No. 605

# THE BRITISH CORPORATION FOR THE SURVEY AND REGISTRY OF SHIPPING.

Report No. 588 No. in Register Book 1116

S.S. KENORA

Makers of Engines MUIR & HOUSTON

Works No. 617

Makers of Main Boilers MUIR & HOUSTON

Works No. 616

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.

No.

# THE BRITISH CORPORATION FOR THE SURVEY AND REGISTRY OF SHIPPING.

Report No. ..... No. in Register Book 1116

Received at Head Office .....

## Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the KENORA

Port of Registry Glasgow

Registered Owners C. S. S. Plummer

Surveyor's District Glasgow.

Date of Completion of Engines 31/10/8

" " " " Main Boilers 31/10/8

" " " " Donkey " —

Trial Run at Cloch to Cumbrae Date 31/10/8

First Visit Last Visit 31/10/7

Total Number of Visits 25

## ENGINES.

Made by Muir & Houston Ltd.

,, at Harbour Works Works No. 617

Description Triple Expansion Surface Condensing

No. of Cylinders, each Engine 3 Diars. 17" – 28" – 46" Stroke 33"

Cub. feet in each L.P. Cylr. Revols. per Min. 98 I.H.P. 950

Pressure in I.P. Receiver at full Power 63 2nd I.P. L.P. 12

Thickness of Metal in H. P. Cylr. 1⅛" I.P. 1¼" ,, – ,, 1¼

,, ,, ,, ,, Liner 1¼" ,, – ,, – ,, –

,, ,, ,, Valve Chest 1⅛" ,, 1⅛" ,, ,, 1"

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

,, ,, ,, each Receiver? yes

Number of ~~Bolts~~ Studs in H.P. Cylr. Cover 15 I.P. 18 2nd I.P. L.P. 24

Eff. Diar. ,, ,, ,, ·942" ,, ·942" ,, ,, ·942"

Pitch ,, ,, ,, 5" ,, 5½" ,, ,, 6½"

Type of H.P. Valves (Piston or Slide) Piston ,, D.P. Slide ,, ,, D.P. Slide

,, Valve Gear Link Motion

Diameter of Piston Rods (plain part) 4½" At Bottom of Thread 3·82

Makers ,, Forge Prowse Material Steel

Diameter of Connecting Rods (smallest part) 4¼" Material Steel

Makers ,, ,, Forge Prowse

Diar. of Crosshead Gudgeons 4½" Length of Bearing 2@4⅛" Material Steel

No. of Top End Bolts (each Rod) 4 Effective Diar. 1·72" Material Steel

,, Bot. ,, ,, 2 ,, 2·18 ,, "

,, Main Bearings 6 Lengths 10¾

,, Bolts in each 2 Effective Diar. 1·93" Material Steel



No. of Holding Down Bolts, each Engine 37 No. of Metal Chocks 37

Eff. Diar. ,, ,, ,, ·942 Average Pitch 12

Are the Engines bolted directly to the Tank Top? yes

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

Date of Test of Tank by Water Pressure with Holding Down Bolts in place 24/10/7

## SKETCHES.

## SKETCHES.



## SHAFTING.

Are Crank Shafts Built? Yes No. of Lengths in each 3 Angle of Cranks 120°

Diar. of Crank Shafts by Rule 9 3/4 Actual 9 3/8" Diar. in Way of Webs 9 5/8"

Makers of ,, Material Steel

Diar. of Crank Pins 9 3/8" Diar. in Way of Web 9 3/8"

Makers of ,, Material Steel

Width across Crank Webs at Centre of Shaft 1'-5" Thickness 6"

,, ,, ,, ,, Crank Pins 1'-5"

,, ,, ,, Narrowest part 1'-1"

Makers of Crank Webs Fife Forge Material Steel

Diar. or Breadth of Keys in Crank Webs 1 3/8" Length 5 1/2"

,, of Dowel Pins in Crank Pins 1" Length 4 1/2" Screwed or Plain Screwed

No. of Bolts in each Coupling 6 Diar. at Mid Length 2" Diar. of Pitch Circle 1'-1 3/4"

Material of Coupling Bolts Steel

Crank Shafts Finished by Fife Forge

Greatest Distance from edge of Main Bearing to Crank Web 1/2"

Description of Thrust Blocks Horse Shoe type (adjustable)

Number ,, ,, Rings 9 - 5 Shoes

Diar. of Thrust Shafts by Rule 9 3/4 Actual (at bot. of Collars) 9 3/8" Over Collars 1'-3 3/4"

,, ,, at Forward Coupling 9 3/8" After Coupling 9 3/8"

