

No. 2209

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2214 No. in Register Book 3583

S. TUG "FLYING EAGLE"

Makers of Engines Bow, Mc LACHLAN & Co, LTD.

Works No. 3977.

Makers of Main Boilers [SAME]

Works No. 1189.

Makers of Donkey Boiler —

Works No. —

MACHINERY.

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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

6th November 1928

Surveyor's Report on the Deto Engines, Boilers, and Auxiliary
Machinery of the Single ~~Two~~ Screw ~~Eng~~ ^{Eng}

"Flying Eagle."

Official No.

Port of Registry

Registered Owners

CLYDE SHIPPING COMPANY,
LIMITED.

Engines Built by

BOW, McLACHLAN & Coy, LTD,

at

PAISLEY.

Main Boilers Built by

[SAME]

at

Donkey " "

[NONE.]

at

Date of Completion

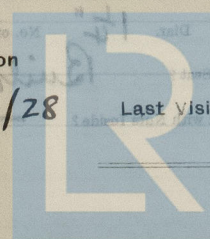
First Visit 6/6/28

Last Visit

31/10/28

Total Visits

25



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RECIPROCATING ENGINES.

Works No. **3977** No. of Sets **One** Description **Compound surface Condensing vertical steam**

No. of Cylinders each Engine **Two** No. of Cranks **Two**
 Diars of Cylinders **21" and 44"** Stroke **28"**
 Cubic feet in each L.P. Cylinder **24.63**
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr. **Yes.**

" " each Receiver? **H.P. only.**
 Type of H.P. Valves, **Piston**

1st L.P. " **—**
 2nd L.P., **—**
 L.P. " **Andrews & Cameron**
 " Valve Gear **Stevenson Link Motion**
 " Condenser **Riveted steel** Cooling Surface **1244** sq. ft.
 Diameter of Piston Rods (plain part) **4 7/8"** Screwed part (bottom of thread) **3.537"**
 Material " **Steel**
 Diam. of Connecting Rods (smallest part) **4 7/8"** Material **Steel**
 " Crosshead Gudgeons **5"** Length of Bearing **5"** Material **"**
 No. of Crosshead Bolts (each) **4** Diam. over Thrd. **2"** Thrds. per inch **6** Material **W.I.**
 " Crank Pin " **2** " **2 1/2"** " **6** " **"**
 " Main Bearings **4** Lengths **10"**
 " Bolts in each **2** Diam. over Thread **2"** Threads per inch **6** Material **Steel**
 " Holding Down Bolts, each Engine **20** Diam. **1 1/4"** No. of Metal Chocks **20**

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

Built seat.

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

If not, how are they fitted?

Connecting Rods, Forged by **Langley Forge Co.**
 Piston " " **Bow, McLachlan & Co. Ltd.**
 Crossheads " " "
 Connecting Rods, Finished by " " "
 Piston " " "
 Crossheads, " " "
 Date of Harbour Trial **29/10/28**
 " Trial Trip **31/10/28**
 Trials run at **Skelmorlie and Bareloch miles.**
 Were the Engines tested to full power under Sea-going conditions? **Yes.**
 If so, what was the L.H.P.? **897.75** Revols. per min. **127**
 Pressure in ^{H.P.} Receiver, **108.25** lbs., and L.P., **—** lbs., L.P., **12.25** lbs., Vacuum, **24 1/8** ins.
 Speed on Trial **11.69 knots.**

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

data:—

Builders' estimated L.H.P. **950** Revols. per min. **127**
 Estimated Speed **—**



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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

None.

TURBO-ELECTRIC INSTALLATION OF ENGINES AND MACHINERY.

Capacity of each

No. of Turbo-Generating Sets

Type of Turbines employed

Description of Generators

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 Generators at Full Power

" " Motors

" 1st Reduction Shaft

" 2nd "

" Propellers at Full Power

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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

8.77"

Actual

9.25"

In Way of Webs

9.25"

" of Crank Pins

9.25"

Length between Webs

10.25"

Greatest Width of Crank Webs

17.5"

Thickness

5.75"

Least

(parallel.)

