

No. 672

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Handwritten initials

Report No. *647* No. in Register Book *1176*

S.S. *NORBURN*

Makers of Engines *Central Marine Eng. Ldco.*

Works No. _____

Makers of Main Boilers *Central Marine Eng. Ldco.*

Works No. *R.169.*

Makers of Donkey Boiler *Cochran & Co. Ld.*

Works No. _____

MACHINERY.



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002543-002549-0114

No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 647 No. in Registry Book 1176

Received at Head Office

11th November 1908.

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the *Steel Screw Steamer*
"Northorn"

Port of Registry *West Hartlepool*

Registered Owners *"Northorn" S. S. Co. Ltd.*

Smith, Fogg & Co. Managers

Surveyor's District *Sunderland*

Date of Completion of Engines *4. 1891*

" " " " Main Boilers *10. 1908*

" " " " Donkey " *10. 1908*

Trial Run at *North Sea* Date *Oct. 17. 08.*

First Visit *March 10. 08.* Last Visit *17. 10. 08.*

Total Number of Visits *40*



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ENGINES.

Made by *Central Marine Eng. Works*
 " at *W. Hartlepool* Works No.
 Description *Triple Expansion, S. C. 3. Cyl.*
 No. of Cylinders, each Engine *3* Diars. *22" 35" 58"* Stroke *39"*
 Cub. feet in each L.P. Cylr. *59.62* Revols. per Min. *62* I.H.P.
 Pressure in I.P. Receiver at full Power *42 lbs.* 2nd I.P. *-* L.P. *4 lbs.*
 Thickness of Metal in H. P. Cylr. I.P. " "
 " " " " Liner " "
 " " " " Valve Chest " "
 Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? *yes*
 " " " " each Receiver?
 Number of Bolts in H.P. Cylr. Cover I.P. 2nd I.P. L.P.
 " " " " *1/8" 1/8" 1/8"*
 Pitch " " " " " "
 Type of H.P. Valves (Piston or Slide) *Slide Slide Slide*
 " Valve Gear *Stephensons Link Motion*
 Diameter of Piston Rods (plain part) *HP 5 1/8" IP 4 1/8" LP 4 1/8"* At Bottom of Thread *3.53"*
 Makers " Material
 Diameter of Connecting Rods (smallest part) *5"* Material
 Makers " "
 Diar. of Crosshead Gudgeons *6 3/4"* Length of Bearing *9"* Material
 No. of Top End Bolts (each Rod) *2* Effective Diar. *3 1/8"* Material
 " Bot. " " *2* " *3 1/8"* "
 " Main Bearings *6* Lengths
 " Bolts in each *2* Effective Diar. Material

No. of Holding Down Bolts, each Engine *79* No. of Metal Chocks *63*
 " " " " *1 1/4"* Average Pitch
 Are the Engines bolted directly to the Tank Top? *On sealing*
 Are the Bolts tapped through the Tank Top and fitted with Nuts inside?
 Date of Test of Tank by Water Pressure with Holding Down Bolts in place *-*

SKETCHES.



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SKETCHES.

SHAFTING.

Are Crank Shafts Built? No. of Lengths in each Angle of Cranks

Diar. of Crank Shafts by Rule $10\frac{7}{8}$ " Actual $10\frac{1}{16}$ " Diar. in Way of Webs

Makers of " Material

Diar. of Crank Pins Diar. in Way of Web

Makers of " Material

Width across Crank Webs at Centre of Shaft Thickness

" " " " Crank Pins

" " " " Narrowest part

Makers of Crank Webs Material

Diar. or Breadth of Keys in Crank Webs Length

" of Dowel Pins in Crank Pins Length Screwed or Plain

No. of Bolts in each Coupling Diar. at Mid Length Diar. of Pitch Circle

Material of Coupling Bolts

Crank Shafts Finished by

Greatest Distance from edge of Main Bearing to Crank Web

Description of Thrust Blocks

Number " " Rings 5

Diar. of Thrust Shafts by Rule $10\frac{7}{8}$ Actual (at bot. of Collars) $10\frac{1}{16}$ " Over Collars

" " at Forward Coupling After Coupling

No. of Thrust Collars 4 Thickness 2" Distance apart $4\frac{1}{4}$ "

