"Under Shop"

No. 1594 "ALIWAL"

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. 1429 No. in Register Book 2569.

HOEVELD

S.S. "ENUGU"

Makers of Engines R'DSONS W'GARTH & Co M'BRO.

Works No. 2529.

Makers of Main Boilers R'DSONS W'GARTH & Co M'BRO.

Works No. 2529.

Makers of Donkey Boiler ✓

Works No. ✓

MACHINERY.

014751-014762-0164

No.

THE BRITISH CORPORATION FOR THE SURVEY AND REGISTRY OF SHIPPING.

Report No. 1429 No. in Register Book 2569.

Received at Head Office 21st February 1922

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

S. S. "Enugu"

Official No. Port of Registry Lagos.

Registered Owners The Crown Agents for Colonies

Engines Built by Messrs R'deons W'garth & Co. Ltd, M'bro.

at Middlesbrough.

Main Boilers Built by Messrs R'deons W'garth & Co. Ltd

at Middlesbrough.

Donkey " "

at

Date of Completion 11th September 1920.

First Visit 15-8-19 Last Visit 11-9-20 Total Visits 80

RECIPROCATING ENGINES.

Works No. 2529. No. of Sets One Description Triple expansion, surface condensing.

No. of Cylinders each Engine Three No. of Cranks Three.

Diars. of Cylinders 18" — 30" — 50" Stroke 33"

Cubic feet in each L.P. Cylinder 37.5.

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

" " " each Receiver? Yes.

Type of H.P. Valves, Piston.

" 1st I.P. " Slide

" 2nd I.P. " —

" L.P. " Slide.

" Valve Gear Stephenson's

" Condenser Surface Cooling Surface 1132. sq. ft.

Diameter of Piston Rods (plain part) $4\frac{3}{4}$" Screwed part (bottom of thread) $3\frac{1}{2}$", 6 thds.

Material " Ingot steel.

Diar. of Connecting Rods (smallest part) $4\frac{3}{4}$" Material Ingot steel.

" Crosshead Gudgeons 5" Length of Bearing 9 Material do.

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

" Crank Pin " " 2 " $2\frac{1}{2}$ " 6 " Steel

" Main Bearings 6 Lengths $9\frac{3}{4}$" × 10"

" Bolts in each 2 Diar. over Thread $2\frac{1}{4}$" Threads per inch Material M.S.

" Holding Down Bolts, each Engine 63 Diar. $1\frac{1}{4}$" No. of Metal Chocks 40

Are the Engines bolted to the Tank Top or to a Built Seat? Direct to 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 Clarke's Crank & Forge Co. Ltd.

Piston " " do.

Crossheads, " John Spencer & Sons.

Connecting Rods, Finished by R W & Co. N' bro.

Piston " " do.

Crossheads, " do.

Date of Harbour Trial 17 — 6 — 20.

" Trial Trip 11 — 9 — 20.

Trials run at mouth of Tees.

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

If so, what was the I.H.P.? 939. Revols. per min. 79

Pressure in 1st I.P. Receiver, 145 lbs., 2nd I.P., 65 lbs., L.P., 11 lbs., Vacuum, 25.5 ins.

Speed on Trial $10\frac{1}{2}$ 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. Revols. per min.

Estimated Speed

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?

Revols. per min. of H.P. Turbines at Full Power

" " 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

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

Revols. per min. of Generators at Full Power

" " Motors "

" " Propellers "

Total Shaft Horse Power "

Date of Harbour Trial

" Trial Trip

Trials run at

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

SHAFTING.

Are the Crank Shafts Built or Solid? Built.

No. of Lengths in each 2 Angle of Cranks 120°

Diar. by Rule 9.31 Actual 9 3/4" In Way of Webs 10"

" of Crank Pins 9 3/4" Length between Webs 10"

Greatest Width of Crank Webs 18" Thickness 6"

Least " " 18" " 6"

Diar. of Keys in Crank Webs 1 3/4" dia Length 4" plain

" Dowels in Crank Pins ✓ Length ✓ Screwed or Plain ✓

No. of Bolts each Coupling 6 Diar. at Mid Length 2 5/16" Diar. of Pitch Circle 14 1/4"

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

Type of Thrust Blocks Horseshoe.

No. " Rings 5.

Diar. of Thrust Shafts at bottom of Collars 9 3/4" No. of Collars 5.

