

No. 2184

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2113 No. in Register Book 3467

S.S. "FASTNET" N.N. "GREYPOINT"

Makers of Engines THE CALEDON S. & E. CO. LTD

Works No. 515

Makers of Main Boilers THE CALEDON S. & E. CO. LTD

Works No. 515

Makers of Donkey Boiler COCHRAN & CO. (ANNAN) LTD

Works No. 10546

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 4113 No. in Register Book 3467

Received at Head Office 28th April 1928.

Surveyor's Report on the New Engines, Boilers, and Auxiliary

Machinery of the Single Triple Double Quadruple Screw STEAMSHIP

FASTNET

Official No.

Port of Registry

GLASGOW

Registered Owners

THE CLYDE SHIPPING CO. LTD.

Engines Built by

THE CALEDON S. & E. CO. LTD.

at

DUNDEE

Main Boilers Built by

THE CALEDON S. & E. CO. LTD.

at

DUNDEE

Donkey

COCHRAN & CO. (ANNAN) LTD.

at

ANNAN

Date of Completion

First Visit

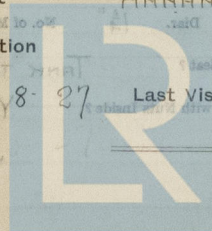
11-8-27

Last Visit

11-2-28

Total Visits

14



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| Works No. | No. of Sets | Description |
|-----------|-------------|-------------|
| 515 | ONE | |

TRIPLE EXPANSION, SURFACE CONDENSING, DIRECT ACTING

| | | | |
|------------------------------|---------------|---------------|-----|
| No. of Cylinders each Engine | 3 | No. of Cranks | 3 |
| Diars of Cylinders | 20", 33", 53" | Stroke | 38" |

Cubic feet in each L.P. Cylinder 49.8

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

" " " each Receiver ?

TOP ONLY.

Type of H.P. Valves, Piston

" 1st I.P. " SLIDE

" 2nd I.P. "

" L.P. " DOUBLE PORTED SLIDE

" Valve Gear STEPHENSON'S LINK MOTION

Condenser BUILT Cooling Surface 1900 sq. ft.

Diameter of Piston Rods (plain part) $5\frac{1}{2}$ " Screwed part (bottom of thread) 4"

| | | |
|----------|---|------------|
| Material | " | MILD STEEL |
|----------|---|------------|

| | | | |
|---|-----------------|----------|-------|
| Diarr. of Connecting Rods (smallest part) | $5\frac{1}{4}"$ | Material | STEEL |
|---|-----------------|----------|-------|

„ Crosshead Gudgeons $5\frac{1}{2}''$ Length of Bearing $6\frac{1}{2}''$ Material STEEL

No. of Crosshead Bolts (each) 4 Diar. over Thrd. $2\frac{1}{4}$ " Thrds. per inch 6 Material CABLE IRON

" Crank Pin " " 2 " $3\frac{1}{4}$ " " 6 "

„ Main Bearings 6 Lengths 11 $\frac{5}{8}$ ''

„ Bolts in each 2 Diam. over Thread $2\frac{1}{2}$ " Threads per inch 6 Material STEEL

| | | | | | |
|-----------------------------------|----|-------|------------------|---------------------|----|
| " Holding Down Bolts, each Engine | 82 | Diar. | $1\frac{1}{4}$ " | No. of Metal Chocks | 82 |
|-----------------------------------|----|-------|------------------|---------------------|----|

Are the Engines bolted to the Tank Top or to a Built Seat?

TANK TOP

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside?

YES

If not, how are they fitted?

| | | | | |
|--------|---|---|----|-----------------|
| Piston | " | " | No | Type of Turbine |
|--------|---|---|----|-----------------|

Crossheads, No. of A. No. of L.P. No. of L.P.

Connecting Rods, Finished by THE CALEDON S. & E. CO. LTD

| | | | |
|--------|---|---|---|
| Piston | " | " | Effect by the Turbine or through Gearing? |
|--------|---|---|---|

Crossheads,

Date of Harbour Trial 1-2-28

„ Trial Trip 11-2-28

Trials run at Firth of Tay

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

If so, what was the I.H.P.? 1756 Revol

| | | |
|--------------------------------|-----------------|-------------|
| Pressure in 1st I.P. Receiver, | lbs., 2nd I.P., | lbs., L.P., |
|--------------------------------|-----------------|-------------|

Speed on Trial. 13.5 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. 1800 MAXIMUM Revs. per min. 106

Estimated Speed 13 KNOTS.