No. of Thrust Collars 5 Thickness 2 1/2" Distance apart 5"

Thrust Shafts Forged by Material Steel

,, Finished by Mc H Ltd

Diar. of Intermediate Shafting by Rule — Actual —

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

Diar. of Bearings — Length — Distance apart —

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

Intermediate Shafts Forged by ✓ — Material

„ „ Finished by

Diar. of Propeller Shafts by Rule 10" — Actual 10" — At Couplings 9 5/8"

Are Propeller Shafts fitted with Continuous Brass Liners? yes

Diar. over Liners 11 1/4" — Length of After Bearings 3'-4"

Of what Material are the After Bearings composed? Lignum Vitae

Distance from After Bearing in Stern Tube to nearest Tunnel Bearing —

Are the After Bearings lubricated with Oil or Sea Water? Sea-water

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

Propeller Shafts Forged by — Material Steel

„ „ Finished by M & H Ltd.

No. of Propellers 1 — Diar. 11' 6" — Pitch 12'-0"

„ Blades, each Propeller 4 — Fitted or Solid Fitted

Material of Blades C.I. & Steel — Boss Cast Steel

Surface, each Propeller 50 ft — Diar. of Propeller / Rule Diar. of Crank Shaft =

Coefficient of Displacement of Vessel at 1/3 Moulded Depth .774



SKETCHES.

## TURBINE ENGINES.

Type

No. of H.P. Turbines — No. of L.P. Turbines

No. of Astern ,, — How arranged

Revols. 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.

SKETCHES.



SKETCHES.

## PUMPS, Etc

No. of Air Pumps 1 Diar. 16" Stroke 18"

Type of " Edwards Type

Diar. of Air Pump Rod 2½" Material M. Metal

How are Air Pumps Worked? From M.E. Crosshead

No. of Centrifugal Circulating Pumps 1 Maker H. Watson & Co

" Reciprocating " " — Diar. — Stroke —

Diar. of Circulating Pump Rods — Material —

How are Circulating Pumps Worked? —

Diar. of Circulating Pump Suction from Sea 7"

Has each Circulating Pump a Bilge Suction with Non-return Valve? yes Diar. 4½"

No. of Feed Pumps on each Engine none Diar. Stroke

Where do they pump from? ✓

" " discharge to?

Are Spring-loaded Relief Valves fitted to each Pump? —

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

No. of Bilge Pumps on each Engine 2 Diar. 3" Stroke 18"

Where do they pump from? All Bilges

" " discharge to? 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

## BOILERS.

| | |
|---|---|
| Boilers made by | Muir & Houston |
| ,, at | Glasgow. |
| Works No. | 617 |
| Date when Plan approved | 18/4/7 |
| Boiler Plates, Iron or Steel | Steel |
| Makers of Shell Plates | David Colville & Sons Ltd |
| ,, Internal Plates | Deighton's Patent Flue & Tube Co. |
| ,, Furnaces | The Steel Co of Scotland Ltd |
| ,, Stay Bars | The Rivet Bolt & Nut Co. Ltd |
| ,, Rivets | |
| Material tested by (B.C., B.T., etc.) | B.C., B.T., & L.R. |
| No. of Boilers | 2 |
| Single or Double-ended | Single |
| No. of Furnaces, each Boiler | 2 |
| Type of Furnaces | Deighton |
| Approved Working Pressure | 185 lbs. per □" |
| Hydraulic Test Pressure | 370 lbs. per □" |
| Date of Hydraulic Test | 4/10/07 |
| ,, when Safety Valves set | 10/07 |
| Pressure on Valves | 190 lbs |
| Date of Steam Accumulation Test | 10/07 |
| Max. Pressure under Accumulation Test | 195 |
| System of Draught | Natural |
| Can Boilers be worked separately? | Yes |
| Greatest inside Diar. of Boilers | 12'-0" = 144" |
| ,, ,, Length ,, | 11'-0" |
| Square Feet of Heating Surface, each Boiler | 1458 ☐ft |
| ,, Grate ,, ,, | 33 ☐ft |



Note
Boilers No. 617 being finished first were put aboard S.S. Regina with Engines No. 616.