Diar. of ~~crank~~ in Crank Webs

Dowels

1.75"

Length

3"

" Dowels in Crank Pins

1.75" Length 3"

Screwed or Plain

Plain.

No. of Bolts each Coupling

6

Diar. at Mid Length

2.25"

Diar. of Pitch Circle

14"

Greatest Distance from Edge of Main Bearing to Crank Web

Type of Thrust Blocks

Mitchell.

No. " Rings

One.

Diar. of Thrust Shafts at bottom of Collars

9.25"

No. of Collars

One

" " Forward Coupling

9.25"

At Aft Coupling

9.25"

Diar. of Intermediate Shafting by Rule

8.35"

Actual

8.75"

No. of Lengths

One.

No. of Bolts, each Coupling

6

Diar. at Mid Length

2.25"

Diar. of Pitch Circle

1'-2"

Diar. of Propeller Shafts by Rule

9.18"

Actual

9.625"

At Couplings

9.6875"

Are Propeller Shafts fitted with Continuous Brass Liners?

Yes.

Diar. over Liners

11.1875"

Length of After Bearing

3'-6"

Of what Material are the After Bearings composed?

Lignum Vitae staves.

Are Means provided for lubricating the After Bearings with Oil?

No.

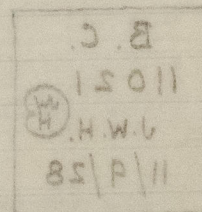
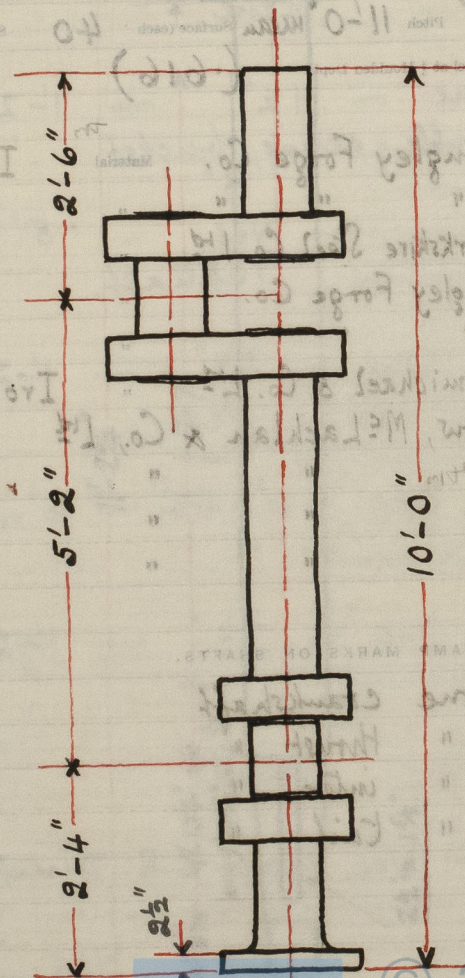
" " to prevent Sea Water entering the Stern Tubes?

"

If so, what Type is adopted?

—

SKETCH OF CRANK SHAFT.



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No. of Blades each Propeller 4 Fitted or Solid? Fitted.
Material of Blades Cast steel Boss Cast iron.
Diam. of Propellers 10'-0" Pitch 11'-0" mean Surface (each 40 S. ft.)
Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth (.616)