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TURBINE ENGINES.

Works No. Type of Turbines
 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?

Diam. of 1st Reduction Pinion } Width Pitch of Teeth
 " 1st " Wheel

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion } Width Pitch of Teeth
 " 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of H.P. Turbines at Full Power S.H.P.

" " 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

DESCRIPTION OF INSTALLATION.

No. of Turbine-Generating Sets Capacity of each

Type of Turbines employed

Description of Generator

No. of Motors driving Propeller Shafts

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 } Width Pitch of Teeth

" 1st " Wheel

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion } Width Pitch of Teeth

" 2nd " Wheel

Estimated Pressure per lineal inch

Revs. per min. of Generator at Full Power

" " Motors

" " 1st Reduction Shaft

" " 2nd " "

" " Propeller 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.



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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 Gears

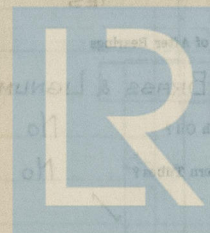
Turbine Spindles forged by

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

ONE

Angle of Cranks

120°

Diar. by Rule

10' 6.55

Actual

11"

In Way of Webs

11"

" of Crank Pins

11"

Length between Webs

12 3/4"

Greatest Width of Crank Webs

1' - 8 3/4"

Thickness

7"

Least

" "

1' - 8 3/4"

"

7"

Diar. of Keys in Crank Webs

1 3/8"

Length

4 3/4"

" Dowels in Crank Pins

1 1/4"

Length

Screwed or Plain

SCREWED

No. of Bolts each Coupling

6

Diar. at Mid Length

2 1/2"

Diar. of Pitch Circle

1' - 4 3/4"

Greatest Distance from Edge of Main Bearing to Crank Web

7"

Type of Thrust Blocks

MICHELL, TYPE "B"

No. " Rings

ONE

Diar. of Thrust Shafts at bottom of Collars

11"

No. of Collars

ONE

" " Forward Coupling

11"

At Aft Coupling

11"

Diar. of Intermediate Shafting by Rule

10' 1.48"

Actual

10 1/2"

No. of Lengths

3

No. of Bolts, each Coupling

6

Diar. at Mid Length

2 1/2"

Diar. of Pitch Circle

1' - 4 3/4"

Diar. of Propeller Shafts by Rule

11' 2.73"

Actual

11 1/2"

At Couplings

11 5/8"

Are Propeller Shafts fitted with Continuous Brass Liners?

YES

Diar. over Liners

13" & 13 3/8"

Length of After Bearings

4' - 1 3/4"

Of what Material are the After Bearings composed?

BRASS & LIGNUMVITÆ

Are Means provided for Lubricating the After Bearings with Oil?