| | |
|---|---|
| No. of Safety Valves, each Boiler | Double spring |
| Diar. ,, ,, ,, | 2" |
| Area ,, ,, ,, | 3·14160 □" |
| Are the Valves fitted with Easing Gear? | yes |
| No. of Pressure Gauges, each Boiler | 2 |
| ,, Water ,, ,, | 1 |
| ,, Test Cocks, ,, | 2 |
| ,, 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? | Valves |
| Are Blow-off Cocks or Valves fitted on Boiler Shells? | Back End |

| | |
|---|---|
| No. of Strakes of Shell Plating in each Boiler | 1 |
| ,, Plates in each Strake | 2 |
| Thickness of Shell Plates by Rule | 16·4/16 |
| ,, ,, Approved | 1⅛" |
| ,, ,, in Boilers | 1⅛" |
| 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 | ⅞" |
| ,, inside ,, | 1" |
| Are Longitudinal Seams Hand or Machine Riveted? | Hydraulic |
| Are they Single, Double, or Treble Riveted? | Treble |
| Diar. of Rivet Holes | 1⅛" |
| Pitch ,, | 7·475" |
| Width of Overlap | 8 3/8" |
| Percentage of Strength in Longitudinal Seams | Plate 84·93 Rivet 84·94 |

| | |
|---|---|
| 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? | ~~Both~~ Hand |
| Diar. of Rivet Holes | $1\frac{1}{8}$" |
| Pitch ,, | $3\frac{1}{8}$" |
| Width of Overlap | $5\frac{3}{8}$" |
| Size of Manholes in Shell | 16"×12 |
| Dimensions of Compensating Rings | 2'-6" × 2'-2" × $1\frac{1}{8}$ |
| Thickness of End Plates in Steam Space by Rule | $\frac{15.97}{16}$ |
| ,, ,, ,, ,, ,, Approved | $1\frac{1}{32}$" |
| ,, ,, ,, ,, ,, in Boilers | $1\frac{1}{32}$ |
| Pitch of Steam Space Stays | 16" × 16½" |
| Eff. Diar. ,, ,, ,, by Rule | 2·465 |
| ,, ,, ,, ,, ,, Approved | 2·787" |
| ,, ,, ,, ,, ,, in Boilers | 2787 |
| Material of ,, ,, ,, | Steel |
| How are Stays Secured? | Double Nuts |
| Diar. and Thickness of Loose Washers on End Plates | 9" |
| ,, ,, Riveted ,, ,, ,, | ✓ |
| Width ,, ,, Doubling Strips ,, ,, | ✓ |
| Thickness of Middle Back End Plate by Rule | ✓ $\frac{12.36}{16}$ |
| ,, ,, ,, ,, ,, Approved | ✓ $\frac{7}{8}$ |
| ,, ,, ,, ,, ,, in Boilers | ✓ $\frac{7}{8}$ |

| | |
|---|---|
| Thickness of Doublings in Wide Spaces between Fireboxes | ✓ |
| Pitch of Stays at " " " " | 13" x 8 |
| Eff. Diar. of Stays by Rule | 1·52 |
| " " " Approved | ~~2·037~~ 1·52 |
| " " " in Boilers | 1·6 |
| Material " | Steel |
| Are Stays fitted with Nuts outside? | yes |
| Thickness of Back End Plates at Bottom by Rule | 13·45 / 16 " |
| " " " " " Approved | 7/8 " |
| " " " " " in Boilers | 7/8 " |
| Pitch of Stays at Wide Spaces between Fireboxes | 13" x 8 |
| Thickness of Doublings in " " | ✓ |
| Thickness of Front End Plates at Bottom by Rule | 7/8 " |
| " " " " " Approved | 7/8 |
| " " " " " in Boilers | 3 ? |
| No. of Long. Stays in Spaces between Furnaces | 1·855 " |
| Eff. Diar. of Stays by Rule | 2·037 " |
| " " " " Approved | — |
| " " " " in Boilers | Steel |
| Material of " | |
| Thickness of Front Tube Plates by Rule | 13·75 / 16 " |
| " " " " Approved | 7/8 " |
| " " " " in Boilers | 7/8 " |
| Pitch of Stay Tubes at Spaces between Stacks of Tubes | 14" x 9 " |
| Thickness of Doublings in " " " | 5/8 " |
| " Stay Tubes at " " " | 3/8 " thick |