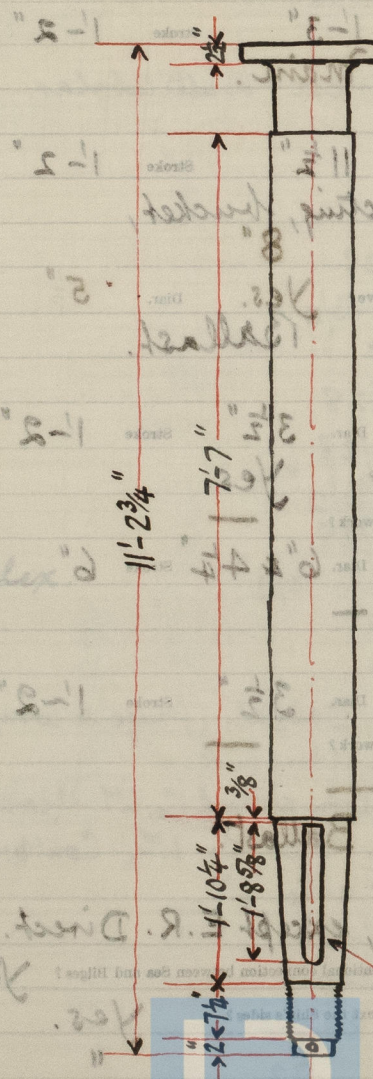
Cranks	Shafts	Forged by	Material	I.S.
		Langley Forge Co.		
Pins		"	"	"
Webbs		Lanarkshire Steel Co. Ltd	"	"
Thrust Shafts		Langley Forge Co.	"	"
Intermed.		"	"	"
Propeller		J. Carmichael & Co. Ltd	"	Iron (scrap.)
Cranks	Finished by	Bow, McLachlan & Co., Ltd		
Thrust		"	"	"
Intermed.		"	"	"
Propeller		"	"	"

STAMP MARKS ON SHAFTS.

B. C.
11021
J. W. H. (JW H)
11/9/28

{ one crankshaft
" thrust "
" inter. "
" tail "

SKETCH OF PROPELLER SHAFT.



PUMPS, ETC.

No. of Air Pumps *One* *1-3"* *1-2"*
Diar. Stroke

Worked by Main or Independent Engines? *Main.*

No. of Circulating Pumps *One* *11 1/2"* *1-2"*
Diar. Stroke

Type of " *Double-acting, bucket,*

Diar. of " *8"*
Suction from Sea

Has each Pump a Bilge Suction with Non-return Valve? *Yes.* *5"*
Diar.

What other Pumps can circulate through Condenser? *Ballast.*

No. of Feed Pumps on Main Engine *One* *3 1/2"* *1-2"*
Diar. Stroke

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

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

No. of Independent Feed Pumps *One.* *6" & 4 1/4"* *6"*
Diar. Stroke

What other Pumps can feed the Boilers? *—*

No. of Bilge Pumps on Main Engine *One* *3 1/2"* *1-2"*
Diar. Stroke

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

No. of Independent Bilge Pumps *—*

What other Pumps can draw from the Bilges? *Ballast.*

Are all Bilge Suctions fitted with Roses? *Yes, except E.R. Direct.*

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? *Yes.*

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

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.*

BOILERS.

118P

Works No.

No. of Boilers *One*

Single or Double-ended *Single.*

No. of Furnaces in each *3*

Type of Furnaces *Double-ended*

Date when Plan approved *12/2/28*

Approved Working Pressure *130 lb/sq in*

Hydraulic Test Pressure *140 lb/sq in*

Date of Hydraulic Test *28/9/28*

When Safety Valves set *28/10/28*

Pressure at which Valves were set *130 lb/sq in*

Date of Accumulation Test *28/10/28*

Maximum Pressure under Accumulation Test *130 lb/sq in*

System of Drafting *Normal*

Can Boilers be worked separately? *—*

Makers of Plates *(Shell) Corbridge, Dalgell, (Flange & wrapper)*

Makers of Rivets *John D. White & Co. Ld., Corbridge*

Makers of Bolts & Nuts *(Bolt) Corbridge, (Nut) Corbridge*

Makers of Rivet & Nut *Corbridge*

Makers of Rivet & Nut *Corbridge*

Greatest Internal Diam. of Boilers *11-6"*

Length *12-0"*

Space Test of Rivets & Bolts *28/9/28*

" " " *28/9/28*

" " " *28/9/28*

" " " *28/9/28*

" " " *28/9/28*

" " " *28/9/28*

Duplex.



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BOILERS.

Works No. 1189

No. of Boilers One Type Cylindrical Multitubular.

Single or Double-ended Single.

No. of Furnaces in each 3

Type of Furnaces Deighton

Date when Plan approved 12/5/28

Approved Working Pressure 130 lb/□"

Hydraulic Test Pressure 245 "

Date of Hydraulic Test 28/9/28

" when Safety Valves set 29/10/28

Pressure at which Valves were set 134 lb/□"

Date of Accumulation Test 29/10/28

Maximum Pressure under Accumulation Test 138 lb/□"

System of Draught Natural

Can Boilers be worked separately? —

Makers of Plates (Shell) Colville, Dalzell. (flange & wrapper) Jas. Dunlop & Co. Ltd., Calderbank.