" " Forward Coupling 9 3/4" At Aft Coupling 9 3/4"

Diar. of Intermediate Shafting by Rule ✓ Actual ✓ No. of Lengths

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

Diar. of Propeller Shaft by Rule 10.33 Actual 10 3/4" At Couplings 9 3/4"

Are Propeller Shafts fitted with Continuous Brass Liners? Yes

Diar. over Liner 12 1/4" Length of After Bearings 3'-7"

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

Are Means provided for lubricating the After Bearings with Oil? No

" " to prevent Sea Water entering the Stern Tubes? No.

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

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

Material of Blades C. I. Boss

Diar. of Propellers 13'-3" Pitch 15'-0" Surface (each) 60 S. ft.

Coefficient of Displacement of Vessel at ⅔ Moulded Depth . 4164.

Crank Shafts Forged by	R W & Co. H'pool	Material	I. S.
„ Pins „	do	„	I. S.
„ Webs „	do	„	I. S.
Thrust Shafts „	Inch Forge Co.	„	I. S.
Intermed. „ „	✓	„	
Propeller „ „	Inch Forge Co.	„	I. S.
Crank „ Finished by	R W & Co. H'pool.		
Thrust „ „	do.		
Intermed. „ „	✓		
Propeller „ „	Red & Co. H'pool.		

STAMP MARKS ON SHAFTS.

Thrust-shaft & Tail end shaft.

B.C.
No. 3503.
B.H.
20-4-20

Spare Tail End Shaft.

B.C.
No. 3508.
B.H.
28-6-20

SKETCH OF PROPELLER SHAFT.

Mark stamped on Crank Shaft.

B.C.
No. 3445.
J.D.S.
29-8-19.

PUMPS, ETC.

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

Worked by Main or Independent Engines? Main engine, by pump levers off the H.P. engine.

No. of Circulating Pumps One Diar. 9½" Stroke 18"

Type of " Reciprocating

Diar. of " Suction from Sea 7"

Has each Pump a Bilge Suction with Non-return Valve? Yes. Diar. 7"

What other Pumps can circulate through Condenser? Ballast Donkey Pump.

No. of Feed Pumps on Main Engine 2. Diar. 2½" Stroke 18"

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

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

No. of Independent Feed Pumps ✓ Diar. ✓ Stroke ✓

What other Pumps can feed the Boilers? General Service

No. of Bilge Pumps on Main Engine 2 Diar. 3½" Stroke 18"

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

No. of Independent Bilge Pumps None.

What other Pumps can draw from the Bilges? Ballast Donkey Pump.

Are all Bilge Suctions fitted with Roses? Yes.

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

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

Are they placed so as to be easily accessible? Yes.

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.

Works No. 2529.

No. of Boilers 2 Type Cylindrical multitubular

Single or Double-ended Single

No. of Furnaces in each 3.

Type of Furnaces Deighton.

Date when Plan approved 16/12/18

Approved Working Pressure 180 lbs.

Hydraulic Test Pressure 360 lbs.

Date of Hydraulic Test 5-8-19.

" when Safety Valves set 17-6-20.

Pressure at which Valves were set 185 lbs.

Date of Accumulation Test 17-6-20.

Maximum Pressure under Accumulation Test 195 lbs.

System of Draught Natural.

Can Boilers be worked separately? Yes

Makers of Plates D. Colville & John Spence & Sons.

" Stay Bars Messrs Spencer & Sons Ltd.

" Rivets The Rivet & Bolt & Nut Co.

" Furnaces The Leeds Forge Co.

Greatest Internal Diar. of Boilers 12'-10 15/16"

" " Length " 10'-6"

Square Feet of Heating Surface each Boiler 1443 ft.

" " Grate " " 48·56 ft

No. of Safety Valves each Boiler 2 Diar. 2½"

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 One.

Mark stamped on Two Main Boilers

B.C.
No. 3034.
360 lbs.
T.E.K.
5-8-19.

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? Valves.

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

" Plates in each Strake One.

Thickness of Shell Plates Approved

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

Are the Rivets Iron or Steel? Steel

Are the Longitudinal Seams Butt or Lap Joints? Butt Joints.

Are the Butt Straps Single or Double? Double.

Are the Double Butt Straps of equal width? Yes.

Thickness of outside Butt Straps 1"

" nside " 1"

Are Longitudinal Seams Hand or Machine Riveted? Machine Riveted.

Are they Single, Double, or Treble Riveted? Treble.

No. of Rivets in a Pitch 10.