| | |
|---|---|
| Are Stay Tubes fitted with Nuts at Front End? | yes, some. not all |
| Thickness of Back Tube Plates by Rule | 10·83/16" |
| ,, ,, ,, Approved | 13/16" |
| ,, ,, ,, in Boilers | 13/16" |
| Pitch of Stay Tubes in Back Tube Plates | 9" × 9¼" |
| ,, Plain ,, | 4 5/8" × 4½" |
| Thickness of Stay Tubes | 5/16" & 3/8" |
| ,, Plain ,, | 8 W.G. |
| External Diar. of Tubes | 3¼" |
| Material ,, ,, | Iron |
| Thickness of Furnace Plates by Rule | 8·27/16" |
| ,, ,, ,, Approved | 8·5/16" |
| ,, ,, ,, in Boilers | 17/32 |
| Smallest outside Diar. of Furnaces | 3'-3 13/16" |
| Length between Tube Plates | 7'-1¼" |
| Width of Combustion Chambers (Front to Back) | 2' 9" |
| Thickness of ,, ,, Tops, by Rule, | 9·48/16" |
| ,, ,, ,, ,, Approved | 9·5/16" |
| ,, ,, ,, ,, in Boilers | 19/32" |
| Pitch of Screwed Stays in C.C. Tops | 8×8 |
| Eff. Diar. ,, ,, by Rule | 1·3" |
| ,, ,, ,, Approved | 1·3" |
| ,, ,, ,, in Boilers | 1·358 |
| Material ,, ,, | Steel |
| Thickness of Combustion Chamber Sides by Rule | 9·48/16 |

| | |
|---|---|
| Thickness of Combustion Chamber Sides Approved | 19/32" |
| " " " " in Boilers | 19/32" |
| Pitch of Screwed Stays in C.C. Sides | 8"×8" |
| Eff. Diar. " " by Rule | 1·34" |
| " " " Approved | 1·48" |
| " " " in Boilers | 1·48" |
| Material " " | Steel |
| Thickness of Combustion Chamber Backs by Rule | 9·48/16" |
| " " " " Approved | 9·5/16 |
| " " " " in Boilers | 19/32" |
| Pitch of Screwed Stays in C.C. Backs | 8"×8" |
| Eff. Diar. " " by Rule | 1·34" |
| " " " Approved | 1·34" |
| " " " in Boilers | 1·48" |
| Material " " | Steel |
| Are all Screwed Stays fitted with Nuts inside C.C. | Yes |
| Thickness of Combustion Chamber Bottoms | 13/16 |
| No. of Girders over each Wing Chamber | 6 |
| " " " Centre " | 7 |
| Depth and Thickness of Girders | 8"×1" double |
| Material of Girders | Steel |
| No. of Stays in each | 3 |
| No. of Stay Tubes, each Boiler | 66 |
| " " Plain " " " | 130 |
| Size of lower Manholes | 16"×12" |

## VERTICAL DONKEY BOILERS.

If the Donkey Boilers are Vertical the following particulars should be stated in addition to those on previous Pages applicable to such Boilers:—

Type of Boilers none

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 Effective Diar. Material

External Diar. of Firebox at Top Bottom hickness of Plates

No. of Water Tubes Int. Diar. ,, ,,

Material of Water Tubes

No. of Screwed Stays in Firebox Sides Eff. Diar. Material

Are they fitted with Nuts inside? Outside?

## 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 Superheaters Diar. Area

Are ,, ,, fitted with Easing Gear?

Date of Hydraulic Test Test Pressure

Date when Safety Valves set Pressure on Valves



## SKETCHES.

## MAIN STEAM PIPES.

| | |
|---|---|
| No. of Lengths | 2 |
| Material | Copper |
| Brazed, Welded, or Seamless | S. D. |
| Internal Diar. | ~~8 1/8 G~~ 3 3/4 |
| Thickness | 8 L.S.G. |
| How are Flanges Secured? | Brazed |
| Date of Hyraulic Test | |
| Test Pressure | |

## REFRIGERATORS.

No. of Machines Makers none

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

SKETCHES.



## ELECTRIC LIGHTING.

Installation Fitted by Telford Grier & Mackay.

No. and Description of Dynamos One Multi Polar (4 Pole)

Makers of Dynamos Verity's Ltd

Capacity ,, 80 Amperes, at 110 Volts, 575 Revols. per Min.

Current Alternating or Continuous Direct

Position of Dynamos Top Engine Room Port.

,, Main Switch Board Aft Bkhead beside Dynamo

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

Particulars of these Circuits:—

| No. of Circuit. | Name of Circuit. | Number of Lights. | Candle Power. | Current Required. Amps. | Size of Conductor. | Current Density. | Conductivity of Conductor. | Insulation Resistance per Mile. |
|---|---|---|---|---|---|---|---|---|
| 1 | Captain | 13 | 16 | ·6 | 7/20 | 1000 | 98 | 600 MΩ |
| 2 | Officers | 10 | " | " | " | | | |
| 3 | Wash | 10/16 | 32 | 1·2 | 7/20 | | | |
| 4 | F. Hold | 8 | 16 | ·6 | 1/14 | | | |
| 5 | M " | 8 | " | " | " | | | |
| 6 | A " | 8 | " | " | " | | | |
| 7 | Deck | 12 | " | " | " | | | |
| 8 | Do. | 10 | " | " | " | | | |
| 9 | Saloon | 10 | " | " | 7/20 | | | |
| 10 | Do. | 10 | " | " | 7/20 | | | |
| 11 | Eng. | 13 | " | " | 7/20 | | | |