" Stay Bars (steel) Scottish Iron & Steel Co. Ltd. (iron)

" Rivets Rivet, Bolt & Nut Co. Ltd., Coatbridge.

" Furnaces Thos. Piggott & Co., Ltd.

Greatest Internal Diam. of Boilers 16'-6"

" " Length " 12'-0"

Square Feet of Heating Surface each Boiler 2946

" " Grate " " 72

No. of Safety Valves each Boiler One pair Rule Diam. 2 3/8" (b) H.L. Actual 3" high lift.

Are the Safety Valves fitted with Easing Gear? Yes.

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

" Test Cocks " — " Salinometer Cocks One

B.C. TEST.

5124

245 lb.

W.P. 130 "

J.W.H.

28/9/28

Robt. Heath

$$2946 \times \frac{1.25}{145} = 25.6 \square "$$

$$\div 4 \text{ for each high lift valve} = 6.4 \square "$$

equivalent to 2 3/8" bore diam. per valve.

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

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes

Size of Manholes in Shell

Dimensions of Compensating Rings

Pillars.

Direct, with

Cocks on end plates.

One.

2

1"

1"

Steel.

Butt.

Double.

Yes.

$\frac{3}{4}$ "

$\frac{7}{8}$ "

Machine.

Treble.

5

7"

—

—

2

Machine.

2

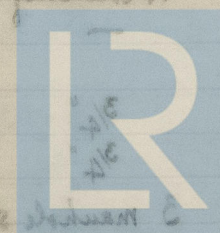
Machine.

3.27"

16" x 12"

2'-10" x 2'-6"

2½" G.M. cocks.



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(Oval Octagon)

Thickness of End Plates in Steam Space Approved

 $\frac{7}{8}$ "

" " " " " in Boilers

 $\frac{7}{8}$ "

Pitch of Steam Space Stays

(see sketch.)

Diar. " " " " Approved

 $2\frac{1}{4}$ "

Threads per Inch

6

" " " " " in Boilers

 $2\frac{1}{4}$ "

"

6

Material of " " "

Steel.

How are Stays Secured?

Nuts inside & outside.

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " "

Width " " Doubling Strips "

Thickness of Middle Back End Plates Approved

 $\frac{3}{4}$ "

" " " " " in Boilers

 $\frac{3}{4}$ "

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at

" " " "

 $15\frac{1}{2}$ "

Diar. of Stays Approved

 $1\frac{5}{8}$ "

Threads per Inch

9

" " in Boilers

 $1\frac{5}{8}$ "

"

9

Material "

Lowmoor Iron.

Are Stays fitted with Nuts outside?

Yes.

Thickness of Back End Plates at Bottom Approved

 $\frac{3}{4}$ "

" " " " " in Boilers

 $\frac{3}{4}$ "

Pitch of Stays at Wide Spaces between Fireboxes

Widening.

Thickness of Doublings in

—

Thickness of Front End Plates at Bottom Approved

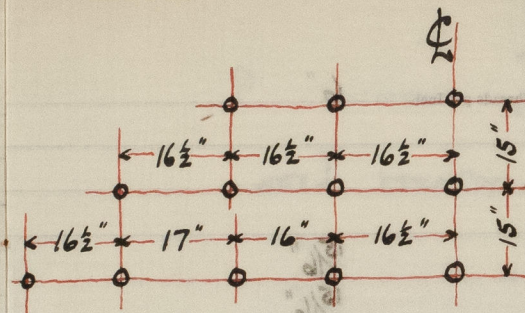
 $\frac{3}{4}$ "

" " " " " in Boilers

 $\frac{3}{4}$ "

No. of Longitudinal Stays in Spaces between Furnaces

3 manhole stays each side.