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

No. of Rows of Rivets in Centre Circumferential Seams ✓

Are these Seams Hand or Machine Riveted? ✓

Diar. of Rivet Holes ~~$\frac{7}{8}$~~" Pitch ~~$3\frac{1}{2}$~~"

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

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes $1\frac{1}{8}$" Pitch $3\frac{1}{2}$"

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

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes $1\frac{1}{8}$" Pitch $3\frac{1}{2}$"

Size of Manholes in Shell 16" × 12"

Dimensions of Compensating Rings 2'-7¾" × 2'-3¾"

Thickness of End Plates in Steam Space Approved $1\frac{1}{4}$"

" " " " " in Boilers $1\frac{1}{4}$"

Pitch of Steam Space Stays $22\frac{5}{8}$" Horiz × $17\frac{1}{4}$" Vert

Diar. " " " " Approved $3 + 3\frac{1}{4}$ Threads per Inch 6

" " " " " in Boilers $3 - 3\frac{1}{4} + 5 - 3$" 5 + 6 respectively.

Material of " " " Steel

How are Stays Secured? Nutted inside + outside steam space.

Diar. and Thickness of Loose Washers on End Plates $9\frac{3}{4}$" × $\frac{7}{8}$"

" " Riveted " " " ✓

Width " " Doubling Strips " " ✓

Thickness of Middle Back End Plates Approved $\frac{13}{16}$"

" " " " " in Boilers $\frac{13}{16}$"

Thickness of Doublings in Wide Spaces between Fireboxes ✓

Pitch of Stays at " " " " 13" × $8\frac{7}{8}$"

Diar. of Stays Approved $1\frac{3}{4}$" $1\frac{5}{8}$" Threads per Inch 9

" " in Boilers $1\frac{3}{4}$" + $1\frac{5}{8}$" 9. (Outer & Inner Stays respectively)

Material " Steel

Are Stays fitted with Nuts outside? Yes.

Thickness of Back End Plates at Bottom Approved $\frac{13}{16}$"

" " " " " in Boilers $\frac{13}{16}$"

Pitch of Stays at Wide Spaces between Fireboxes 13" × $8\frac{7}{8}$"

Thickness of Doublings in " " ✓.

Thickness of Front End Plates at Bottom Approved 1"

" " " " " in Boilers 1"

No. of Longitudinal Stays in Spaces between Furnaces None.

Diar. of Stays Approved	✓	Threads per Inch
" " in Boilers	✓	
Material "	✓	
Thickness of Front Tube Plates Approved	1"	
" " " " in Boilers	1"	
Pitch of Stay Tubes at Spaces between Stacks of Tubes	14" × 9"	
Thickness of Doublings in " " "	✓	
" Stay Tubes at " " "	5/16" & 3/8"	
Are Stay Tubes fitted with Nuts at Front End ?	No.	
Thickness of Back Tube Plates Approved	3/4"	
" " " in Boilers	3/4"	
Pitch of Stay Tubes in Back Tube Plates	Various	
" Plain "	4 7/16" horizl × 4 1/2" vertl	
Thickness of Stay Tubes	5/7 — 5/16", & 4 — 3/8".	
" Plain "	125 — 9 W.G.	
External Diar. of Tubes	3 1/4"	
Material "	Iron.	
Thickness of Furnace Plates Approved	1/2"	
" " " in Boilers	1/2"	
Smallest outside Diar. of Furnaces	3' — 2"	
Length between Tube Plates	7' — 1"	
Width of Combustion Chambers (Front to Back)	2' — 6 5/8"	
Thickness of " " Tops Approved	5/8"	
" " " " in Boilers	5/8"	
Pitch of Screwed Stays in C.C. Tops	8 1/2", girders 8 3/4" apart.	

Diar. of Screwed Stays Approved 1 5/8" Threads per Inch 9

" " " in Boilers 1 5/8" 9.

Material " " Steel.

Thickness of Combustion Chamber Sides Approved 5/8"

" " " " in Boilers 5/8"

Pitch of Screwed Stays in C.C. Sides 8 3/4" × 8 1/2" vert.

Diar. " " Approved Threads per Inch

" " " in Boilers 1 5/8" 9.

Material " " Steel.

Thickness of Combustion Chamber Backs Approved 5/8"

" " " in Boilers 5/8"

Pitch of Screwed Stays in C.C. Backs 8 3/8" horiz × 8 7/8" vert.

Diar. " " Approved 1 5/8" Threads per Inch 9

" " " in Boilers 1 5/8" 9.

Material " " Steel.

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

Thickness of Combustion Chamber Bottoms 11/16"

No. of Girders over each Wing Chamber 3.

" " " Centre " 2.

Depth and Thickness of Girders 8 5/8" × 11/16" thick each plate.

Material of Girders Steel.

