING 3 STAGES.
COMPRESSOR COUPLED DIRECT TO AUXILIARY ENGINE AND
FORCED LUBRICATED.

STAGE I. DIAR. 210 ^m/h. STROKE 216 ^m/h. PRESSURE 5 kg/cm².

" II " 176 " " " 216 " " " 25 " "

" III " 45 " " " 216 " " " 65 " "

2. STAGE COMPRESSOR, DRIVEN BY HAND.



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BOILERS.

Works No.

No. of Boilers

Type

Single or Double-ended

No. of Furnaces in each

Type of Furnaces

Date when Plan approved

Approved Working Pressure

Hydraulic Test Pressure

Date of Hydraulic Test

" when Safety Valves set

Pressure at which Valves were set

Date of Accumulation Test

Maximum Pressure under Accumulation Test

System of Draught

Can Boilers be worked separately?

Makers of Plates

" Stay Bars

" Rivets

" Furnaces

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?

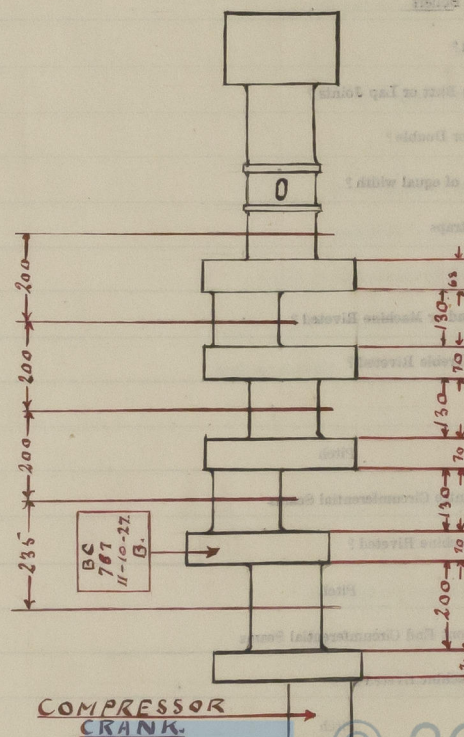
No. of Pressure Gauges, each Boiler

No. of Water Gauges

" Test Cocks

" Salinometer Cocks

SKETCH OF CRANK-SHAFT.

AUXILIARY-MOTOR.

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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

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



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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

Thickness per Inch

Dist. of Stays Approved

" " " " " in Boilers

" " " " "

Thickness of Front Tube Plates Approved

" " " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

" " " " " in Boilers

" " " " " Stay Tubes at

" " " " " Stay Tubes fitted with Nuts at Front End

Thickness of Back Tube Plates Approved

" " " " " in Boilers

Pitch of Stay Tubes at Back Tube Plates

" " " " "

Thickness of Stay Tubes

" " " " "

Thickness of Tubes

" " " " "

Thickness of Bottom Plates Approved

" " " " " in Boilers

" " " " " outside of Boilers

" " " " " (Front to Back)



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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



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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 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. Dia.

Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Boilers

Thickness of Plates

Description of Beams in Boiler Crowns

Dist. of River Hole

Height of Firebox Crown above Fire Grate

Are Firebox Crowns Flat or Dished?

Internal Radius of Dished Crowns

Thickness of Plates

No. of Crown Stays

Material

Internal Dist. of Tubes at Top

Bottom

No. of Water Tubes

Thickness

Material of Water Tubes

Dist.

Size of Manhole in Shell

Dimensions of Longitudinal Stay

Location, number, each boiler

(size boiler)

SUPERHEATERS

Description of Superheaters

When elevated?

When taken down?

Can Superheaters be taken down and re-erected?

No. of Stays? Give an exact description

Dist. of Stays from each boiler

Dist. of Stays from each boiler

Dist. of Stays from each boiler

Dist. of Stays from each boiler

Dist. of Stays from each boiler



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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 Easing Gear?

Date of Hydraulic Test

Test Pressure

Date when Safety Valves set

Pressure on Valves

MAIN STEAM PIPES



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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

STEAM EVAPORATORS.

No.

Type

Working Pressure

Date of Test of Safety Valves under Steam

Test Pressure

Date of Test

Test per Day

FEED WATER HEATERS.

No.

Type

Working Pressure

Date of Test

Test Pressure

FEED WATER FILTERS.

No.

Type

Working Pressure

Date of Test

Test Pressure



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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.	Type		
Makers			
Working Pressure	Test Pressure		Date of Test

FEED WATER FILTERS.

No.	Type	Size
Makers		
Working Pressure	Test Pressure	Date of Test

LIST OF DONKEY PUMPS.

