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Form 60

18th " LIGHTHOUSE DISTRICT

DEPARTMENT OF COMMERCE
LIGHTHOUSE SERVICE

DESCRIPTION

OF

ALCATRAZ

LIGHT STATION

State: California

May, 1915

1914

DESCRIPTION OF LIGHT STATION.

1. By whom described D. W. Day, date May 22, 1915

STATION.

2. Name of station, Alcatraz Light Station
3. Characteristic of light, Flashing white every 5 sec.
4. Geographical position of light: Latitude, 37° 49' 28."; longitude, 122° 25' 21".
5. Location, On southeast part of Alcatraz Island in San Francisco Bay.

PREMISES.

6. Origin of title to site of station (public land, purchase, lease, military or naval reservation), Military Reservation.
7. Date of reservation, deed, lease, or permission to occupy, N. fog bell, Oct. 13, ~~1899~~ 1900. S. " " , Oct. 23, ~~1900~~ 1899.
8. Area of the entire site, 2725 □; (b) area inclosed, 2725 □; (c) type of fence, -
9. Distance of tower from nearest high-water mark, About 200 ft.
10. Wharf or landing on premises, Military wharf used for L. H. purposes.
11. Means by which the light station may be reached and distance to nearest post office or town, with name, Gov't steamers and water craft — About 3 miles to San Francisco.
12. Tower or other means used for supporting the lantern and apparatus, Reinforced concrete tower.
13. Number of separate lights, One
14. When first built or established, 1854.

PREMISES—Continued.

15. When last thoroughly rebuilt, repaired, or renovated, 1909 New buildings throughout.
16. Height of focal plane of lantern above mean high water (on sea and gulf coasts) or mean lake level on northern lakes and rivers, 214 ft.
17. Background of the lighthouse, upon which it is projected, as seen from seaward, None, except by new military prison on North side.
18. Color of tower, and how produced, White, paint.
19. Tower—Connected with keeper's dwelling, and how; or detached, Connected, abutting two sides of base of tower.
20. Purpose of aid—Seacoast, lake coast, bay, harbor, channel, or range; for general or local navigation, Harbor and range light.
21. Materials of which the tower is built, Reinforced concrete.
22. Kind of stairway and steps, Iron.
23. Size of glass for glazing tower windows, Varied - see plan.
24. Number of windows in tower, and size of sash, 11 - varied.
25. Number and size of doors, 2 - 2'-0" x 8'-0"
26. General remarks upon tower and site, Tower built on solid rock.

LANTERN AND LANTERN FIXTURES.

27. Order or class of lantern, Fourth
28. If polygonal, state number of sides; if cylindrical, state diameter, 7'-7 42/64" diam.
29. Vertical or helical bars, Helical; thickness of bars, 7/8"; height glazed, 2'-11½"
30. Number of plates in height, Two & one, alternately; in each side, —
31. Thickness and size of plates, 1/4" - varied - see standard 4th order Lantern
32. Unglazed side of lantern in plates and degrees of arc, None; between what bearings (true and from seaward), —
33. Materials of which the lantern is constructed, Iron and brass.
34. Roof, Iron.

LANTERN AND LANTERN FIXTURES—Continued.

35. Ventilator ball, Iron
36. Lightning-conductor spindle, Iron, platinum point
37. Balustrade and outside gallery, Iron
38. Lantern doors, and how fitted, One, iron, hinged to swing outward.
39. Floor of lantern—Of what materials, Iron.
40. Watch-room door leading into lantern, and how fitted, Open hatch.

VENTILATORS.

41. In parapet, wall, or lower part of lantern, In parapet
42. Lantern ladders for cleaning plate glass, outside, None
43. Curtain hooks inside of lantern—How fitted, Spring rollers.

WATCH ROOM.

44. How fitted,
45. Bell wires, speaking tubes, or telephones for calling relief keepers—Kind, Electric bells.
46. Where led, To sleeping quarters from hallway.

ILLUMINATING APPARATUS, ETC.

47. Kind of apparatus, Flashing.; intensity in English candles, 84,000.
48. Name of maker, No name.; year made, No date.
49. Marks and number on apparatus, None.
50. Order of apparatus, 4th order.; inside diameter (inscribed circle, tangent to glass) of central drum, 20 inches.
51. **If the apparatus is a parabolic mirror,** state (*a*) diameter of opening, ; (*b*) depth of mirror, ; (*c*) its focal length, ; (*d*) material of which it is made,
52. **If revolving,** time of revolution, 30 seconds.
    (*a*) duration of flash, 0.5 sec.; (*b*) duration of eclipse, 4.5 sec.
53. **If fixed,** or fixed varied by flashes, state arc of each fixed part in degrees, ;
    (*a*) duration of fixed light, sec.; (*b*) eclipse, sec.; (*c*) flash, sec.