No. of Stays in each 2.

No. of Tubes, each Boiler 186.

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	W.I.			
Brazed, Welded or Seamless	Lap Welded.			
Internal Diar.	4"			
Thickness	5/16"			
How are Flanges secured?	Screwed			
Date of Hydraulic Test	10-6-20			
Test Pressure	540			

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. Type Tons per Day

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

FEED WATER FILTERS.

No. Type Size

Makers

Working Pressure Test Pressure Date of Test

LIST OF DONKEY PUMPS.

General Service pump.
Weirs Duplex.
5" dia pump.
7" " cyl.
12" stroke.
Draws from Sea
Winch Condenser
Boilers
Tanks.
Discharge to
Deck, overboard &
Boilers.

Ballast pump.
Lamont Vert
Duplex.
7-8 × 8.
Draws Bilge main
Bilge direct
Sea
Tanks.
Discharge to
Tanks, main Cond.
overboard & deck.

Auxiliary Condenser Pump.
Howard Tyler
Horiz'l Duplex
6-6 × 6.

SPARE GEAR.

No. of Top End Bolts.	2	No. of Bot. End Bolts.	2	No. of Cylinder Cover Studs	6
„ Coupling Bolts	6	„ Main Bearing Bolts	2	„ Valve Chest „	6
„ Junk Ring Bolts	12	„ Feed Pump Valves	1 Set	„ Bilge Pump Valves	1 Set
„ H.P. Piston Rings		„ I.P. Piston Rings		„ L.P. Piston Rings	
„ „ Springs		„ „ Springs		„ „ Springs	
„ Safety Valve „	2	„ Fire Bars	100	„ 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 Set
„ Crank Shafts		„ Crank Pin Bushes		„ Crosshead Bushes	
„ Propeller Shafts		„ Propellers		„ Propeller Blades	
„ Boiler Tubes	8	„ Condenser Tubes	8	„ Condenser Ferrules	16

OTHER ARTICLES OF SPARE GEAR:—

1 Set piston rings Ballast pump steam cylinder.
1 Set rings Ballast pump bucket.
1 " " for piston Weirs feed pump.
1 " " " bucket " " "

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:—

ELECTRIC LIGHTING.

Installation Fitted by Messrs Campbell & Isherwood Ltd.

No. and Description of Dynamos 7½ K.W. 100 Volts Compound Wound.

Makers of Dynamos Campbell & Isherwood Ltd.

Capacity „ 75 Amperes, at 100 Volts, 350 Revols. per Min.

Current Alternating or Continuous Campbell & Isherwood Ltd.

Single or Double Wire System Double.

Position of Dynamos E.R. bottom platform.

„ Main Switch Board Alongside Dynamo.

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

Particulars of these Circuits:—

Circuit.	Number of Lights.	Candle Power.	Current Required. Amps.	Size of Conductor.	Current Density.	Conductivity of Conductor.	Insulation Resistance per Mile.
(1) Saloon & Fort.	46	736	14	7/20	1000/□	100%	600 Meg
(2) Navigation	23	368	10·6	3/20	"	"	"
(3) ER & aft.	15.	240	9.	7/20	"	"	"

Total No. of Lights 84 No. of ~~Motors driving~~ Fans, &c. 7 No. of Heaters None.

Current required for Motors and ~~Heaters~~ 3·5.

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. 18 S.W.G., Largest, No. 19/16 S.W.G.

How are Conductors in Engine and Boiler Spaces protected ? — Lead sheathed armoured braid

,, Saloons, State Rooms, &c., ,, ? — Lead sheathed

What special protection is provided in the following cases ?—

(1) Conductors exposed to Heat or Damp — Lead sheathed slat armoured.

(2) ,, passing through Bunkers or Cargo Spaces — do

(3) ,, ,, Deck Beams or Bulkheads — Holes bushed with lead.

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables is unimpaired ? — none made.

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 ? — 2·5 ohm — Ohms.

Is the Installation supplied with a Voltmeter ? — Yes.

,, ,, ,, an Ampere Meter ? — Yes.

Date of Trial of complete Installation 11-9-20 Duration of Trial 12 Hours.

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. "Enugu"

as ascertained by us/me from personal examination

Bryan Hodgson

J. R. Stephenson

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

Fees—

		£	s.	d.
Main Boilers.				
H.S. 2886 Sq. ft.			:	:
G.S. 97 "			:	:
Donkey Boilers.				
H.S. Sq. ft.			:	:
G.S. "			:	:
	£		:	:
Engines.				
L.P.C. 37.5 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.