Thrust Shafts Forged by Material

" Finished by

Diar. of Intermediate Shafting by Rule $10\frac{1}{2}$ " Actual $10\frac{1}{2}$ "

No. of Lengths, each Engine No. of Tunnel Bearings

Diar. of Bearings $10\frac{1}{4}$ " Length Distance apart



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No. of Bolts, each Coupling 6 Diar. at Mid Length 2 3/4 Diar. of Pitch Circle 15 1/4"

Intermediate Shafts Forged by Material

Finished by

Diar. of Propeller Shafts by Rule 12 2/1" Actual 12 3/8" At Couplings 12 1/2"

Are Propeller Shafts fitted with Continuous Brass Liners? 2 Liners

Diar. over Liners 13 3/8" & 13 1/2" Length of After Bearings 4'-2" x 1/8"

Of what Material are the After Bearings composed? L.V.

Distance from After Bearing in Stern Tube to nearest Tunnel Bearing 20'-0"

Are the After Bearings lubricated with Oil or Sea Water? S.W.

What means are adopted to prevent Sea Water entering the Stern Tubes? ✓

Propeller Shafts Forged by Central Marine Eng. Works Material S

Finished by do.

No. of Propellers 1 Diar. 15'-3" Pitch 16'-0"

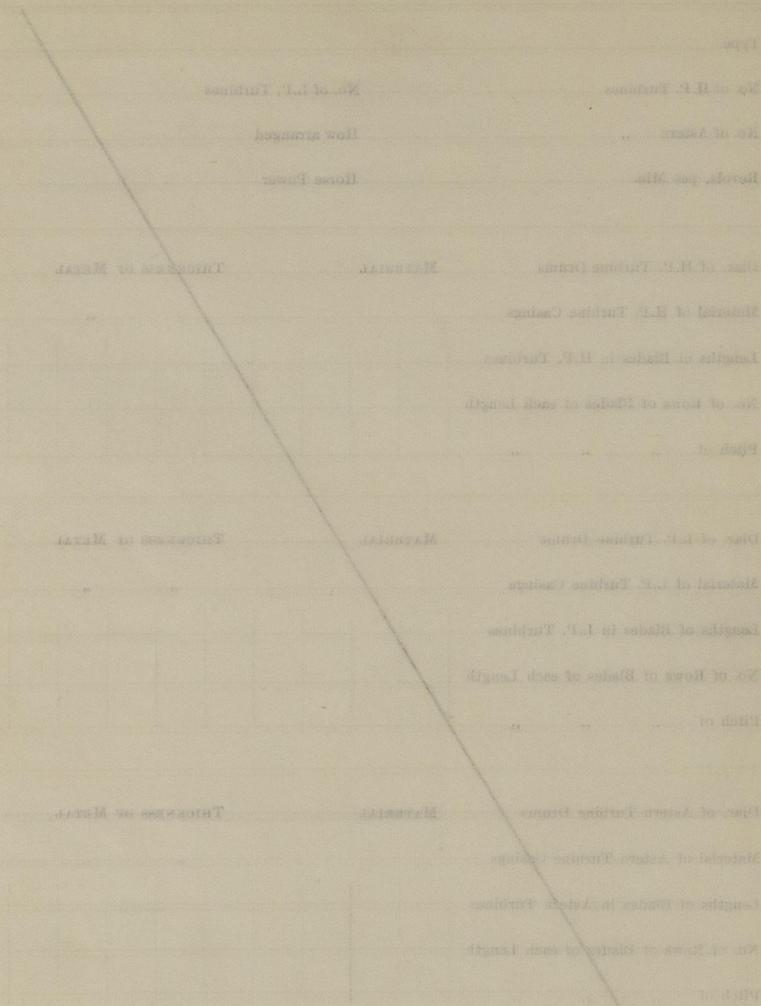
Blades, each Propeller 4 Fitted or Solid Solid

Material of Blades C.S. Boss C.S.

Surface, each Propeller 70 sq ft Diar. of Propeller Rule Diar. of Crank Shaft = 17.04

Coefficient of Displacement of Vessel at 1/2 Moulded Depth .795

SKETCHES



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TURBINE ENGINES.

Type

No. of H.P. Turbines

No. of L.P. Turbines

No. of Astern "

How arranged

Revs. per Min.