ILLUMINATING APPARATUS, ETC.—Continued.

54. Number of panels in the lens apparatus, Six

55. Number of flash panels, Six; arc of each, in degrees, 60°

56. Number of elements in each panel of central drum of lens, 1 ([illegible])

57. Number of prisms in each panel *above* central drum of lens, 7; are they fixed or flash? flash

58. Number of prisms in each panel *below* central drum of lens, 4; are they fixed or flash? "

59. How are the flashes produced—By the whole apparatus revolving Yes; by revolving belt only ——; if by panels or vertical elements revolving outside of fixed lens, state the number of such panels, ——

60. **If by vertical elements,** state (*a*) the number in each panel, ; and

(*b*) the number of elements of fixed lens covered by the panel,

61. **If light is occulting,** state (*a*) the characteristic,

(*b*) Between what time limits may characteristic be varied without structural changes in mechanism?

(*c*) Are eclipses produced by sleeve, revolving screens, or valve (if gaslight)?

(*d*) Size of sleeve and amplitude of movement,

(*e*) Axis of rotation of screens, horizontal or vertical, ; (*f*) relation of axis to vertical axis of illuminating apparatus,

(*g*) Do the screens revolve as parts, or independently, of illuminating apparatus?

(*h*) If about vertical axis, how many in circumference, ; (*i*) time required for complete revolution, ; (*j*) form, ;

(*k*) how mounted (see Questions 62–65), ;

(*l*) if actuated by clockwork, state order and maker, ;

(*m*) date made,

If occultation is effected by valve, state (*n*) name of maker, ;

(*o*) pattern, ;

(*p*) does it operate reliably?

62. **If revolving,** does the apparatus revolve on chariot wheels, mercury float, or balls? Balls

63. **If a chariot,** describe it and state the number and size of each pattern of wheels in it,

ILLUMINATING APPARATUS, ETC.—Continued.

64. **If on mercury float,** give (*a*) inside diameter of trough, ...; (*b*) inside depth of trough, ...; (*c*) outside diameter of float, ...; (*d*) depth of float, ...; (*e*) weight of mercury required, in pounds, ...; (*f*) how often mercury is renewed? ....

65. **If on balls,** (*a*) describe the construction of the ball-raceways, whether they are flat surface or semicircular or V grooves, Flat surface; (*b*) is a cage used to separate balls? Yes. (*c*) state number of balls, 21; (*d*) diameter of balls, 3/8

66. Clock cord or chain, kind, Wire cord; size, 1/8"; length, 75 ft.; how led, directly from drum to weight shaft; diam. and length of clock drum, 4" x 4"

67. Length and inside dimensions of drop tube or weight box, 20 ft. 8" diam.; clock weight, 80 pounds.

68. Length of time clock will run after one winding, 4 hours

69. Does clock drive apparatus while being rewound? No.

70. How is the machinery protected? Glass case.

71. How regulated? Adjusting fans increasing or decreasing weights.

72. Describe the pedestal, Four stanchions supporting clockwork & lens.

73. Lens protector—Is there one? Yes; kind, Linen.

74. Draft tube leading into ventilator ball—Of what material, diameter, and how fitted and connected with damper tube when in place, Non used.

75. **If colored light,** (*a*) how is the color produced? ....

(*b*) state where colored glass is attached, if to illuminating apparatus or to lantern, ...

76. If colored glass is inside of illuminating apparatus, describe its form, ...

77. Red sectors—Between what bearings, true (from seaward), ...

LAMPS, BURNERS, ETC.

Form 5 D.C. Luminous Arc Light

78. Description of lamp: (a) give order, ...; (b) kind of illuminant, Electricity.

(c) intensity in English candles, ~~8,500~~ 2,600 see L. Light List 1918.

If oil, or oil vapor:

(a) number of wicks, or mantels, to burner, ...;

(b) diameter of outside wick, ...; (c) diameter of mantel, ...;

(d) if more than one mantel, also diameter of circumscribing circle, ...

If gaslight:

(e) state kind, ...; (f) number of burners, if more than one burner in group, ...; (g) kind of burner, ...;

(h) candlepower per burner, ...; (i) total candlepower of group, ...;

(j) size of burner in cubic feet of gas per hour, ...;

(k) consumption of gas per hour, ... cubic feet; (l) how is gas obtained? ...