No

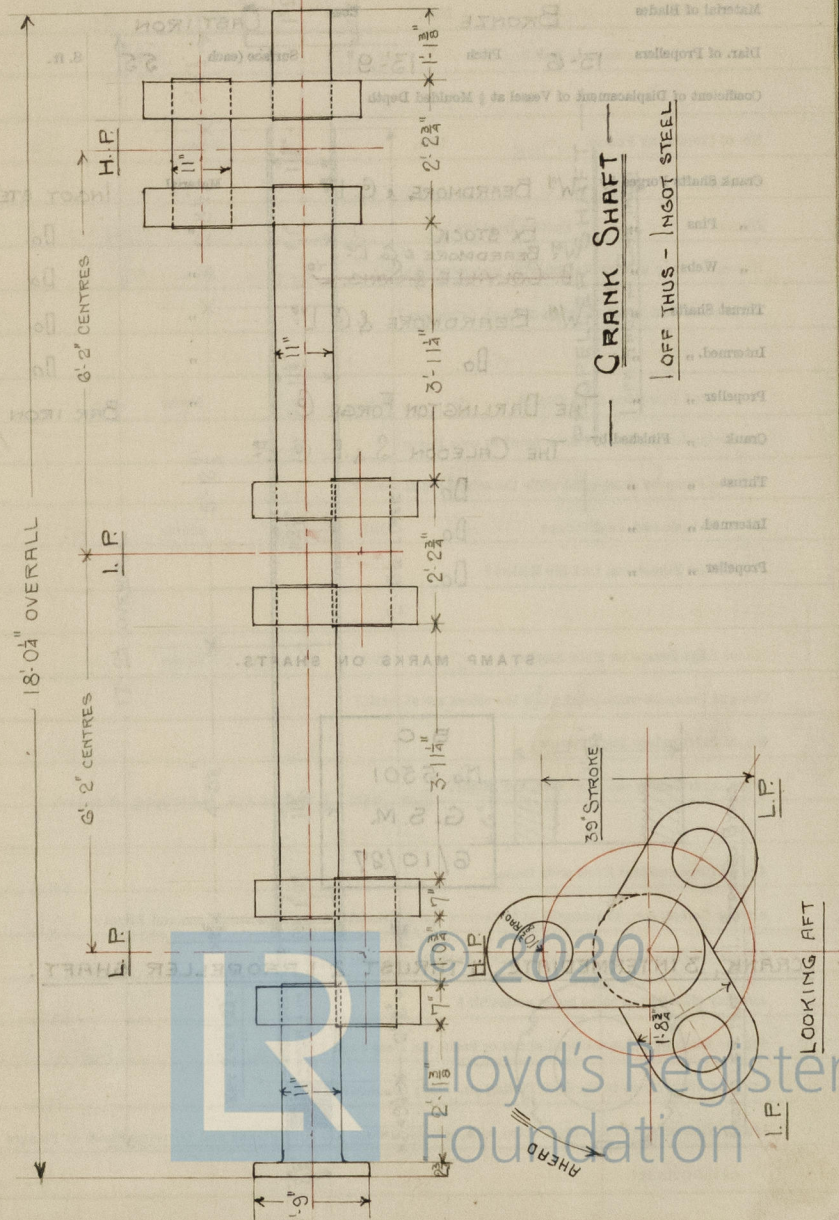
" " to prevent Sea Water entering the Stern Tubes?

No

If so, what Type is adopted?

✓

SKETCH OF CRANK SHAFT.



Worked by Main or Independent Engines? MAIN

Type of " *CENTREFLAG*

| | | | |
|----------|---|------------------|---|
| Diar. of | " | Suction from Sea | " |
|----------|---|------------------|---|

Has each Pump a Bilge Suction with Non-return Valve? YES Diar. 7 1/2

What other Pumps can circulate through Condenser ?

| | | | | | |
|----------------------------------|---|-------|------------------|--------|-----|
| No. of Feed Pumps on Main Engine | 2 | Diar. | $3\frac{1}{4}$ " | Stroke | 20" |
|----------------------------------|---|-------|------------------|--------|-----|

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. | 8 1/2" | Stroke | 18" |
|-------------------------------|---|-------|--------|--------|-----|

What other Pumps can feed the Boilers?

| | | | | | |
|-----------------------------------|---|-------|--------|--------|-----|
| No. of Bilge Pumps on Main Engine | 2 | Diar. | 3 1/4" | Stroke | 20" |
|-----------------------------------|---|-------|--------|--------|-----|

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

No. of Independent Bilge Pumps

What other Pumps can draw from the Bilges? BALLAST & GENERAL SERVICE PUMPS

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? BOTH

Are they placed so as to be easily accessible? YES

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

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?

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BOILERS.

Works No. 515

No. of Boilers 2 Type CYLINDRICAL MULTITUBULAR

Single or Double-ended SINGLE

No. of Furnaces in each 3

Type of Furnaces DEIGHTON

Date when Plan approved 28-4-27 (MAIN) 30-6-27 (DONKEY)

Approved Working Pressure 185 LBS.

Hydraulic Test Pressure 328 LBS.

Date of Hydraulic Test SEE OPPOSITE PAGE

" when Safety Valves set 1-2-28

Pressure at which Valves were set 185 LBS.

Date of Accumulation Test 1-2-28

Maximum Pressure under Accumulation Test 185 LBS.

System of Draught NATURAL

Can Boilers be worked separately? YES

Makers of Plates W^M BEARDMORE & CO. L^{TD}.

" Stay Bars STEEL: - D. COLVILLE & SONS, L^{TD}. IRON: - ROBERT HEATH & LOWMOOR, L^{TD}.

" Rivets THE RIVET, BOLT

" Furnaces W^M BEARDMORE & CO. L^{TD}.

