No. 2038

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1907 No. in Register Book 3226

S.S. "Baron Graham" HUSEYIN

Makers of Engines David Rowan & Co. Ltd.

Works No. 827

Makers of Main Boilers D. Rowan & Co. Ltd.

Works No. 827

Makers of Donkey Boiler (none)

Works No.

MACHINERY.

No.

THE BRITISH CORPORATION FOR THE SURVEY AND REGISTRY OF SHIPPING.

Report No. 1907 No. in Register Book 3226

Received at Head Office 14th November 1925

Surveyor's Report on the New Engines, Boilers, and Auxiliary Machinery of the Single ~~Triple~~ ~~Twin~~ ~~Quadruple~~ Screw Steamer

"Baron Graham"

Official No. 148984 Port of Registry Ardrossan

Registered Owners Hogarth Shipping Co. Ltd. Ardrossan.
(H. Hogarth & Sons, Managers)

Engines Built by David Rowan & Co. Ltd.

at Elliot St. Glasgow.

Main Boilers Built by (same)

at

Donkey " " (none.)

at

Date of Completion 12/11/25

First Visit 5/5/25 Last Visit 11/11/25 Total Visits 40

RECIPROCATING ENGINES.

Works No. 827 No. of Sets 1 Description Triple Expansion Surface Condensing, three crank steam engine.

No. of Cylinders each Engine 3 No. of Cranks 3

Diars. of Cylinders 21½", 35½" and 60" Stroke 39"

Cubic feet in each L.P. Cylinder 63·81.

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.? H.P. top & bottom; M.P. & L.P. "

" " " each Receiver? M.P. & L.P.

Type of H.P. Valves, Piston – inside steam

" ~~1st I.P.~~ MP " Andrews & Cameron.

" ~~2nd I.P.~~ "

" L.P. " Double ported slide

" Valve Gear Stevenson link

" Condenser Surface Cooling Surface 1800 sq. ft.

Diameter of Piston Rods (plain part) 6" Screwed part (bottom of thread)

Material " Steel

Diar. of Connecting Rods (smallest part) 5½" Material Steel

" Crosshead Gudgeons 6½" Length of Bearing 9" Material "

No. of Crosshead Bolts (each) 2 Diar. over Thrd. 3¼" Thrds. per inch 4 Material Steel

" Crank Pin " " 2 " 3¼" " 4 " "

" Main Bearings 6 Lengths 5 @ 11½" and 1 @ 11¼"

" Bolts in each 2 Diar. over Thread 2½" Threads per inch 4 Material Steel

" Holding Down Bolts, each Engine 92 Diar. 1¼" No. of Metal Chocks

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? —

Connecting Rods, Forged by Gutehoffnungshutte A.G.

Piston " " } D. Rowan & Co. Ltd.

Crossheads, " }

Connecting Rods, Finished by " "

Piston " " } " "

Crossheads, " }

Date of Harbour Trial 6/11/25.

" Trial Trip 12/11/25.

Trials run at Skelmorlie & Firth of Clyde.

Were the Engines tested to full power under Sea-going conditions? Yes, light ship.

If so, what was the I.H.P.? 1530 Revols. per min. 73

Pressure in ~~1st I.P.~~ H.P. Receiver, 200 lbs., ~~2nd I.P.~~ M.P., 69 lbs., L.P., 12 lbs., Vacuum, 28 ins.

Speed on Trial 10·8 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. 1500 Revols. per min. 73

Estimated Speed

DIMENSIONS.

¶ The only points of difference between this vessel and the "Baron Carnegie" (q.v.) are the diameters of the H.P. cylinder and propeller shaft, length of the firebars, diameters of rods, & minor details, such as threads per inch of screwed stays, etc.

Report no. 1857.
No. in Register Book, 3468.

TURBINE ENGINES.

Works No. Type of Turbines

No. of H.P. Turbines No. of I.P. No. of L.P. No. of Astern

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

Is Single or Double Reduction Gear employed?

Diar. of 1st Reduction Pinion } Width Pitch of Teeth

" 1st " Wheel

Estimated Pressure per lineal inch

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

" 2nd " Wheel

Estimated Pressure per lineal inch

Revols. 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 Revols. 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.

TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

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

Is Single or Double Reduction Gear employed?

Description of Motors

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

Estimated Pressure per lineal inch

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

Estimated Pressure per lineal inch

Revols. 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 Revols. per min. S.H.P.

Makers of Turbines

" Generators

" Motors

" Reduction Gear

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

SHAFTING.

Are the Crank Shafts Built or Solid? Built

No. of Lengths in each 3 Angle of Cranks 120°

Diar. by Rule 11·56" Actual 11·625 In Way of Webs 11 3/8"

" of Crank Pins 11 5/8" Length between Webs 12"

Greatest Width of Crank Webs 22 1/2" Thickness 7 1/4"

Least " " 17 1/2" " "

Diar. of Keys in Crank Webs 2" Length 5"

" Dowels in Crank Pins 1" Length 2 1/2" Screwed or Plain Plain

No. of Bolts each Coupling 6 Diar. at Mid Length 2 3/8" Diar. of Pitch Circle 17 1/2"

Greatest Distance from Edge of Main Bearing to Crank Web 1/4"

Type of Thrust Blocks Horse-shoe

No. " ~~Rings~~ Shoes 4

Diar. of Thrust Shafts at bottom of Collars 11 3/8" No. of Collars 4

" " Forward Coupling 11 5/8" At Aft Coupling 11 5/8"

Diar. of Intermediate Shafting by Rule 11·008" Actual 11 1/8" No. of Lengths 5

No. of Bolts, each Coupling 6 Diar. at Mid Length 2 5/8" Diar. of Pitch Circle 17 1/2"

Diar. of Propeller Shafts by Rule 12·34" Actual 13 9/16" At Couplings 11 5/8"

Are Propeller Shafts fitted with Continuous Brass Liners? Yes.

Diar. over Liners 14 15/16" Length of After Bearings 5'-6"

Of what Material are the After Bearings composed? Lignum Vitae.

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.

See "Baron Carnegie"

No. of Blades each Propeller 4 Fitted or Solid? Solid

Material of Blades and Boss Bronze.

Diar. of Propellers 16'-0 Pitch 16'-0 Surface (each 91 S. ft.

Coefficient of Displacement of Vessel at ⅔ Moulded Depth

Crank Shafts Forged by Gutehoffnungshutte Co Material I. S.

" Pins " " " " "

" Webs " Beardmore & Co Ltd " "

Thrust Shafts " Gutehoffnungshutte Co " "

Intermed. " " " " " "

Propeller " " " " " "

Crank " Finished by B. Rowan & Co Ltd

Thrust " " " "

Intermed. " " " "

Propeller " " " "

STAMP MARKS ON SHAFTS.

B.C.	1 crank shaft
3266	1 " "
J.W.H.	5 tunnel "
16/9/25	1 tail "

SKETCH OF PROPELLER SHAFT.

See "Baron Carnegie"

PUMPS, ETC.

No. of Air Pumps Diar. Stroke

Worked by Main or Independent Engines?

No. of Circulating Pumps One Diar. Stroke

Type of " Independent Centrifugal 14529 by Henry Watson & Sons Ltd.

Diar. of " Suction from Sea

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

What other Pumps can circulate through Condenser?

No. of Feed Pumps on Main Engine Diar. Stroke

Are Spring-loaded Relief Valves fitted to each Pump?

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

No. of Independent Feed Pumps One Diar. 78258 Stroke by G. & J. Weir Ltd.

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine 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?

Are all Bilge Suctions fitted with Roses?

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges?

Are all Sea Connections made with Valves or Cocks next the Ship's sides?

Are they placed so as to be easily accessible?

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

Are they fitted direct to the Hull Plating and easily accessible?

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges on the Outside?

See "Baron Carnegie"

BOILERS.

Works No. 824.

No. of Boilers 2 Type Horizontal return tube

Single or Double-ended Single

No. of Furnaces in each 3

Type of Furnaces Deighton

Date when Plan approved 26/2/25.