Horse Power

Diar. of H.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of H.P. Turbine Casings

Lengths of Blades in H.P. Turbines

No. of Rows of Blades of each Length

Pitch of " " "

Diar. of L.P. Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of L.P. Turbine Casings

Lengths of Blades in L.P. Turbines

No. of Rows of Blades of each Length

Pitch of " " "

Diar. of Astern Turbine Drums

MATERIAL

THICKNESS OF METAL

Material of Astern Turbine Casings

Lengths of Blades in Astern Turbines

No. of Rows of Blades of each Length

Pitch of " " "

Diar. of Turbine Spindles

Length of Bearing

No. of Thrust Collars on each Spindle

Thickness

Distance apart

Diar. of Spindles at Bottom of Collars

Diar. over Collars

Spindles Forged by

Material

" Finished by

SKETCHES.



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SKETCHES.

SKETCHES.

No. of Air Pumps
 Type of
 No. of Air Pump Rods
 How are Air Pumps Worked?
 No. of Crankshaft Connections Pumps
 Location
 Type of Crankshaft Pumps Rods
 How are Crankshaft Pumps Worked?
 How are Crankshaft Pumps Rods from Sea
 How each Crankshaft Pump & Valve Section with Non-return Valve?
 No. of Piston Pumps on each Engine
 What are they pump from?
 Are Spring-loaded Relief Valves fitted to each Pump?
 Can one Pump be connected with the others in a way?
 No. of High Pumps on each Engine
 What are they pump from?
 The back & forward



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PUMPS, ETC

No. of Air Pumps 1 Diar. 17" Stroke 26"
 Type of " Ordinary
 Diar. of Air Pump Rod 2 3/4" Material In. In.
 How are Air Pumps Worked? By levers from L.P. Engine

No. of Centrifugal Circulating Pumps - Maker -
 " Reciprocating " " 1 Diar. 10" Stroke 26"
 Diar. of Circulating Pump Rods 2 1/4" Material In. In.
 How are Circulating Pumps Worked? By levers from L.P. Engine

Diar. of Circulating Pump Suction from Sea 6 1/2"
 Has each Circulating Pump a Bilge Suction with Non-return Valve? Yes Diar. 5"

No. of Feed Pumps on each Engine 2 Diar. 3" Stroke 26"
 Where do they pump from? Hotwell
 " " discharge to? Boilers
 Are Spring-loaded Relief Valves fitted to each Pump? Yes
 Can one Pump be overhauled while the others are at work? Yes

No. of Bilge Pumps on each Engine 2 Diar. 3 1/2" Stroke 26"
 Where do they pump from? All bilges; + sea with Pot Pump
 " " discharge to? On deck, + overboard
 Can one Pump be overhauled while the others are at work? Yes

No. of Bilge Injections connected to Condensers - Diar. -
 Are all Bilge Suctions fitted with Roses? Yes
 Are the Valves, Cocks, and Pipes so arranged as to prevent unintentional connection between Sea and Bilges? Yes.

Are all Sea Connections made with Valves or Cocks fitted direct to the Hull Plating? Yes

Are they placed so as to be easily seen and accessible? Yes

Are the Discharge Chests placed above 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



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BOILERS.

Boilers made by *The Central Marine Eng. Wks.*
 " at *Hartlepool*
 Works No. *R. 169.*
 Date when Plan approved
 Boiler Plates, Iron or Steel *Steel*
 Makers of Shell Plates *Spencer*
 " Internal Plates *do*
 " Furnaces *Brown & Co.*
 " Stay Bars *Spencer*
 " Rivets *Millar*
 Material tested by (B.C., B.T., etc.) *L.R.*
 No. of Boilers *2*
 Single or Double-ended *S.E.*
 No. of Furnaces, each Boiler *3*
 Type of Furnaces *Browns Improved Purvis*
 Approved Working Pressure *160 lbs.*
 Hydraulic Test Pressure *320 lbs.*
 Date of Hydraulic Test *27. 5. 08.*
 " when Safety Valves set *Sep. 25. 08*
 Pressure on Valves *165 lbs.*
 Date of Steam Accumulation Test *Sep. 25. 08*
 Max. Pressure under Accumulation Test *169 lbs.*
 System of Draught *Natural*
 Can Boilers be worked separately? *Yes*
 Greatest inside Diam. of Boilers *13' 9"*
 " " Length " *10' - 0"*
 Square Feet of Heating Surface, each Boiler *1730*
 " Grate " " *42.5*

Donkey Boiler
Cochran & Co.
Auman

6. 10. 08.
92
6. 10. 08.
94



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No. of Safety Valves, each Boiler

2

Diar. " " "

3 1/4"

Area " " "

16.59

Are the Valves fitted with Easing Gear?