(inv) "P" x "2 1/2"

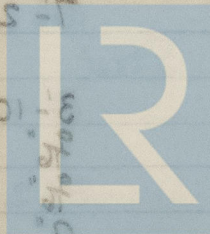
(inv) "P" x "2 1/2"

"2 1/4" x "4 1/2"

2 W. 8

"2 1/2"

W. 1 Iron. 1/2 lb per ft



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Diar. of Stays Approved

2"

Threads per Inch

6"

" " in Boilers

2"

Material "

Steel.

Thickness of Front Tube Plates Approved

 $\frac{15}{16}$ "

" " " " in Boilers

 $\frac{15}{16}$ "

Pitch of Stay Tubes at Spaces between Stacks of Tubes

 $15\frac{1}{2}$ " x 9" (vert.)

Thickness of Doublings in

 $\frac{3}{8}$ "

" Stay Tubes at

Are Stay Tubes fitted with Nuts at Front End?

No.

Thickness of Back Tube Plates Approved

 $\frac{3}{4}$ "

" " " in Boilers

 $\frac{3}{4}$ "

Pitch of Stay Tubes in Back Tube Plates

 $13\frac{1}{2}$ " x 9" (vert.)

" Plain "

 $4\frac{1}{2}$ " x $4\frac{1}{2}$ "

Thickness of Stay Tubes

 $\frac{3}{8}$ "

" Plain "

8 I.W.G.

External Diar. of Tubes

 $3\frac{1}{2}$ "

Material "

Lap welded Wrot Iron.

Thickness of Furnace Plates Approved

 $\frac{9}{16}$ "

" " " in Boilers

 $\frac{9}{16}$ "

Smallest outside Diar. of Furnaces

4'-1 $\frac{1}{8}$ "

Length between Tube Plates

7'-2"

Width of Combustion Chambers (Front to Back)

3'-10 $\frac{7}{32}$ "

Thickness of " " Tops Approved

 $\frac{9}{16}$ "

" " " in Boilers

 $\frac{9}{16}$ "

Pitch of Screwed Stays in C.C. Tops

9" x 9"

Threads per Inch

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 Heads Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Heads

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

" " " " "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes in each

Pitch of Lower Flanges

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Diar. of Screwed Stays Approved

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

Threads per Inch

9

" " " in Boilers

Material " "

Lowmoor Iron.

Thickness of Combustion Chamber Sides Approved

 $\frac{9}{16}"$ $\frac{9}{16}"$ $9" \times 9"$

" " " " in Boilers

Pitch of Screwed Stays in C.O. Sides

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

Threads per Inch

9

Diar. " " Approved

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

" " " in Boilers

Material " "

Lowmoor Iron.

Thickness of Combustion Chamber Backs Approved

 $\frac{17}{32}"$ $\frac{17}{32}"$ $7\frac{7}{8}" \times 9"$

" " " " in Boilers

Pitch of Screwed Stays in C.O. Backs

 $1\frac{3}{8}"$

Threads per Inch

9

Diar. " " Approved

 $1\frac{3}{8}"$

" " " in Boilers

Material " "

Lowmoor Iron.

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

Yes.
 $\frac{21}{32}"$

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

5

" " " Centre "

4

Depth and Thickness of Girders

 $10\frac{1}{2}"$, two $\frac{13}{16}"$ plates.

Material of Girders

Steel.

No. of Stays in each

4

No. of Tubes, each Boiler

362

Size of Lower Manholes

 $16" \times 12"$

VERTICAL DONKEY BOILERS.

No. of Boilers	Type
Greatest Int. Diam.	Height
Height of Boiler Crown above Fire Grate	Are Boiler Crowns Flat or Dished?
Internal Radius of Dished Boilers	Description of seams in Boiler Crowns
Width of Overlap	Dist. of Rivet Holes
Height of Firebox Crown above Fire Grate	Are Firebox Crowns Flat or Dished?
External Radius of Dished Crowns	Thickness of Plates
No. of Crown stays	Diam.
External Diam. of Firebox at Top	Thickness of Plates
No. of Water Tubes	Ext. Diam.
Material of Water Tubes	Size of Manhole in Shell
Dimensions of Connecting Flange	Heating Surface, each Boiler
Grate Surface	

SUPERHEATERS.