Approved Working Pressure 200 lbs/□"

Hydraulic Test Pressure 350 lbs/□"

Date of Hydraulic Test 19/10/25

" when Safety Valves set 6/11/25

Pressure at which Valves were set 205 lbs/□"

Date of Accumulation Test 6/11/25

Maximum Pressure under Accumulation Test (none.)

System of Draught Natural

Can Boilers be worked separately? Yes.

Makers of Plates Fried Krupp, Essen, Germany

" Stay Bars Lanarkshire Steel Co. Ltd.

" Rivets Rivet bolt and nut co Ltd.

" Furnaces Deightons Patent Flue & Tube Co. Ltd.

Greatest Internal Diar. of Boilers 15'-10 9/16"

" " Length " 11'-6"

Square Feet of Heating Surface each Boiler 2563

" " Grate " " 38.75.

No. of Safety Valves each Boiler 2 Rule Diar. 2 3/8" f. Actual 3/4"

Are the Safety Valves fitted with Easing Gear? Yes.

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

" Test Cocks " 3 " Salinometer Cocks "

B. C. TEST
4927
350 lb.
W.P. 200 lb.
J.W.H.
19/10/25.

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? Direct.

Are these Pipes connected to Boilers by Cocks or Valves? ———

Are Blow-off Cocks or Valves fitted on Boiler Shells? No, valves on bottom back-end plates.

No. of Strakes of Shell Plating in each Boiler One.

" Plates in each Strake 3.

Thickness of Shell Plates Approved 1 7/16"

" " in Boilers 4

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 3/32"

" inside " 1 7/32"

Are Longitudinal Seams Hand or Machine Riveted? Machine

Are they Single, Double, or Treble Riveted? Treble

No. of Rivets in a Pitch 5.

Diar. of Rivet Holes 1 1/2" Pitch 10 1/4"

No. of Rows of Rivets in Centre Circumferential Seams —

Are these Seams Hand or Machine Riveted? —

Diar. of Rivet Holes — Pitch —

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

Are these Seams Hand or Machine riveted? Hand

Diar. of Rivet Holes 1 5/16" Pitch 3·426"

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

Are these Seams Hand or Machine Riveted? Machine.

Diar. of Rivet Holes 1 1/2" Pitch 4·075"

Size of Manholes in ~~Shell~~ Top back endplate 16" × 12"

Dimensions of Compensating Rings —

Thickness of End Plates in Steam Space Approved 1 13/32"

" " " " " in Boilers 1 13/32" bare.

Pitch of Steam Space Stays See Sketch

Diar. " " " " Approved 3/4 Body Threads per Inch 6/" Swelled to 3 1/2"

" " " " " in Boilers " " "

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 25/32"

" " " " " in Boilers "

Thickness of Doublings in Wide Spaces between Fireboxes —

Pitch of Stays at " " " " 13 3/8" × 8 1/4"

Diar. of Stays Approved 1 3/4" Threads per Inch 9

" " in Boilers " "

Material " Steel

Are Stays fitted with Nuts outside? Yes. except 3rd row from top which project 3/8" and are caulked.

Thickness of Back End Plates at Bottom Approved 25/32"

" " " " " in Boilers "

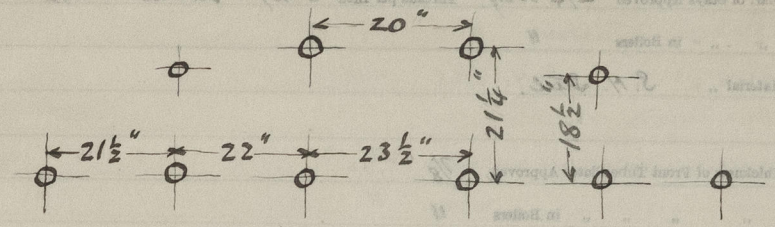
Pitch of Stays at Wide Spaces between Fireboxes from 13 3/8"

Thickness of Doublings in " " —

Thickness of Front End Plates at Bottom Approved 7/8"

" " " " " in Boilers —"

No. of Longitudinal Stays in Spaces between Furnaces None — 2 in each wing box from front end to back tube plate.