Yes

No. of Pressure Gauges, each Boiler

1

" Water " "

1

" Test Cocks, " "

" Salinometer Cocks, " "

1

Are Water Gauge Pillars attached by Pipes to Steam and Water Spaces?

Yes

Are these Pipes connected to Boilers by Cocks or Valves?

Yes

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

Valves

No. of Strakes of Shell Plating in each Boiler

1

" Plates in each Strake

2

Thickness of Shell Plates by Rule

16.7
16

" " Approved

1 1/8"

" " in Boilers

1 1/8"

Are the Rivet Holes Punched or Drilled?

Drilled

Are Rivets Iron or Steel?

Steel

Are the Longitudinal Seams Butt or Lap Joints?

Butt

Are the Double Butt Straps of equal width?

Yes

Thickness of outside Butt Straps

1"

" inside "

1"

Are Longitudinal Seams Hand or Machine Riveted?

Machine

Are they Single, Double, or Treble Riveted?

Treble

Diar. of Rivet Holes

1 1/8"

Pitch "

7 1/4"

Width of Overlap

8 1/8"

Percentage of Strength in Longitudinal Seams

85.3%

2

2 1/4"

7.95



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No. of Rows of Rivets in Centre Circumferential Seams ✓

Are these Seams Hand or Machine Riveted? ✓

Diar. of Rivet Holes ✓

Pitch " ✓

Width of Overlap ✓

No. of Rows of Rivets in End Circumferential Seams 2

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes $1\frac{1}{8}$ "

Pitch " $3\frac{3}{4}$ "

Width of Overlap $4\frac{7}{8}$ "

Size of Manholes in Shell $16" \times 12"$ on boiler backs

Dimensions of Compensating Rings ✓

Thickness of End Plates in Steam Space by Rule $1\frac{1}{16}$

" " " " " Approved $1\frac{3}{16}$

" " " " " in Boilers $1\frac{3}{16}$

Pitch of Steam Space Stays $20" \times 19\frac{1}{2}"$

Eff. Diar. " " " by Rule $2.77"$

" " " " " Approved $2.786"$

" " " " " in Boilers $2.786"$

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 Plate by Rule ✓

" " " " " Approved ✓

" " " " " in Boilers ✓



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Are Stay Tubes fitted with Nuts at Front End? *The outer rows*

Thickness of Back Tube Plates by Rule $\frac{9.8}{16}$

" " " Approved $\frac{3}{4}$ "

" " " in Boilers $\frac{3}{4}$ "

Pitch of Stay Tubes in Back Tube Plates $9" \times 9"$

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

Thickness of Stay Tubes $\frac{5}{16}" \times \frac{3}{8}"$

" Plain " *no. 9. I.S.W.G.*

External Diar. of Tubes $3\frac{1}{4}"$

Material " " *Iron*

Thickness of Furnace Plates by Rule $2\frac{1}{16}"$

" " " Approved $\frac{15}{32}"$

" " " in Boilers $\frac{15}{32}"$

Smallest outside Diar. of Furnaces $3'-0\frac{3}{8}"$

Length between Tube Plates $6'-9\frac{13}{16}"$

Width of Combustion Chambers (Front to Back) $2'-2\frac{3}{32}"$

Thickness of " " " Tops, by Rule $\frac{9.41}{16}$

" " " " Approved $\frac{19}{32}"$

" " " " in Boilers $\frac{19}{32}"$

Pitch of Screwed Stays in C.C. Tops $9" \times 8"$

Eff. Diar. " " " by Rule 1.32

" " " " Approved $1.383"$

" " " " in Boilers $1.383"$

Material " " *Steel*

Thickness of Combustion Chamber Sides by Rule $\frac{9.57}{16}$

[Faint, mostly illegible text and handwritten notes on page 23, including some numbers and phrases like 'Thickness of Combustion Chamber Sides', 'Pitch of Stay Tubes', and 'Eff. Diar.']. The text is mirrored from the reverse side of the page.