If gas is generated at station:

(m) describe generator, ...;

(n) state name of maker, ...;

(o) date of pattern, ...; (p) maximum capacity per hour, ... cubic feet.

If compressed gas is used:

(q) describe container and give number in service, ...; spare ...;

(r) capacity, ... cubic feet of free gas; (s) to what pressure charged, ... lbs.; (t) how is supply renewed? ...;

(u) if by substitution of full for empty container, at what intervals? ...

79. Number of spare lamps at station, None. 1 oil lamp for emergency.

80. Number of spare lamp burners at station, Extra electrodes kept on hand.

CLOSETS IN TOWER.

81. How fitted and used, None.

OIL HOUSE OR ROOM.

82. Describe (a) where placed and how fitted, In area between buildings (not used.)
(b) inside dimensions, 8'-6" x 9'-2"; (c) materials of which built, Concrete;
(d) capacity in 5-gallon cans, 112

CLOSETS AND STOREROOMS.

83. Where placed, how fitted and used, Lamp closet in hallway of building with shelves for supplies.

84. Damp or dry, suited or unsuited to the purpose for which they were designed, Dry, suited.

FOG SIGNAL.

85. Kind and character of apparatus, Sirens, electrically operated.

86. How much time is required to sound the signal? at once; how long may the signal sound its characteristic with the quantity of air stored under pressure? —

87. Characteristic:

If whistle, trumpet, or siren:

	Blast	Silent	Blast	Silent
North	5 sec.	15 sec.	5 sec.	15 sec.
South	4 "	4"	4"	18"

If bell:

strokes	Silent	strokes	Silent
	sec.		sec.

88. What parts of the fog-signal machinery are in duplicate? Extra sirens at "N" end of island.

89. Location, with reference to lighthouse, to a particular danger or channel, or to the special object for which established, On each end of island – used for navigation of the waters of San Francisco Bay.

90. Distance and direction, true, from lighthouse, 312° 35' and 132° 55'

91. Water supply for it, Not needed.

92. How is it reached from the lighthouse? By roadway.

FOG SIGNAL—Continued.

93. Description of fog-signal building or buildings, Small frame building 9'-0" x 7'-0"

94. **If a bell,** state (*a*) weight, ... lbs.; (*b*) metal, ...; (*c*) diameter, ...; (*d*) height, ...; (*e*) if struck by clockwork, state time it will run with one winding, ...; (*f*) maker and date, ...; (*g*) weights for operating, ... lbs.

95. **If a steam signal,** describe boiler: (*a*) type, ...; (*b*) length, ...; (*c*) diameter, ...; (*d*) horsepower, ...; (*e*) maker and date, ...

(*f*) Is there a heater? ....; what kind? ....; what size? ....; how much does its use reduce the time of starting the fog signal? ....

96. **If a steam engine is used:** (*a*) kind, ...; (*b*) number of revolutions per minute, ...; (*c*) diameter of cylinder, ...; (*d*) stroke of piston, ...; (*e*) horsepower, ...; (*f*) maker and date, ...

97. **If internal combustion engines are used:** (*a*) kind of engine, ...;
(*b*) maker, ...;
(*c*) date, ...; (*d*) nominal size, ...; (*e*) horsepower, ...;
(*f*) fuel used, ...; (*g*) how started, ...;
(*h*) kind of compressor, ...; (*i*) maker and date, ...

State if compressor is on same bed and geared with engine, or separate and belt-driven, or both pistons on same rod, ...; if geared or belt-driven, state ratio, ...
Describe compressor machinery, (*a*) diameter of cylinder, ...; (*b*) stroke of piston, ...; (*c*) number of revolutions per minute, ...; (*d*) character and size of air-inlet valves, ...; (*e*) kind of unloader, ...; (*f*) diameter of delivery pipe, ...

FOG SIGNAL—Continued.

98. (a) Number air receivers, ...; (b) diameter, ...; (c) height, ...; (d) capacity cubic feet, each, ...; (e) pressure in each, ...; (f) make of reducing valve, if used, ...; (g) remarks, ...

99. **If whistle, trumpet, or siren,** pressure at which blown, ...

100. Diameter of whistle, ...; height, ...; distance between orifice and edge of whistle, ...; single tone, ...; chime, ...

101. **If disk or cylindrical siren,** ....; diameter of revolving part, ...; when made, ...; by whom made, ...; number, width, and length of ports, ...; revolutions per minute, ...; type of governor, ...; condition of revolving part, ...

102. **If Daboll trumpet:** Class, ...; reed: length, ...; breadth, ...; thickness at base, ...; thickness at tip, ...

103. **If trumpet:** Length, ...; diameters, ...; material, ...