Greatest Internal Diam. of Boilers 15'-6"

" " Length " 13'-0"

Square Feet of Heating Surface each Boiler 2550

" " Grate " 675

No. of Safety Valves each Boiler 2 Rule Diam. $2\frac{1}{4}$ " HIGH LIFT Actual $2\frac{1}{2}$ " (COCKBURN'S)

Are the Safety Valves fitted with Easing Gear? YES

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

" Test Cocks " " Salinometer Cocks 1

STAMP MARKS ON BOILERS

MAIN BOILERS

B.C. TEST
No. 5038
T.P. 328 Lbs.
W.P. 185 Lbs.
G.S.M.
9/11/27

DONKEY BOILER

B.C. TEST
No. 5035
T.P. 200 Lbs.
W.P. 100 Lbs.
G.S.M.
17/10/27

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

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

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 **ONE**

Plates in each Strake **3**

Thickness of Shell Plates Approved **$1\frac{19}{64}$**

in Boilers **$1\frac{5}{16}$ B.**

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 **1"**

inside **$1\frac{1}{8}$ "**

Are Longitudinal Seams Hand or Machine Riveted? **MACHINE**

Are they Single, Double, or Treble Riveted? **3**

No. of Rivets in a Pitch **5**

Diam. of Rivet Holes **$1\frac{5}{16}$ "** Pitch **$9\frac{1}{2}"$**

No. of Rows of Rivets in Centre Circumferential Seams **✓**

Are these Seams Hand or Machine Riveted? **✓**

Diam. of Rivet Holes **$1\frac{5}{16}$ "** Pitch **$9\frac{1}{2}"$**

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

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

Diam. of Rivet Holes **$1\frac{5}{16}$ "** Pitch **4"**

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

Are these Seams Hand or Machine Riveted? **MACHINE**

Diam. of Rivet Holes **$1\frac{5}{16}$ "** Pitch **4"**

Size of Manholes in Shell **$16" \times 12"$**

Dimensions of Compensating Rings **$3'3" \times 2'11" \times 1\frac{19}{64}"$**



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Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " Approved $2\frac{1}{2}$ " Threads per Inch" " " " " in Boilers $2\frac{1}{2}$ "

Material of " " "

How are Stays Secured? Approved

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 $\frac{8}{8}$ " Threads per Inch" " " in Boilers $\frac{8}{8}$ "

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

Description of Compensating Ring

 $\frac{1}{32}$ " $\frac{1}{32}$ " $1\frac{1}{2} \times 1\frac{1}{2}$ "

6

6

STEEL

DOUBLE NUTS

 $\frac{1}{32}$ "

Riveted

Doubling

 $\frac{25}{32}$ " $\frac{25}{32}$ " $8 \times 8\frac{3}{4}$ "

9

9

IRON

YES

 $\frac{25}{32}$ " $\frac{25}{32}$ " $8 \times 8\frac{3}{4}$ " $\frac{7}{8}$ " $\frac{7}{8}$ " $\frac{7}{8}$ " $\frac{7}{8}$ "

3

Diar. of Stays Approved $2\frac{1}{2}$ " Threads per Inch" " " " " in Boilers $2\frac{1}{2}$ "

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

" " " " "

Thickness of Stay Tubes

" " " " "

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 " " " in Boilers

Pitch of Stay Tubes in " " "

Pitch of Stay Tubes in " " "

Pitch of Stay Tubes in " " "



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| | | | |
|---|-------------|------------------|-----------------------|
| Diar. of Stays Approved | 2" 8 2 1/4" | Threads per Inch | 6 |
| " " in Boilers | 2" & 2 1/4" | | 6 |
| Material | | STEEL | |
| Thickness of Front Tube Plates Approved | | | 7 1/8" |
| " " " in Boilers | | | 7 1/8" |
| Pitch of Stay Tubes at Spaces between Stacks of Tubes | | | 5" |
| Thickness of Doublings in | | | ✓ |
| " Stay Tubes at | | | 3 1/8" |
| Are Stay Tubes fitted with Nuts at Front End? | | | No |
| Thickness of Back Tube Plates Approved | | | 3 1/2" |
| " " " in Boilers | | | 3 1/2" |
| Pitch of Stay Tubes in Back Tube Plates | | | 10" x 10" |
| " Plain | | | 5" |
| Thickness of Stay Tubes | | | 53 @ 3/8", 34 @ 5/16" |
| " Plain | | | Nº 7 L.S.G. |
| External Diar. of Tubes | | | 3 3/4" |
| Material | | | L.W. IRON |
| Thickness of Furnace Plates Approved | | | 5 1/8" |
| " " " in Boilers | | | 5 1/8" |
| Smallest outside Diar. of Furnaces | | | 3' 7 1/2" |
| Length between Tube Plates | | | 8' 0" |
| Width of Combustion Chambers (Front to Back) | | | 3' 9 23/32" |
| Thickness of " " Tops Approved | | | 5 1/8" |
| " " " in Boilers | | | 5 1/8" |
| Pitch of Screwed Stays in C.C. Tops | | | 8 3/4" |