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Thickness of Combustion Chamber Sides Approved	$\frac{19}{32}$ "
" " " " in Boilers	$\frac{19}{32}$ "
Pitch of Screwed Stays in C.C. Sides	$8\frac{3}{4}" \times 8\frac{1}{2}"$
Eff. Diar. " " by Rule	1.34
" " " Approved	1.383"
" " " in Boilers	1.383"
Material " "	Steel
Thickness of Combustion Chamber Backs by Rule	$\frac{9.4}{16}$
" " " " Approved	$\frac{19}{32}$ "
" " " " in Boilers	$\frac{19}{32}$ "
Pitch of Screwed Stays in C.C. Backs	$8\frac{3}{4}" \times 8\frac{1}{2}"$
Eff. Diar. " " by Rule	1.33
" " " Approved	1.633 outer rows 1.383 inner rows.
" " " in Boilers	1.633, do. 1.383, do.
Material " "	Steel
Are all Screwed Stays fitted with Nuts inside C.C.	$\frac{1}{32}$
Thickness of Combustion Chamber Bottoms	$\frac{3}{4}"$
No. of Girders over each Wing Chamber	4
" " " Centre "	2
Depth and Thickness of Girders	2 - $\frac{5}{8}"$ Plates \times $8\frac{1}{2}"$ deep.
Material of Girders	Steel
No. of Stays in each	2
No. of Stay Tubes, each Boiler	82
" " Plain " " "	158
Size of lower Manholes	$14" \times 10\frac{1}{2}"$

If the Downy Boilers are Vertical the following particulars should be stated in addition to those on

previous pages applicable to such boilers—

Type of boiler
 Height of Boiler Crown above the Grate
 Are the Boiler Crown Flat or Dished?
 Internal Radius of Topped Ends
 Description of Stays in Boiler Crown
 Pitch of Stays
 Width of Overlap
 Height of Boiler Crown above the Grate
 Are the Boiler Crown Flat or Dished?
 External Radius of Topped Crown
 No. of Crown Stays
 External Diam. of Boiler at Top
 No. of Water Tubes
 Material of Water Tubes
 No. of Screwed Stays in Pressure Shell
 Are they fitted with Nuts inside?

SUPERHEATERS

Description of Superheaters

Where situated

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MAIN STEAM PIPES.

No. of Lengths	1	1		
Material	Copper	Copper		
Brazed, Welded, or Seamless	S.D.	S.D.		
Internal Diar.	4"	5"		
Thickness	6 H.G.	3 H.G.		
How are Flanges Secured?	Brazed	Brazed		
Date of Hydraulic Test	10.9.08	15.9.08		
Test Pressure	400 lbs.	400 lbs.		

REFRIGERATORS.

No. of Machines Makers

Description

When any part of the Vessel is to be used for the Carriage of Refrigerated Cargo the following particulars should be stated:—

Total Cubic Capacity of Refrigerated Spaces

Nature, Construction, Thickness, &c., of Insulation

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

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

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

Are Sluice Valves fitted on any of the Bulkheads of Insulated Spaces?

Are these fitted with Brass Non-return Valves?

Are they always accessible?

Are the Bilges and Bilge Rose Boxes always accessible?

Are the Steam Suctions to Bilges fitted with Non-return Valves?

Is the Machine Room effectively separated from Insulated Spaces?

" " properly Ventilated and Drained?

No. of Steam Cylinders, each Machine Diars.

" Compressors, "

Diar. of Crank Shafts No. of Cranks

Give particulars of Pumps in connection with Refrigerating Plant, and state whether worked by Refrigerating Machines or independently

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

Date of Test under Working Conditions

Fall of Temperature in Insulated Spaces

Time required to obtain this Result

Articles of Spare Gear for Refrigerating Plant carried on board



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

No. of Circuits to which switches are provided on Main Switch Board	Particulars of these Circuits:-	No. of Cables	Zone of Lights	Zone of Power	Current Rating	Size of Conductor	Material of Conductor	Material of Connections	Material of Terminals
---	---------------------------------	---------------	----------------	---------------	----------------	-------------------	-----------------------	-------------------------	-----------------------

Are Cut-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 Cut-outs constructed of Non-inflammable Material?

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

Smallest Single Wire used, No. S.W.G., Largest, No. S.W.G.

How are Conductors in Engine and Boiler Spaces protected?