104. Timing device, Electric sign flasher.

105. Height of whistle or trumpet above mean high water, About 25 ft.

106. Direction, *true*, in which trumpet points, 312° 15' & 132° 15'

107. Pressure and recording gauge, ...

DWELLINGS FOR KEEPERS.

108. Location with reference to lighthouse tower, Abutting on two sides of tower.

109. Coloring, White, seal brown trimmings, red tile roof.

110. Materials of which built, Frame, covered with cement plaster

111. Number of dwellings, 3; number of rooms in each, 4 rooms and bath.

112. Describe heating plant, None.

113. Number of keepers and assistants in each dwelling, One in each.

114. Which keepers are furnished quarters? All.

115. Which keepers are not furnished quarters? None.

116. Outhouses, None; coloring, —

117. Paths or walks on the premises, Cemented area formed by buildings.

118. Area susceptible of profitable cultivation, —; area cultivated or prepared for cultivation, —

DWELLINGS FOR KEEPERS—Continued.

119. Character of adjacent surrounding country—Soil, sandy, clay, marsh, swamp, wood, fast ground, or shifting sands, Sand & rock

120. Furnish following data for stoves, kitchen sink, sink pump, and lamps in quarters:

Articles.	Keeper.	1st Assistant Keeper.	2d Assistant Keeper.	3d Assistant Keeper.
Stove, maker,	Wedgewood	Wedgewood	Wedgewood	
Stove, size,	68-20 A	68-20 A	68-20 A	
Sink, maker,	Crane Co.	Crane Co.	Crane Co.	
Sink, size,	20 x 36	20 x 36	20 x 36	
Pump, maker,	None	None	None	
Pump, size,				
LAMPS. (Give name, number, and make of all lamps in such set of quarters.)	1 Tubular table lamp. 1 hand lamp	1 Tubular table lamp. 1 hand lamp	1 Tabular table lamp. 1 hand lamp.	
	Electric current in quarters for lighting.			

WATER FOR FOG SIGNAL, DRINKING, ETC.

121. How procured, From tanks on military prison which are filled from supply obtained in San Francisco & pumped to tanks.

122. Quality, Good.

123. Quantity ample or not for the station at all seasons of the year, Ample

124. Liable or not to be injured by the inroads of storm tides and seas, Not liable.

125. If rain water in tanks or cisterns, what precautions have been taken to insure its purity?

126. Capacity of tanks or cisterns, and where placed,

127. Tanks or cisterns—Of what material made,

WATER FOR FOG SIGNAL, DRINKING, ETC.—Continued.

128. Is there a distilling apparatus at the station? ....

Name of maker and date, ...;

capacity, ...; when installed, ...; condition, ...;

efficiency, ...

129. If from a well, describe and give depth, ...

130. Diameter, ...; lined or not, ...

131. Water obtained by pump or bucket, Direct from pipes. ....; what power is used? ....

132. Distance from keeper's dwelling, ...

HEALTHFULNESS OF STATION.

133. General opinion in regard to the healthfulness of the light station and vicinity, Healthy

....

134. Diseases—What are most prevalent at the station and in the vicinity? None.

135. Do they prevail at particular seasons of the year, or not? ——

136. Are there any local causes, such as swamps, marshes, etc., in the immediate vicinity of the lighthouse which are likely to be the cause of these diseases? No.

....

137. Would draining or other artificial means employed on the lighthouse premises be likely to improve the sanitary condition of the light station? ——

BOATS.

138. Furnish following data for each boat at station:

Number.	Type.	Length.	Width.	When Built.	Date Received at Station.	Is Boat Fitted with Sails?	Suited to Work Performed.

BOATS—Continued.

139. **If power boat,** kind of engine, ; horsepower, ;

maker of engine, shop number, and date,

(*a*) type, size, number, and maker's name of spare coil,

(*b*) type, size, number, and maker's name of magneto,

(*c*) type and number of batteries,

(*d*) propeller wheel, diameter, ; pitch,

140. Where are boats kept at station?

LANDING, WHARF, BOATHOUSE, AND ROAD TO THE LIGHTHOUSE.

141. Description, Government landing on island where steamers land several times a day.

142. Distance and direction of landing from lighthouse, About 1/4 mile east.

143. Hoisting engine, what kind? ;

diameter of cylinder, ; number of revolutions per minute, ;

stroke, ; kind of boiler, ;

maker and date,

144. General Remarks: Timing device controlling sirens is in lower part of tower, and signals are started from that point. Dwelling supplied with electric light.

F. W. Rhodes.

Inspector, 8th Light-House District.