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SPARE GEAR

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	" L.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:— MAIN - MOTOR.

- 1 CYLINDER-COVER WITH STUDS & NUTS.
- 1 CYLINDER LINER.
- 1 SET OF CRANK-PIN BRASSES WITH BOLTS & NUTS.
- 1 - " GUDGEON PIN BUSHES
- 1 - " MAIN BEARING BRASSES
- 1 PISTON COMPLETE WITH RINGS.
- 2 SET OF PISTON RINGS.
- 1 INLET VALVE COMPLETE
- 6 EXHAUST — " —
- 3 — " — SEATS.
- 3 FUEL " — COMPLETE
- 2 SPINDLES FOR FUEL VALVES
- 3 LOOSE BOTTOMS FOR — " —
- 1 STARTING VALVE COMPLETE.
- 1 SET OF SPARE PARTS FOR FUEL PUMP.

1 SET OF PISTON RINGS FOR AIR COMPRESSOR.

7 VALVES COMPLETE — " —

AUXILIARY-MOTOR.

1 SET OF CRANK-PIN BRASSES WITH BOLT & NUTS

1 - " - GUDGEON PIN BUSHES.

1 - " - MAIN BEARING BRASSES.

1 - " - PISTON RINGS FOR 1 PISTON

1 EXHAUST VALVE COMPLETE.

1 FUEL — " —

1 SET OF VALVES FOR AIR COMPRESSOR.

1 - " PISTON RINGS, EACH SIZE WITH INTERMEDIATE RINGS.

FOR AIR COMPRESSOR.

DYNAMO & ELECTRIC-MOTORS.

1 SPARE ARMATURE WITH SHAFT FOR 33 KW DYNAMO.

1 SET BRUSHES FOR SAME.

1 SPARE ARMATURE WITH SHAFT FOR ELECTRIC-MOTOR.

FOR COMBINED FUEL OIL & LUBRICATING OIL PUMPS.

1 SET OF BRUSHES FOR SAME.

SHAFTING.

1 SET OF COUPLING BOLTS FOR 1 FLANGE

1 PROPELLER. (CAST-IRON)

1 TEMPLATE FOR PROPELLER-SHAFT TAPER.

1 - " - SHAFT-COUPLINGS.

2 NH₃ PRESSURE GAUGES.
 1 ARMATURE FOR COMPRESSOR MOTOR
 1 SET OF MAIN BEARING BUSHES.
 1 " " CONNECTING ROD BUSHES.
 1 " " BRUSH HOLDER FOR COMPRESSOR MOTOR
 1 " " CARBON BRUSHES.
 1 " " CONTACT FINGERS SPRINGS, SCREWS E.T.C.
 FOR MOTOR STARTERS.

1 SET. $\frac{3}{8}$ " NH₃ REGULATING VALVE.
 1 " " " STOP " "

6 TUBES FOR CONDENSER.

24. RUBBER RINGS " "
 1 LENGTH $1\frac{1}{4}$ " NH₃ PIPES.

2 " " 1" " "

2 " " $\frac{3}{8}$ " " "

1 " " $\frac{1}{4}$ " CHARGING " "

1 " " VALVE.

2 SETS $1\frac{1}{4}$ " FLANGES FOR NH₃.

2 " " 1" " " "

2 " " $\frac{3}{8}$ " " "

1 THERMOMETER + 10° To + 110° F.

1 " " 0° To + 70° F.

A SUPPLY OF PACKINGS & JOINT RINGS

ELECTRIC LIGHTING.

Installation Fitted by *M/S. BURMEISTER & WAIN.*

No. and Description of Dynamos *2. COMPOUND WOUND DIRECT.*

Makers of Dynamos *M/S. TITAN COPENHAGEN*

Capacity " *33 - 5 kw.* Amperes, at *150 - 22.7* Volts, *220* Revols. per Min *500 - 1250*.

Current Alternating or Continuous *CONTINUOUS.*

Single or Double Wire System *DOUBLE*

Position of Dynamos *ENGINE ROOM.*

" Main Switch Board " " "

No. of Circuits to which Switches are provided on Main Switch Board *11.*

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor. mm ²	Current Density. AMP	Conductivity of Conductor.	Insulation Resistance per Mile. MEG OHM.
#1 33 KW DYN			150.	95.		$\frac{1}{57}$	500
MO							
#2 WINDLASS.			46.	70			
2 WINGH			114.				
3. CAPSTAN.			26.	6.	4.3		
4. BALLAST PUMP.			35.	10.	3.6		
5. OIL PUMPS.			35.	10	3.6		
6. STEERING GEAR.			10.	4.			
7. REFRIGERATOR.			35.	10.	3.5	"	
8. SHORE CONNECTION				35		"	
9. FRESH WATER PUMP.			25.	10.	2.5		
10. ELECTRIC LIGHT.			40	16.	3.0		
11. 5 KW DYNAMO.			22.7	6.	3.6		

Total No. of Lights *83.* No. of Motors *13* No. of Heaters *0.*

Current required for Motors and Heaters *370 AMP. TOTAL.*

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

Are Out-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits

YES.