Description of Superheater	Where situated?
Which Boilers are connected to superheaters?	Can superheaters be shut off while Boilers are working?
No. of Safety Valves on each superheater	Date of Hydrostatic Test
Date when safety Valves set	Pressure on Valves



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MAIN STEAM PIPES.

No. of Lengths 2
 Material Copper.
 Braze, Welded or Seamless Seamless.
 Internal Diam. $6\frac{1}{2}"$
 Thickness 6 W.G. = .192"
 How are Flanges secured? Brazed.
 Date of Hydraulic Test 26/10/28
 Test Pressure 260 lb/sq"

MAIN FEED DO.

No. of Lengths 2
 Material Copper.
 Braze, Welded or Seamless Seamless.
 Internal Diam. 3"
 Thickness 10 W.G. = .128"
 How are Flanges secured? Brazed.
 Date of Hydraulic Test 25/10/28
 Test Pressure 325 lb/sq"

AUX. FEED DO.

No. of Lengths One.
 Material Copper.
 Braze, Welded or Seamless Seamless.
 Internal Diam. $2\frac{1}{2}"$
 Thickness 12 W.G. = .104"
 How are Flanges secured? Brazed.
 Date of Hydraulic Test 25/10/28
 Test Pressure 325 lb/sq"

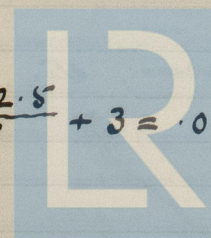
John Morrison & Sons, Coppersmiths, Paisley.

Rule Thickness; -

$$t = \frac{130 \times 6.5}{60} + 3 = .171", \text{ made } .192".$$

$$t = \frac{130 \times 3}{48} + 3 = .11", \text{ made } .128"$$

$$t = \frac{130 \times 2.5}{48} + 3 = .097", \text{ made } .128"$$



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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

None.

FEED WATER HEATERS.

No. Type

Makers

Working Pressure

Test Pressure

Date of Test

None.

FEED WATER FILTERS.

No. Type

Makers

Working Pressure

Test Pressure

Date of Test

None.

STEERING GEAR.

2 cyl. horizontal worm & wheel type with chain barrel below; No 2431; by Caldwell & Co. Ltd.

LIST OF DONKEY PUMPS.

Ballast by Dawson & Downie Ltd. No. 8429.

General Service by Dawson & Downie Ltd. No. 8438.
6" and 4½" diameters; 6" stroke.



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SPARE GEAR.

No. of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	6
" Coupling Bolts	2 sets	" Main Bearing Bolts	2	" Valve Chest "	6
" Junk Ring Bolts	12	" Feed Pump Valves	3	" Bilge Pump Valves	3
" H.P. Piston Rings		" I.P. Piston Rings		" L.P. Piston Rings	
" " Springs		" " Springs		" " Springs	
" Safety Valve "	3	" Fire Bars	70	" Feed Check Valves	2
" Piston Rods		" Connecting Rods		" Valve Spindles	
" Air Pump Rods		" Air Pump Buckets		" Air Pump Valves	1 set.
" Cir. "		" Cir. "		" Cir. "	1 "
" Crank Shafts		" Crank Pin Bushes		" Crosshead Bushes	
" Propeller Shafts		" Propellers		" Propeller Blades	1 "
" Boiler Tubes		" Condenser Tubes	24	" Condenser Ferrules	48

OTHER ARTICLES OF SPARE GEAR:—

- 1 set propeller boss studs, nuts, & pins.
 1 feed pump valve seat.
 1 bilge " " "
 3 relief valve springs.
 3 nuts of each size used in boiler.
 2 patent tube stoppers.
 6 wing fire bars.

Assorted plate & bar iron.

" Studs, bolts & nuts.

— also —

Spare gauge glasses, etc.

REFRIGERATORS

No. of Machines	
Capacity of each	
Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently	
No. of Steam Cylinders each Machine	
No. of Compressor	



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REFRIGERATORS.

No. of Machines 2 Capacity of each 2
 Makers 2
 Description 12

No. of Steam Cylinders, each Machine 2 No. of Compressors 2 No. of Cranks 2

Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines or Independently

None.

System of Refrigeration

Insulation

Are Brine and other Regulating Valves placed so as to be accessible without entering the Insulated Spaces?

