

No. 1815

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 2129 No. in Register Book 3484.

S.S. *Lavaldoe*

Makers of Engines *Swan Hunter & W.R. Ltd.*

Works No. *1260.*

Makers of Main Boilers *Swan Hunter & W.R. Ltd.*

Works No. *1260*

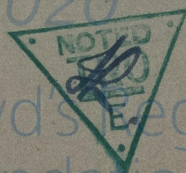
Makers of Donkey Boiler *None*

Works No. *2*

MACHINERY.



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004374-004381-0171

No.

THE BRITISH CORPORATION FOR THE SURVEY

AND

REGISTRY OF SHIPPING.

Report No. No. in Register Book

Received at Head Office

22nd August 1928

Surveyor's Report on the Petrol Engines, Boilers, and Auxiliary Machinery of the ^{Steamer} ~~Single Triple~~ ~~Twin Quadruple~~ Screw "LAVALDOE"

Official No. 149456 Port of Registry

Registered Owners

Engines Built by

at

Main Boilers Built by

at

Donkey " "

at

Date of Completion

First Visit

Last Visit

Total Visits

22-3-18

24.9.24

22-3-28

48

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RECIPROCATING ENGINES.

Works No. 1260

No. of Sets 12

Description

No. of Cylinders each Engine

3

No. of Cranks

3

Diams. of Cylinders

15.25" x 40"

Stroke 33"

Cubic feet in each L.P. Cylinder

24

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

" " " each Receiver?

Type of H.P. Valves,

" 1st I.P. "

" 2nd I.P. "

" L.P. "

" Valve Gear

" Condenser

Cooling Surface

sq. ft.

Diameter of Piston Rods (plain part)

Screwed part (bottom of thread)

Material

Diam. of Connecting Rods (smallest part)

Material

" Crosshead Gudgeons

Length of Bearing

Material

No. of Crosshead Bolts (each)

Diam. over Thrd.

Thds. per inch

Material

" Crank Pin "

" Main Bearings

Lengths

" Bolts in each

Diam. over Thread

Threads per inch

Material

" Holding Down Bolts, each Engine

Diam.

No. of Metal Chocks

Are the Engines bolted to the Tank Top or to a 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

Lyle Lorge Coy.

Piston

Do

Crossheads,

Do

Connecting Rods, Finished by

Swan Hunter

Piston

Crossheads,

Date of Harbour Trial

7-3-28

" Trial Trip

22nd Mar 1928.

Trials run at

off R. Tyne.

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

Yes. (Bad weather)

If so, what was the L.H.P.?

✓

Revs. per min. 106

Pressure in 1st I.P. Receiver, 52 lbs., 2nd I.P.,

lbs., L.P., 4 3/4 lbs., Vacuum, 25 1/2 ins.

Speed on Trial

none taken

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

data:—

Builders' estimated L.H.P. ✓

Revs. per min. ✓

Estimated Speed ✓



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TURBINE ENGINES.

Works No. Type of Turbines
 No. of H.P. Turbines No. of L.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?

Diam. of 1st Reduction Pinion

" 1st " Wheel

Estimated Pressure per lineal inch

Diam. of 2nd Reduction Pinion

" 2nd " Wheel

Estimated Pressure per lineal inch

Revol. 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

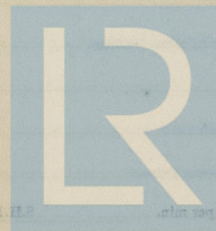
" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.

Main Boiler aux & stop valve 360 h.p. 19.10.27
 " main stop " 24.10.27
 1 stop valve " 29.10.27
 1



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No. of Blades each Propeller *4* Fitted or Solid? *Fitted.*
 Material of Blades *C. I.* Boss *C. I.*
 Diam. of Propellers *12' 3"* Pitch *10' 9"* Surface (each *48* S. ft.

Coefficient of Displacement of Vessel at $\frac{1}{2}$ Moulded Depth

Crank Shafts Forged by *Life Forge Coy* Material *St.*
 „ Pins „ „
 „ Webs „ „
 Thrust Shafts „ *Canarkshire L. Co.* „ *St.*
 Intermed. „ „ *Life Forge Coy.* „ *St.*
 Propeller „ „ *none* „ „
 Crank „ Finished by *Life Forge Coy* „ „
 Thrust „ „ *Swan Hunter.*
 Intermed. „ „ „ „
 Propeller „ „ „ „

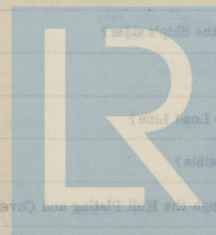
STAMP MARKS ON SHAFTS.

See p. 9.

SKETCH OF PROPELLER SHAFT.