Diar. of Stays Approved 2¼ body Threads per Inch 6 th/" swelled to 2½"

" " in Boilers "

Material " S. M. Steel.

Thickness of Front Tube Plates Approved ⅞"

" " " " in Boilers "

Pitch of Stay Tubes at Spaces between Stacks of Tubes 13⅞" × 8¼"

Thickness of Doublings in " " " —

" Stay Tubes at " " " 5/16"

Are Stay Tubes fitted with Nuts at Front End? yes.

Thickness of Back Tube Plates Approved ¾"

" " " in Boilers "

Pitch of Stay Tubes in Back Tube Plates 12¾" × 8½" × 8¼"

" Plain " 4¼" × 4⅛"

Thickness of Stay Tubes ¼", 5/16" & ⅜"

" Plain " 8 W.G.

External Diar. of Tubes 3"

Material " Iron L. W.

Thickness of Furnace Plates Approved 45/64"

" " " in Boilers "

Smallest outside Diar. of Furnaces 4'-0 13/32"

Length between Tube Plates 7'-2"

Width of Combustion Chambers (Front to Back) 3'-2 19/32"

Thickness of " " Tops Approved 23/32"

" " " in Boilers "

Pitch of Screwed Stays in C.C. Tops 9¾" × 9¼" wings 9¼" × 8" centre.

Diar. of Screwed Stays Approved 1 3/4" Threads per Inch 9

" " " in Boilers "

Material " " S. M. Steel

Thickness of Combustion Chamber Sides Approved 23/32"

" " " " in Boilers "

Pitch of Screwed Stays in C.C. Sides 9 1/4 × 9" × 8 1/4 at bottom

Diar. " " Approved 1 3/4" Threads per Inch 9

" " " in Boilers "

Material " " S.M. Steel

Thickness of Combustion Chamber Backs Approved 21/32"

" " " " in Boilers 22/32"

Pitch of Screwed Stays in C.C. Backs 8 3/4" × 8 1/4"

Diar. " " Approved 1 7/8" 3/4" 7/8" × 2" Threads per Inch 9

" " " in Boilers "

Material " " S. M. Steel.

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

Thickness of Combustion Chamber Bottoms 7/8" ✓

No. of Girders over each Wing Chamber 4

" " " Centre " 3

Depth and Thickness of Girders 10 3/8" × 2 - 7/8" plates

Material of Girders Steel

No. of Stays in each 3

No. of Tubes, each Boiler 368.

Size of Lower Manholes 16" × 12"

VERTICAL DONKEY BOILERS.

No. of Boilers Type

Greatest Int. Diar. Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished ?

Internal Radius of Dished Ends Thickness of Plates

Description of Seams in Boiler Crowns

Diar. of Rivet Holes Pitch Width of Overlap

Height of Firebox Crowns above Fire Grate

Are Firebox Crowns Flat or Dished ?

External Radius of Dished Crowns Thickness of Plates

No. of Crown Stays Diar. Material

External Diar. of Firebox at Top Bottom Thickness of Plates

No. of Water Tubes Ext. Diar. Thickness

Material of Water Tubes

Size of Manhole in Shell

Dimensions of Compensating Ring

Heating Surface, each Boiler Grate Surface

SUPERHEATERS.

Description of Superheaters

Where situated ?

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working ?

No. of Safety Valves on each Superheater Diar.

Are ,, ,, fitted with Easing Gear ?

Date of Hydraulic Test Test Pressure

Date when Safety Valves set Pressure on Valves

MAIN STEAM PIPES.

No. of Lengths	2			
Material	Steel			
Brazed, Welded or Seamless	welded			
Internal Diar.	4½"			
Thickness	¼"			
How are Flanges secured ?	Sc'd & exp'd.			
Date of Hydraulic Test	2/10/25			
Test Pressure	600 lbs/□"			
No. of Lengths				
Material				
Brazed, Welded or Seamless				
Internal Diar.				
Thickness				
How are Flanges secured ?				
Date of Hydraulic Test				
Test Pressure				
No. of Lengths				
Material				
Brazed, Welded or Seamless				
Internal Diar.				
Thickness				
How are Flanges secured ?				
Date of Hydraulic Test				
Test Pressure				

EVAPORATORS.