| | | | |
|---|--|--|--|
| Diar. of Screwed Stays Approved | | | |
| " " " in Boilers | | | |
| Material | | | |
| Thickness of Combustion Chamber Sides Approved | | | |
| " " " in Boilers | | | |
| Pitch of Screwed Stays in C.C. Sides | | | |
| Diar. " " Approved | | | |
| " " " in Boilers | | | |
| Material | | | |
| Thickness of Combustion Chamber Backs Approved | | | |
| " " " in Boilers | | | |
| Pitch of Screwed Stays in C.C. Backs | | | |
| Diar. " " Approved | | | |
| " " " in Boilers | | | |
| Material | | | |
| Are all Screwed Stays fitted with Nuts inside C.C.? | | | |
| 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 and other | | | |
| Size of lower flanges | | | |



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| | | | |
|---|--|------------------|-----------------------------------|
| Diam. of Screwed Stays Approved | $1\frac{5}{8}$ " | Threads per Inch | 9 |
| " " " in Boilers | $1\frac{5}{8}$ " | | 9 |
| Material " " | | | IRON |
| Thickness of Combustion Chamber Sides Approved | $\frac{5}{8}$ " | | |
| " " " " in Boilers | $\frac{5}{8}$ " | | |
| Pitch of Screwed Stays in C.O. Sides | | | $9" \times 8\frac{3}{4}"$ |
| Diam. " " Approved | $1\frac{5}{8}$ " | Threads per Inch | 9 |
| " " " in Boilers | $1\frac{5}{8}$ " | | 9 |
| Material " " | | | IRON |
| Thickness of Combustion Chamber Backs Approved | $\frac{5}{8}$ " | | |
| " " " " in Boilers | $\frac{5}{8}$ " | | |
| Pitch of Screwed Stays in C.O. Backs | | | $9" \times 8\frac{1}{4}"$ |
| Diam. " " Approved | $2" \times 1\frac{3}{4}" \times 1\frac{5}{8}"$ | Threads per Inch | 9 |
| " " " in Boilers | $2" \times 1\frac{3}{4}" \times 1\frac{5}{8}"$ | | 9 |
| Material " " | | | IRON |
| Are all Screwed Stays fitted with Nuts inside C.O.? | | | YES |
| Thickness of Combustion Chamber Bottoms | | | $\frac{13}{16}$ " |
| No. of Girders over each Wing Chamber | | | 5 |
| " " " Centre " | | | 4 |
| Depth and Thickness of Girders | | | $10" \times 2\frac{7}{8}"$ PLATES |
| Material of Girders | | | STEEL |
| No. of Stays in each | | | 4 |
| No. of Tubes, each Boiler | | | 170 RAIN. 93 STAY. 263 TOTAL |
| Size of Lower Manholes | | | $16" \times 12"$ |

VERTICAL DONKEY BOILERS.