On Aux. " " each Auxiliary Circuit

YES.

Wherever a Cable is reduced in size

YES.

To each Lamp Circuit

YES.

To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted

YES.

Are the Fuses of Standard Sizes?

YES.

Are all Switches and Out-outs constructed of Non-inflammable Material?

YES.

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

YES.

Smallest Single Wire used, $\frac{1}{16}$ mm. Largest, $\frac{1}{5}$ mm.

How are Conductors in Engine and Boiler Spaces protected?

LEAD COVERED & STEEL WIRE ARM.

" Saloons, State Rooms, &c., " ?

LEAD COVERED

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " passing through Bulkheads or Cargo Spaces

STEEL ARM CABLES USED.

(3) " " Deck Beams or Bulkheads

WHERE NECESSARY

BUSHE WITH LEAD & WATER TIGHT GLANDS USED.

Are all Joints in Cables properly soldered and thoroughly insulated so that the efficiency of the Cables is unimpaired? YES.

Are all Joints in accessible positions, none being made in ~~bulk~~ or Cargo Spaces? YES.

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? YES.

Have Tests been made to prove that this condition has been satisfactorily fulfilled? YES.

Has the Insulation Resistance over the whole system been tested? YES.

What does the Resistance amount to?

500 000

Ohms.

Is the Installation supplied with a Voltmeter? YES.

" " " an Ampere Meter? YES.

Date of Trial of complete Installation

17/2 1928

Duration of Trial

6 Hours

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?

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 M.S. *Helinga*

as ascertained by ^{us}me from personal examination

[Signature]
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.O. Cub. ft.	:	:	
	£	:	:
Testing, &c. ...	:	:	
	£	:	:
Expenses ...	:	:	
Total ...	£	:	:

It is submitted that this Report be approved,

[Signature]
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the 7TH MARCH 1928

Fees advised

Fees paid



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[Signature]
Secretary.

*The British Corporation Register
of Shipping and Aircraft.
Glasgow.*

M/S. "MELINGA".

Hydraulic Test on Main Engine no.1397.

Article:	Date:	Pressure:
1 Oil cooler engine no.1397	12/9-27	10 atm.
H.P. Compressor cylinder	20/9 "	130 "
M.P. Air cooler in airspace	24/9 "	40 "
L.P. " " " "	24/9 "	100 lbs.
H.P. Air cooling coil	26/9 "	130 atm.
M.P. and L.P. Compressor cylinder on water side	26/9 "	100 lbs.
H.P. Compressor cooling jacket	3/10 "	50 "
1 Fuel oil pump on discharge side	8/10 "	150 atm.
1 do. " suction side	8/10 "	10 "
Starting air automatic valve chest	17/10 "	50 "
6 Cylinder covers and jackets	19/10 "	50 "
Starting air reservoir	22/11 "	40 "
1 Spare liner and cover	10/12 "	50 lbs.
1 Blast air bottle and head no.152443	10/12 "	2000 "
2 " " " " no.152441 & 152442	10/12 "	2000 "
Starting air pipes	11/2-28	50 atm.
Blast air pipe	13/2 "	2000 lbs.
M.P. and L.P. air cooler on water side	28/9-27	100 "

Hydraulic Test on Auxil. Engine no. 1398 :

H.P. Compressor cylinder	12/9-27	130 atm.
H.P. Air cooling coil	16/9-	130 "



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T OIT COOTER EDITE NO. 1933

13/0-33 10 WCH

VICTORS:

DATE: 13/0-33

13/0-33 10 WCH

13/0-33 10 WCH

M/S. "MEELINGA".

-2-

Article:	Date:	Pressure:
M.P. and L.P. Air cooler on water side	26/9-27	50 lbs.
2 Cylinder jackets	3/10 "	50 "
E.P. Air Cooler in airspace	18/10 "	100 "
L.P. Air cooler on water side	20/10 "	50 "
1 Blast air bottle and head no. 152444	10/12 "	2000 "

All articles dated as above and stamped B.C.

The main engine was tested in workshop from the 25/11.27 - 3/12.27.

Revolutions per minute 185.

Pressure 7,5 kg. pr. sq. cm.

B.H.P. 361.

Copenhagen, the 21st February 1928.

Surveyor to

The British Corporation Register

[Signature]



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