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage?

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after hours.
1st	85.0	113.0	4.34	8.30 AM
2nd	85.0	113.0	4.34	9.00
3rd	85.0	113.0	4.34	9.30
4th	85.0	113.0	4.34	10.00
5th	85.0	113.0	4.34	10.30
6th	85.0	113.0	4.34	11.00
7th	85.0	113.0	4.34	11.30
8th	85.0	113.0	4.34	12.00
9th	85.0	113.0	4.34	12.30
10th	85.0	113.0	4.34	13.00
11th	85.0	113.0	4.34	13.30
12th	85.0	113.0	4.34	14.00

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

1. Spare parts for Compressor, 80° F.

2. Spare parts for Condenser, 102° F.

3. Spare parts for Evaporator, 86° F.

4. Spare parts for Receiver, 100° F.

5. Spare parts for Suction Pipe, 100° F.

6. Spare parts for Discharge Pipe, 100° F.

7. Spare parts for Expansion Valve, 100° F.

8. Spare parts for Safety Valve, 100° F.

9. Spare parts for Pressure Gauge, 100° F.

10. Spare parts for Temperature Gauge, 100° F.

Generator (no. 111530) direct-coupled to single cyl. steam engine (job 499) by Drysdale & Co. Ltd. (Zoker), taking steam at 130 lb/□".

Tests carried out 15/10/28 at Drysdale's Works.

Time.	R.P.M.	Volts.	Amps.	K.W.	Steam.
8-30 AM.	354	113	41	4.63	130 lb/□"
9-00 "	353	112	41.5	4.65	130 "
9-30 "	354	112	42	4.7	130 "
10-00 "	353	112	42	4.7	128 "
10-30 "	349	110	60	6.6	127 "

Governor tried at 10-30 (50% overload) & found in ^{readable} order; then at rated full load with following results;

Main Switch.	Momentary.	Permanent.
OUT.	130 volts.	114 volts
IN.	95 "	110 "

The set was thereafter stopped & following temperatures noted; -

Atmosphere,	56°F.	Commutator,	80°F.
		Armature,	105°F.
		Field Coils,	86°F.
		(Interpoles),	100°F.

There was no sparking at fixed brushes either at full load or overload. (There were no means of testing insulation resistance between field & frame.) J.W.T.

ELECTRIC LIGHTING.

Installation Fitted by Bow, McLachlan & Co. Ltd.
 No. and Description of Dynamos One 4½ Kilowatt comp. wound
 Makers of Dynamos W.H. Allen, Sons & Co. Ltd.
 Capacity " 41 Amperes, at 110 Volts, 350 Revs. per Min.
 Current Alternating or Continuous Continuous.
 Single or Double Wire System Double.
 Position of Dynamos Engine room, Starboard side.
 " Main Switch Board " " " "
 No. of Circuits to which Switches are provided on Main Switch Board 5

Particulars of these Circuits:-

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density. Amps.	Conductivity of Conductor.	Insulation Resistance per Mile.
Cargo cluster.	8	400	5	7/1029	18.2	100%	Megohms. 2500
Engine room.	15	150	6	"	"	"	"
Crew space aft.	7	210	3	"	"	"	"
Saloon & Cabins forward.	21	630	8	"	"	"	"
Navigation	15	540	7½	"	"	"	"

Total No. of Lights 66 No. of Motors driving Fans, &c. — No. of Heaters —

Current required for Motors and Heaters —

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

none.

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. 3/029 S.W.G., Largest, No. 7/029 S.W.G.

How are Conductors in Engine and Boiler Spaces protected? Lead covered armoured

" " 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

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?

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? 2 Meg Ohms.

Is the Installation supplied with a Voltmeter? Yes.

" " " an Ampere Meter

Date of Trial of complete Installation 31/10/28 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? *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. tug "Flying Eagle"

as ascertained by ^{me} from personal examination

J. Wood Harrington.

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,

W. L. King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the 28th November 1928

Fees advised

Fees paid



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Secretary.

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DOUGLAS BOYER

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2-10-1944

РАЗНОУРОВНЬ

It is submitted that this Report be approved.

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