| | | | |
|--|--------------------------------------|---------------------|----------------------------|
| No. of Boilers | One | Type | COCKBURN & CO VERTICAL |
| Greatest Int. Diam. | 8' 0" | Height | 16' 6" |
| Height of Boiler Crown above Fire Grate | 11' 11" | | |
| Are Boiler Crowns Flat or Dished? | | | Dished |
| Internal Radius of Dished Ends | 4' 0" | Thickness of Plates | 1" |
| Description of Beams in Boiler Crowns | | | SINGLE RIVETED LRP JOINTED |
| Diam. of Rivet Holes | $\frac{3}{8}$ " | Pitch | 2 $\frac{1}{2}$ " |
| Height of Firebox Crown above Fire Grate | 2' 2 $\frac{1}{2}$ " | | |
| Are Firebox Crowns Flat or Dished? | | | Dished |
| External Radius of Dished Crowns | 2' 6" | Thickness of Plates | $\frac{3}{8}$ " |
| No. of Crown Stays | | Material | |
| Internal Diam. of Firebox at Top | 7' 0" | Thickness of Plates | $\frac{3}{8}$ " |
| No. of Water Tubes | | Each Diam. | |
| Material of Water Tubes | | | |
| Size of Manhole in Shell | $16" \times 12"$ | | |
| Dimensions of Connecting Flange | $9\frac{1}{2}" \times 9\frac{1}{2}"$ | Thickness | $\frac{3}{8}$ " |
| Horizontal distance, each boiler | 8' 0" | Clearance | 2' 0" |
| No. of Safety Valves | 2 | Set | 3" |
| Description of Superheaters | | | SUPERHEATERS |



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VERTICAL DONKEY BOILERS.

Plates by
Cobille

No. of Boilers ONE Type COCHRAN & Co's VERTICAL.

Greatest Int. Diar. 8' 0" Height 16' 6"

Height of Boiler Crown above Fire Grate 11' 14"

Are Boiler Crowns Flat or Dished? DISHED

Internal Radius of Dished Ends 4' 0" Thickness of Plates 1"

Description of Seams in Boiler Crowns SINGLE RIVETED, LAP JOINTED

Diar. of Rivet Holes $\frac{33}{32}$ " Pitch 2 $\frac{1}{8}$ " Width of Overlap 2 $\frac{3}{4}$ "

Height of Firebox Crowns above Fire Grate 3' 3 $\frac{5}{8}$ "

Are Firebox Crowns Flat or Dished? DISHED

External Radius of Dished Crowns 3' 6" Thickness of Plates $\frac{5}{8}$ "

No. of Crown Stays ✓ Diar. ✓ Material ✓

External Diar. of Firebox at Top ✓ Bottom 7' 0" Thickness of Plates $\frac{5}{8}$ "

No. of Water Tubes ✓ Ext. Diar. ✓ Thickness ✓

Material of Water Tubes ✓

Size of Manhole in Shell 16" x 12"

Dimensions of Compensating Ring 2' 4" DIAR x $\frac{27}{32}$ " THICK

Heating Surface, each Boiler 850 $\frac{1}{2}$ Grate Surface 37 $\frac{1}{2}$

No. Safety valves 2 Diar. 3"

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

No. of Pipes 2

Material STEEL

Braced, Welded or Seamless SEAMLESS

Internal Diar. 2'

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

How are Flanges secured? SCREWED & KEYS

Date of Hydraulic Test 10-1-03

Test Pressure 600 LBS

27 201011 X STEAMWATER 2 YB 2377

No. of Pipes

Material

Braced, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Braced, Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure



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No. of Lengths

Material

Brazed, Welded or Seamless

Internal Diam.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

PIPES BY STEWARTS & LLOYDS, LTD

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EVAPORATORS.

| | | | |
|---|---------------|--------------|--------------|
| No. | Type | NONE. | Tons per Day |
| Makers | | | |
| Working Pressure | Test Pressure | Date of Test | |
| Date of Test of Safety Valves under Steam | | | |

FEED WATER HEATERS.

| | | | | | |
|------------------|--|---------------|------------------|--------------|---------|
| No. | ONE | Type | "DIRECT CONTACT" | Nº | 85031 |
| Makers | G. & J. WEIR, L ^{td} CATHCART | | | | |
| Working Pressure | - | Test Pressure | 40 Lbs. | Date of Test | 2-9-27. |

FEED WATER FILTERS.

| | | | | | |
|------------------|---|---------------|-------------|--------------|-----------|
| No. | ONE | Type | GRAVITATION | Size | 100 GALS. |
| Makers | THE CALEDON S. & E. CO. L ^{td} | | | | |
| Working Pressure | ✓ | Test Pressure | ✓ | Date of Test | ✓ |

LIST OF DONKEY PUMPS.

MAIN FEED PUMPS 2 OFF. G. & J. WEIR, L^{td}. Nos. 85032/1 & 2. 6" x 8½" x 18"
 SUCTIONS:- BOILER CIRC. SEA. HEATER. CONDENSER. TANKS. HOTWELL
 DISCHARGES:- MAIN & AUX. FEED.