Total No. of Lights 112 No. of Motors driving Fans, &c. No. of Heaters

Current required for Motors and Heaters

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

Are Cut-outs fitted as follows?—

On Main Switch Board, to Cables of Main Circuits yes

On Aux. ,, ,, each Auxiliary Circuit —

Wherever a Cable is reduced in size no reduction

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 Cut-outs constructed of Non-inflammable Material? yes

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

Smallest Single Wire used, No. 18 S.W.G., Largest, No. 14 S.W.G.

How are Conductors in Engine and Boiler Spaces protected? Armoured & braided

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

What special protection is provided in the following cases?—

(1) Conductors exposed to Heat or Damp A & Gal. Tube

(2) ,, passing through Bunkers or Cargo Spaces Gal. Tubes

(3) ,, ,, Deck Beams or Bulkheads Glands



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? 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? 440000 Ohms.

Is the Installation supplied with a Voltmeter? yes

,, ,, ,, an Ampere Meter? yes

Date of Trial of complete Installation 31/10/7 Duration of Trial 6 hours

## EVAPORATORS.

No. Type 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

| | | |
|---|---|---|
| No. of Donkeys | Ballast | Feed (Aux) |
| Type ,, | H. Watson & Son | do |
| Makers ,, | Single | Duplex |
| Single or Duplex | Double | " |
| ,, Double-Acting | No. 6890 | 6892 |
| Diar. of Steam Cylinders | | |
| ,, Pumps | | |
| Stroke of ,, | | |
| Where do they pump from? | | Hotwell Sea |
| | | Condenser |
| | | Boilers |
| Where do they discharge to? | Overboard | Boilers |
| | | Deck |
| | Condenser | Ash Ejector |

Capacity, Tons per Hour of Ballast Donkey

Diar. of Pipe required by Rule for largest Ballast Tank

Velocity of Water in Pipe



## 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.

| | |
|---|---|
| H. Watson & Son | H. Watson & Son |
| Single | Single |
| Double | double |
| 6677 | |
| | Sea |

## SPARE GEAR.

| | | | |
|---|---|---|---|
| No. of Top End Bolts | 2 | No. of Bot. End Bolts | 2 |
| ,, Main Bearing Bolts | 2 | ,, Coupling Bolts | 1 Set (6) |
| ,, Cylr. Cover Bolts / Studs | 6 | ,, Valve Chest Cover Bolts / Studs | 6 |
| ,, Feed Pump Valves | 2 | ,, Bilge Pump Valves | 2 |
| ,, Safety Valve Springs | 2 | ,, Fire Bars | ½ set |
| ,, Piston Rings | | ,, 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 | | ,, ,, Blades | 4 |
| ,, Boiler Tubes | | ,, Condenser Tubes | 6 |

OTHER ARTICLES OF SPARE GEAR:—

½ cwt. Iron plate
½ cwt. Iron Bars
20 assorted Bolts & nuts
1 set metallic packing for H.P. Cyl.
1 " " " H.P. valve
50 Condenser Tube Ferrules
2 Springs for air Pump Relief valves.



## GENERAL CONSTRUCTION.

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

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

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. Menora

as ascertained by us / me from personal examination.

Engineer Surveyor to the British Corporation for the Survey and Registry of Shipping.

Fees—

| | | £ | s. | d |
|---|---|---|---|---|
| MAIN BOILERS. | | | | |
| H.S. | Sq. ft. | 14 | 0 | 0 |
| G.S. | ,, | | | |
| DONKEY BOILERS. | | | | |
| H.S. | Sq. ft. | | | |
| G.S. | ,, | | | |
| | | £ | | |
| ENGINES. | | | | |
| L.P.C. | Cub. ft. | 10 | 0 | 0 |
| | | £ | | |
| Testing, &c. ... ... ... ... ... ... ... | | | | |
| | | £ | | |
| Expenses ... ... ... ... ... ... ... ... | | | | |
| Total ... | | £ 24 | 0 | 0 |

It is submitted that this Report be approved,

22-4-8 *Chief Surveyor.*

Approved by the Committee, for the Class of 1/1 B.S. on the 22nd of April 1908.

Fees applied for 31-10-7

Fees paid 2-11-7

*Secretary.*