*Same as 1258. Cartierdoc
and Kingdoc 1236.*

No. of Circulating Pumps
 Type of
 Location from Sea
 Are each Pump a Single Section with Non-return Valve?
 What other Pumps can circulate through Condenser?
 No. of Feed Pumps on Main Engines
 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
 What other Pumps can feed the Boilers?
 No. of Bypass Pumps on Main Engines
 Can one Pump be overhauled while the others are at work?
 No. of Independent Bypass Pumps
 What other Pumps can draw from the Bypass?
 Are all Bypass Sections fitted with Valves?
 Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bypass?
 Are all Sea Connections made with Valves or Joints next the Ship's side?
 Are they placed so as to be easily accessible?
 Are the Discharge Pipes placed above or below the Dead Load Line?
 Are the Discharge Pipes to the Lifeboats easily accessible?
 Are the Discharge Pipes to the Lifeboats easily accessible?
 Are the Discharge Pipes to the Lifeboats easily accessible?



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5/8 Knuzdoc

Worked by Main or Independent Engines? *Yes*

Type of _____

Diar. of	"	Suction from Sea
1891	1892	1893
1894	1895	1896
1897	1898	1899
1900	1901	1902
1903	1904	1905
1906	1907	1908
1909	1910	1911
1912	1913	1914
1915	1916	1917
1918	1919	1920
1921	1922	1923
1924	1925	1926
1927	1928	1929
1930	1931	1932
1933	1934	1935
1936	1937	1938
1939	1940	1941
1942	1943	1944
1945	1946	1947
1948	1949	1950
1951	1952	1953
1954	1955	1956
1957	1958	1959
1960	1961	1962
1963	1964	1965
1966	1967	1968
1969	1970	1971
1972	1973	1974
1975	1976	1977
1978	1979	1980
1981	1982	1983
1984	1985	1986
1987	1988	1989
1990	1991	1992
1993	1994	1995
1996	1997	1998
1999	2000	2001
2002	2003	2004
2005	2006	2007
2008	2009	2010
2011	2012	2013
2014	2015	2016
2017	2018	2019
2020	2021	2022
2023	2024	2025
2026	2027	2028
2029	2030	2031
2032	2033	2034
2035	2036	2037
2038	2039	2040
2041	2042	2043
2044	2045	2046
2047	2048	2049
2050	2051	2052
2053	2054	2055
2056	2057	2058
2059	2060	2061
2062	2063	2064
2065	2066	2067
2068	2069	2070
2071	2072	2073
2074	2075	2076
2077	2078	2079
2080	2081	2082
2083	2084	2085
2086	2087	2088
2089	2090	2091
2092	2093	2094
2095	2096	2097
2098	2099	2100
2101	2102	2103
2104	2105	2106
2107	2108	2109
2110	2111	2112
2113	2114	2115
2116	2117	2118
2119	2120	2121
2122	2123	2124
2125	2126	2127
2128	2129	2130
2131	2132	2133
2134	2135	2136
2137	2138	2139
2140	2141	2142
2143	2144	2145
2146	2147	2148
2149	2150	2151
2152	2153	2154
2155	2156	2157
2158	2159	2160
2161	2162	2163
2164	2165	2166
2167	2168	2169
2170	2171	2172
2173	2174	2175
2176	2177	2178
2179	2180	2181
2182	2183	2184
2185	2186	2187
2188	2189	2190
2191	2192	2193
2194	2195	2196
2197	2198	2199
2200	2201	2202
2203	2204	2205
2206	2207	2208
2209	2210	2211
2212	2213	2214
2215	2216	2217
2218	2	

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

What other Pumps can circulate through Condenser ?

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	Diar.	Stroke
-------------------------------	-------	--------

What other Pumps can feed the Boilers?

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?

Same as 1236 & 1958.

3/5 Kingdoc
BOILERS.

Works No. 1260.
 No. of Boilers 2w. Type Cylindrical Multitubular
 Single or Double-ended Single.
 No. of Furnaces in each 2w.
 Type of Furnaces Daylight
 Date when Plan approved 1-11-26.
 Approved Working Pressure 180 lbs.
 Hydraulic Test Pressure 320 lbs J.L. 3118. B.C. 22.12.27.
 Date of Hydraulic Test 22.12.27.
 " when Safety Valves set 4.3.28.
 Pressure at which Valves were set 185 lbs.
 Date of Accumulation Test none taken.
 Maximum Pressure under Accumulation Test ✓
 System of Draught Howdens Forced.
 Can Boilers be worked separately
 Makers of Plates Steel Coy of Scotland.
 " Stay Bars - do -
 " Rivets Rivet-Bolt & Nut Coy.
 " Furnaces Daylight.
 Greatest Internal Diam. of Boilers 10' 1 3/8"
 " " Length " 10' 9 5/16"
 Square Feet of Heating Surface each Boiler 1068 sq ft
 " " Grate " 32 sq ft
 No. of Safety Valves each Boiler 2 Rule Diam. Actual 2" (High lift)
 Are the Safety Valves fitted with Easing Gear? Yp
 No. of Pressure Gauges, each Boiler One
 " Test Cocks 3 No. of Water Gauges One
 " Salinometer Cocks One.



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Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " Approved

Threads per Inch

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " " "

Width " " Doubling Strips "

Thickness of Middle Back End Plates Approved

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " " "

Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Threads per Inch

Thickness of End Plates Approved

" " " " in Boilers

Material

Thickness of Back End Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " " "

Stay Tubes at " " " "

Are Stay Tubes fitted with Nuts at Front End?