BALLAST PUMP 1 OFF. DAWSON & DOWNIE, L^{td}. No. 7875. 8" x 9" x 8"
 SUCTIONS:- SEA. TANKS. SPECIAL BILGE. BILGE MAIN.
 DISCHARGES:- OVERBOARD. TANKS. DECK. CONDENSER. CO₂ MACHINE

GENERAL SERVICE & ASH EJECTOR PUMP 1 OFF. DAWSON & DOWNIE, L^{td}. No. 7877. 8" x 5" x 8"
 SUCTIONS:- SEA. CONDENSER. BILGES. HOTWELL. TANKS. BOILERS
 DISCHARGES:- BOILERS. OVERBOARD. DECK. SANITARY. ASH EJECTOR.

FRESH WATER PUMP 1 OFF. DAWSON & DOWNIE, L^{td}. No. 7876. 4½" x 4½" x 6"
 SUCTION:- ENGINE ROOM TANK
 DISCHARGES:- FILTER TANK. DECK

DONKEY BOILER FEED P. 1 OFF. DAWSON & DOWNIE, L^{td}. No. 7878. 5" x 3½" x 6"
 SUCTIONS:- TANKS. FILTER TANK. SEA.
 DISCHARGE:- DONKEY BOILER.

CIRCULATING PUMP 1 OFF. DRYSDALE & CO. L^{td}. No. 18651. 11" SUCTION



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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 |
| " Jank 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 |

1 SPRING FOR DONKEY BOILER SAFETY VALVES.

1 CHECK VALVE

2 DOZEN GAUGE GLASSES.

1 SET OF PROPELLER BOSS NUTS, STUDS & PINS.

12 WING BARS FOR MAIN BOILERS.

6 NUTS FOR EACH SIZE USED IN BOILERS.

1 SPRING FOR ASH EJECTOR PUMP.

REFRIGERATORS.

| No. of Machines | Capacity of each | No. of Compressors | No. of Cranks |
|--|-------------------|--------------------|---------------|
| Makers | J. & E. HALL, LTD | | |
| Description | SIZE No. 7 | VERTICAL. | |
| 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 | | | |

1 CIRCULATING PUMP WORKED OFF MACHINE
1 BRINE "

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

9-2-28

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. |
|--------------|------------------------------|------------------------|--------------------------------------|----------------------------|
| Hold P. | 44° | 16° | } 5 Hrs | |
| " S. | 45° | 18° | | |

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

TO MEET RULE REQUIREMENTS.

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RESISTANCE TO MOTORS

| No. of Motors | Time required to obtain this Result | Temp. at 100 ft. below | Temp. at 100 ft. below | Comments |
|---------------|-------------------------------------|------------------------|------------------------|----------|
| 1 | 10 1/2 | 101 | 101 | 7 1/2 |
| 2 | 18 | 101 | 101 | 2 |

1. CIRCULATING PUMP WORKED OFF MACHINE
2. BUNKER

System of Refrigeration

GRANULATED CORN

Articles of Spare Gear for Refrigerating Plant carried on board:

TO MEET THE REQUIREMENTS

Date of Test under Working Conditions

9-2-28

ELECTRIC LIGHTING.

Installation Fitted by THE CALEDON S. & E. G. L^Y

No. and Description of Dynamos

Makers of Dynamos H.T. BOOTHROYD, L^Y BOOTLE

Capacity 163.5 Amperes, at 110 Volts, 250 Revols. per Min. 18 K/W.