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

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp

(2) " " passing through Bunkers or Cargo Spaces

(3) " " Deck Beams or Bulkheads

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

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces?

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

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously affected by them?

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

Has the Insulation Resistance over the whole system been tested?

What does the Resistance amount to? Ohms.

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter?

Date of Trial of complete Installation

Duration of Trial

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EVAPORATORS.

No. *1* Type *Central Marine Eng. Works* Tons per Da
 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

DONKEY

- Ballast -
 No. of Donkeys *One*
 Type *Vertical*
 Makers *Central Marine Eng. Works*
 Single or Duplex *Single*
 " Double-Acting *D.A.*
 Diar. of Steam Cylinders *7"*
 " Pumps *8"*
 Stroke of " *8"*
 Where do they pump from? *All bilges, Tanks, Sea.*

Where do they discharge to? *Overboard, Thro' Tanks,
 into all Tanks*

Capacity, Tons per Hour of Ballast Donkey

64

Diar. of Pipe required by Rule for

FEED WATER FILTERS.

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

FORCED DRAUGHT FANS.

No. of Fans Diar. Revols. per min.
 How are Fans driven?

PUMPS.

- Feed -
 No. *One*
 Type *Horizontal*
 Makers *Worthington*
 Single or Duplex *Duplex*
 " Double-Acting *D.A.*
 Diar. of Steam Cylinders *5 1/4"*
 " Pumps *3 1/2"*
 Stroke of " *5"*
 Where do they pump from? *Holwell, Sea, Tanks.*

Boilers *8 on deck*

largest Ballast Tank

4"

Velocity of Water in Pipe

428

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SPARE GEAR.

No. of Top End Bolts	2	No. of Bot. End Bolts	2
„ Main Bearing Bolts	2	„ Coupling Bolts	1 Set
„ Cylr. Cover Bolts Studs	6	„ Valve Chest Cover Bolts Studs	6
„ Feed Pump Valves	1 Set	„ Bilge Pump Valves	1 Set
„ Safety Valve Springs		„ Fire Bars	1/2 Set
„ Piston Rings Springs for H. P.		„ Junk Ring Bolts Studs	
„ Piston Rods	✓	„ Connecting Rods	
„ Valve Spindles	✓	„ Air Pump „	
„ Air Pump Valves		„ „ „ Buckets	
„ Crank Pin Bushes		„ Crosshead Bushes	
„ Crank Shafts		„ Propeller Shafts	
„ Propellers	1	„ „ Blades	
„ Boiler Tubes		„ Condenser Tubes	

OTHER ARTICLES OF SPARE GEAR:—

Bar & Plate Iron Assorted
Bolts, nuts, & Studs Assorted

GENERAL CONSTRUCTION.

Have all the Requirements under Sections 31 and 32 of the Rules been complied with?

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

Surveyor

Machinery built in 1891. & accepted
for classification. - See letter dated
March 12. 08.

Are the Steam Pumping Arrangements in accordance with the approved Plan? *Yes.*

If not, state in what respects they differ and when such differences were sanctioned by the Chief

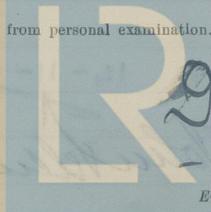
Surveyor ✓

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. *"Hoburn"*

as ascertained by ^{us} ~~me~~ from personal examination.



Duncan Cameron
Ed. Carrol
Engineer Surveyor to the British Corporation for the
Survey and Registry of Shipping.

Fees—

MAIN BOILERS,

H.S. 3460 Sq. ft. 15 : 0 : 0

G.S. 85.5 " : :

Donkey DONKEY BOILERS.

H.S. 350 Sq. ft. : :

G.S. 18.75 " : :

£ : :

ENGINES.

L.P.C. 59.62 Cub. ft. 16 : 0 : 0 Half fee only charged.

£ : : 8 - 0 - 0

Testing, &c. : : 15 - 0 - 0

£ : :

Expenses ... : :

Total ... £ 31 : 0 : 0 of 23 - 0 - 0

It is submitted that this Report be approved,

Robert King
Chief Surveyor.

Approved by the Committee, for the class of M.B.S. (*)
on the 11th November 1908

Fees applied for 13-10-08

Fees paid 15-10-08

14-11-08

Robert Fleming
Secretary.



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