Thickness of Back End Plates Approved

" " " " in Boilers

Pitch of Stay Tubes in Back End Plates

" " " " "

Thickness of Stay Tubes

" " " " Plain

External Diam. of Tubes

" " " " "

Thickness of Furnace Plates Approved

" " " " in Boilers

Smallest outside Diam. of Furnaces

Length between Tube Plates

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Diar. of Screwed Stays Approved

Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Diar. " " Approved

Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Backs

Diar. " " Approved

Threads per Inch

" " " in Boilers

Material " "

External Diam. of Tubes

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

Thickness of Combustion Chamber Bottoms

Thickness of Furnace Water Approvals

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

Thickness of

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS

No. of Boilers
Type
Greatest Int. Diam.
Height
Height of Boiler Crown above Fire Grate
Are Boiler Crown Flat or Dished?
Internal Radius of Dished Ends
Description of Seams in Boiler Crown
Dish of River Boilers
Height of Firebox Crown above Fire Grate
Are Firebox Crown Flat or Dished?
Internal Radius of Dished Crown
No. of Crown Stays
Internal Diam. of Firebox at Top
Bottom
Thickness of Plates
No. of Water Tubes
Height Diam.
Material of Water Tubes
Size of Manhole in Shell
Dimensions of Compensating Ring
Heating Surface, each Boiler
(State Surface)

SUPERHEATERS



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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 Pipes

Material

Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure

No. of Pipes

Material

Welded or Seamless

Internal Diar.

Thickness

How are Flanges secured?

Date of Hydraulic Test

Test Pressure



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MAIN STEAM PIPES.

No. of Lengths *3*
 Material *HD Steel*
 Brazed, Welded or Seamless *Seamless*
 Internal Diam. *3 1/2"*
 Thickness *1/4"*
 How are Flanges secured? *Screwed*
 Date of Hydraulic Test *14.2.78*
 Test Pressure *540 lbs.*

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

BOILER EVAPORATORS.

No. *150*
 Type *Horizontal*
 Date of Test *14.2.78*
 Test Pressure *180 lbs.*
 Working Pressure *150 lbs.*
 Date of Test of Safety Valves under Steam

FEED WATER HEATERS.

No. *1*
 Type *Horizontal*
 Date of Test *14.2.78*
 Test Pressure *180 lbs.*
 Working Pressure *150 lbs.*
 Date of Test of Safety Valves under Steam

FEED WATER FILTERS.

No. *1*
 Type *Horizontal*
 Date of Test *14.2.78*
 Test Pressure *180 lbs.*
 Working Pressure *150 lbs.*
 Date of Test of Safety Valves under Steam



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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:—

Same as 1258.

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REFRIGERATORS.

No. of Machines Capacity of each No. of Cylinder Power Units

Makers Make Make

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

Condenser Compressor Evaporator

Refrigerant Lubricant Oil

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.
No. and Name of Compartment				
Capacity				
Current Absorbing or Consuming				
Weight of Discharge Water System				
Position of Signatures				
Main Section Board				
No. of Cylinders in which Refrigerant is				
Particulars of Case Charts				
Chart				

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



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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

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? 870000

Ohms

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter?

Date of Trial of complete Installation 4. 3. 28

Duration of Trial

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

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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. *Yes*

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?

Is the Installation supplied with a Voltmeter?

as a proper Motor?

Date of Trial of complete Installation *1.10.28*

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

Are Cables fitted as follows:-

On Main Switch Board, to Cable of Main Circuit

On Aux. ... each Auxiliary Circuit

Wherever a Cable is required in the

to each Lamp Circuit

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*

Are the Plans as far as is possible and really necessary

Readily made? *Yes*

The above correctly describes the Machinery of the S.S.

as ascertained by ^{us} _{me} from personal examination

What special particulars is provided in the following cases:-

(1) Conditions agreed to by the Company

(2) ...

(3) ...

Lavaldoc

John Lundgren

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.C.	Cub. ft.	:	:
	£	:	:
Testing, &c. ...		:	:
	£	:	:
Expenses ...		:	:
Total ...	£	:	:

It is submitted that this Report be approved.

John King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the 22nd AUGUST, 1928

Fees advised

Fees paid



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John Lundgren
Secretary.

GENERAL CONSTRUCTION

Foot—

At the time of the Main Construction the work was in progress. The work was in progress at the time of the Main Construction.

At the time of the Main Construction the work was in progress. The work was in progress at the time of the Main Construction.

At the time of the Main Construction the work was in progress. The work was in progress at the time of the Main Construction.

DONKEY HOUSE

H.S.

Ed. H.

O.S.

Ed. H.

ENGINEER

L.P.O.

Ed. H.

Testing, etc.

Expenses

Total

It is submitted that this Report be approved.

Approved by the Committee for the Office of M.B.S. on the 10th of 1928.

Lavallo

To be added

To be paid

Lavallo

It is submitted that this Report be approved.



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