No. 1 Type Copper coil heating Tons per Day 20

Makers G. & J. Weir Ltd

Working Pressure 25 Test Pressure 50 Date of Test 10·9·25.

Date of Test of Safety Valves under Steam 11/11/25.

FEED WATER HEATERS. 78257

No. 1 Type Direct Contact

Makers G & J. Weir Ltd

Working Pressure 15-20 lbs Test Pressure 40 Shell 400 coils Date of Test 10·9·25.

FEED WATER FILTERS.

No. 1 Type High pressure 3611 Size 2½"

Makers Dare & Horne Ltd

Working Pressure 200 Test Pressure 480 Date of Test 1·10·25.

Steering Gear. 285

One vert. 2 cyl. steam worm & wheel, spur wheel & quadrant, with patent hydraulic shock & vibration damper, by Macgregor, Port-Glasgow.
(Brown's telemotor.)

LIST OF DONKEY PUMPS.

Ballast. vert. dup. 8" × 10" by D. Rowan & Co. Ltd.

G. S. vert. dup. 8" × 5" × 8" by 13206 Thom, Lamont & Co. Ltd.

Harbour vert. dup. 5" × 5" × 6" by 13096 Thom, Lamont & Co. Ltd.

SPARE GEAR.

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

OTHER ARTICLES OF SPARE GEAR:—

See "Baron Carnegie".

REFRIGERATORS.

No. of Machines Capacity of each

Makers

Description

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

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.

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

Driven by direct-coupled single cylinder steam engine R/14301/3 by dynamo-makers.
7 × 6"

ELECTRIC LIGHTING.

Installation Fitted by Telford, Grier & Mackay Ltd.

No. and Description of Dynamos One 8 Kw. Compound wound E/14302/3

Makers of Dynamos W.H. Allen, Sons & Co. Ltd.

Capacity " 73 Amperes, at 110 Volts, 330 Revols. per Min.

Current Alternating or Continuous Continuous.

Single or Double Wire System Double.

Position of Dynamos Above engine-room store. (Starbd.)

" Main Switch Board " " " " "

No. of Circuits to which Switches are provided on Main Switch Board 6

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power. Watts.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
Forward	21	20	4	1/.064	1333	100 %	600 MΩ
Aft	36	20	7	7/.029	1556	100 %	600 MΩ
W/T			14	7/.036	2000	100 %	600 MΩ
Navigation	13	various	6	7/.029	1333	100 %	600 MΩ
Accomodation	38	20	7	7/.029	1556	100 %	600 MΩ
Engine Room.	21	20	4	7/.029	889	100 %	600 MΩ

Total No. of Lights 129 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 (none.)

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 Yes.

To each Lamp Circuit Yes.

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

Are the Fuses of Standard Sizes? Yes.

Are all Switches and 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. ·064 S.W.G., Largest, No. ·064 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 armoured

(3) ,, ,, Deck Beams or Bulkheads Bored & reamered holes in beams: W.T. packing glands in 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? 1·33 Meg Ohms.

Is the Installation supplied with a Voltmeter? Yes.

,, ,, ,, an Ampere Meter? Yes.

Date of Trial of complete Installation 12/11/25 Duration of Trial 6 hours.

Have all the requirements of Section 42 been satisfactorily carried out? Yes.

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.

as ascertained by us/me from personal examination

J. Wood Harrington.
Geo. M. Inst.

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

Fees—

		£	s.	d.
MAIN BOILERS.				
H.S.	Sq. ft.		:	:
G.S.	"		:	:
DONKEY BOILERS.				
H.S.	Sq. ft.		:	:
G.S.	"		:	:
		£	:	:
ENGINES.				
L.P.C.	Cub. ft.		:	:
		£	:	:
Testing, &c.			:	:
		£	:	:
Expenses			:	:
	Total ...	£	:	:

It is submitted that this Report be approved,

Chief Surveyor.

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

Fees advised

Fees paid

Secretary.