Current Alternating or Continuous CONTINUOUS

Single or Double Wire System DOUBLE

Position of Dynamos BOTTOM PLATFORM, ENGINE R^M, STAB^E

Main Switch Board AS DYNAMO

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

12

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. |
|--|-------------------|---------------|-------------------------|--------------------|------------------|----------------------------|---------------------------------|
| 1) ENGINE R ^M & OFFICERS | 54 | 40 | 20 | 7/036 | 2860 | 98% | 600 MEGOHMS |
| 2) CREW AFT | 25 | 40 | 9 | " | 1285 | " | " |
| 3) MAIN DECK | 23 | 40 | 8.5 | " | 1210 | " | " |
| 4) AFTER HOLD | 14 | 40 | 5 | " | 715 | " | " |
| 5) CARGO CLUSTERS | 24 | 40 | 9 | " | 1285 | " | " |
| 6) 1 ST CLASS ACCOMM ^Y | 112 | 40 | 35 | 7/064 | 1550 | " | " |
| 7) NAVIGATION | 17 | 100 | 6 | 7/036 | 837 | " | " |
| 8) MAIN HOLD | 19 | 40 | 7 | " | 1000 | " | " |
| 9) FORE HOLD | 10 | 40 | 4 | 3/029 | 2000 | " | " |
| 10) STEERAGE & CREW | 15 | 40 | 5.5 | 7/036 | 780 | " | " |
| 11) WIRELESS | 6 | 40 | 6 | 3/029 | 3000 | " | " |
| 12) FANS | 6 | 40 | 6 | 3/029 | 3000 | " | " |

Total No. of Lights 313 No. of Motors driving Fans, &c. 4 No. of Heaters

Current required for Motors and Heaters

6 AMPS

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

None

| Particulars of these Circuits— | No. of Circuits to which Switches are provided on Main Switch Board | Main Switch Board | Position of Dynamometer | Single or Double Wire System | Current Alternating or Continuous | Capacity | Amperes at 110 Volts | Revol. per Min. |
|--|---|-------------------|-------------------------|------------------------------|-----------------------------------|----------|----------------------|-----------------|
| Are Out-outs fitted as follows?— | | | | | | | | |
| On Main Switch Board, to Cables of Main Circuits | 8 | 0A | 28 | YES | WATER | | | |
| On Aux. " each Auxiliary Circuit | 0A | 28 | YES | WATER | | | | |
| Wherever a Cable is reduced in size | 3 | 0A | 11 | YES | WATER | | | |
| To each Lamp Circuit | 2881 | 0A | 28 | YES | WATER | | | |
| To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted | | | | YES | WATER | | | |
| Are the Fuses of Standard Sizes? | 2881 | 0A | 100 | YES | WATER | | | |
| Are all Switches and Cut-outs constructed of Non-inflammable Material? | 0A | 01 | YES | WATER | | | | |
| Are they placed so as to be always and easily accessible? | 0A | 01 | YES | WATER | | | | |
| Smallest Single Wire used, No. 3/22 S.W.G., Largest, No. 37/14 S.W.G. | | | | | | | | |
| How are Conductors in Engine and Boiler Spaces protected? | LEAD COVERED, ARMoured & BRAIDED | | | | | | | |
| " Saloons, State Rooms, &c., " ? | & BRAIDED | | | | | | | |
| What special protection is provided in the following cases?— | | | | | | | | |
| (1) Conductors exposed to Heat or Damp | NONE | | | | | | | |
| (2) " passing through Bunkers or Cargo Spaces | NONE | | | | | | | |
| (3) " " Deck Beams or Bulkheads | LEAD BUSHED & W/T. GLANDS | | | | | | | |

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables

is unimpaired? NO JOINTS

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces? NO JOINTS

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface? YES

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? Ohms,

Is the Installation supplied with a Voltmeter? YES

" " " an Ampere Meter? YES

Date of Trial of complete Installation 10TH & 11TH FEB. 1928 Duration of Trial 24 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? **YES**

If not, give details of the points of difference, and state when these were sanctioned by the Chief

Surveyor.

Are the DYNAMO, MOTOR, MAIN and BRANCH CABLES so placed that the Companies are only

affected by them?

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

Has the Installation Resistance over the whole system been tested?

What does the Resistance amount to?

Is the Installation supplied with a Voltmeter?

Date of Trial of complete installation 10th & 11th FEB 1928 Duration of Trial 24 HOURS

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

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?

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

as ascertained by me from personal examination

When special provision is provided in the following cases:-

(1) Conditions referred to in Rule 10

(2) Conditions referred to in Rule 11

(3) Conditions referred to in Rule 12

(4) Conditions referred to in Rule 13

(5) Conditions referred to in Rule 14

(6) Conditions referred to in Rule 15

(7) Conditions referred to in Rule 16

(8) Conditions referred to in Rule 17

(9) Conditions referred to in Rule 18

(10) Conditions referred to in Rule 19

(11) Conditions referred to in Rule 20

(12) Conditions referred to in Rule 21

Geo S Macfarlane
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,

John King
Chief Surveyor.

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

2nd May 1928.

Fees advised

Fees paid



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Secretary.

Test--

at the same time, however, all the same, I am not sure that the results are really

H. S. ...

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