Form 60

LIGHT HOUSE BOARD
MAY 2 1910
NO. 10683

9 Chicago

~~Twelfth~~

~~Ninth~~ DISTRICT

Enclosure

Department of Commerce and Labor

LIGHT-HOUSE ESTABLISHMENT

DESCRIPTION OF

BUILDINGS, PREMISES, EQUIPMENT, ETC.,

AT

Holland Pierhead Range
(Front and Rear)
LIGHT-STATION,

Macatawa and Holland, Mich.,

April 28th, 1910.

11—2921

filed 2 May, 1910

REPRODUCED AT THE NATIONAL ARCHIVES

NAME AND POSITION OF STATION.

Holland (Black Lake) Pierhead, Front., on the outer end of the South Breakwater, en to Black Lake, Holland Harbor, Mich. Holland (Black Lake) Pierhead Rear; on the end of the South Pier, entrance to Black Lake, Holland Harbor, Mich., E'ly side of the S'ly part of Lake Michigan, and 880 ft (1/6 mile) 87° 15' (E 1/4 N) in rear of the preceding and with the preceding forms a range for approaching the entrance to the harbor.

1. By whom described, Francis J. Otte, Draftsman in Office of Engineer, 9th Light-House Distr
2. Date of description, April 28th, 1910
3. Distinguishing character of light or lights, Front, Fixed red. Lens Lantern (acetylene gas illuminan
   Rear. Fixed red, 4th Order, Distance visible, 13 mile
4. Latitude of light, 42° 46' (24)" North } Authority, Chart of Holland Harbor and Black Lak
5. Longitude of light, 86° 13' (00)" West } Catalogue #873. Issued Oct 26-1908.

PREMISES—A DETAILED DESCRIPTION OF, EMBRACING—

6. Site of station—Public land, purchase, Military or Naval reservation, lease: Purchase, Consideration, $200.00
   from Henry D. Post and Anna C. his wife.
7. Date of reservation, —
8. Date of deed, May 24-1873
9. Date of permission to occupy, Received for record, Aug-8th, 1873.
10. Date of lease, —
11. Area of the entire site, 61.358 acres and all accretions northward (May 24, 1873.)
12. Area inclosed, None
13. Character of surface soil, Sandy
14. Distance of tower from nearest high-water mark, Towers on pier
15. Inclosures to premises, None
16. Wharf or landing on premises, Harbor pier in channel
17. Road to landing or wharf, character of, and distance from tower, There is a road leading to reservation
18. Means by which the light-station may be reached, Electric cars run to within 1/4 mile of Keepers dwelling, 1/4 mile to Macatawa village, 6 miles to Holland by boat or public roa
    Railroad or Steamboat to Holland.

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PREMISES—A DETAILED DESCRIPTION OF—CONTINUED.

19. Distance to the nearest public road, railroad station, or steamboat landing, and to which: 1/4 mile to Public road, 6 miles to R.R. Station; Steamboat landing, 1/4 mile

20. Distance to nearest post office, 1/4 mile.

21. Distance to nearest village or town, 1/4 mile to Village of Macatawa, 6 miles to Holland.

22. Facilities for reaching the light-station by public conveyance, 1/4 mile to electric cars

23. Facilities for reaching light-station by private conveyance from nearest village, town, railroad station, or steamboat landing, and the distance: 1/4 miles to Keepers dwelling from electric cars, 6 miles to Holland, by private conveyance or by boat.

24. Tower or other means used for supporting the lantern and apparatus, South Breakwater, White oval steel tower. South Pierhead, White square pyramidal tower

25. Number of separate lights, Two, South Breakwater and South Pierhead.

26. When first built or established, So. B'k, 1908; So. P'h, 1870;

27. When last thoroughly rebuilt, repaired, or renovated, So. Ph, 1907;

28. Condition at this date, Good.

29. Shape of tower in plan, So. B'k, oval; So. P'h, square pyramidal

30. Form of tower—Cylindrical, conical, or pyramidal, So. B'k, oval cylinder; So. P'h, square pyramidal.

31. Height of tower from base to outer of ventilator ball of lantern, So. B'k, 27-6"; So. P'h, 44-8"; Height of tower from base to focal plane, So. B'k, 22-0"; So. P'h, 40-0";

32. Height of focal plane of lantern above mean high water (on sea and gulf coasts) or mean lake level on northern lakes and rivers: South Breakwater, 27'-0"; South Pierhead, 45'-0"

33. Background of the light-house, upon which it is projected, as seen from the sea or lake: So. Breakwater on outer end of the So. Breakwater pier; So. P'h on outer end of South pier. Sand hill, trees and summer resort build.

34. Color of tower, So. B'k, white; So. P'h, white;

35. Color of tower, how produced: By lead and oil paint

36. Tower—Connected with keeper's dwelling, and how, or detached: detached.

37. Object—Seacoast, lake coast, bay, harbor, channel, or range; for general or local navigating purposes:

Range to Harbor entrance.

38. Materials of which the tower is built: So. B'k, steel; South P'h, steel, cast iron and wood.

39. General description, embracing—

40. Thickness of walls at base, So. B'k, 1/2" Plate; So. P'h, open skeleton, structural steel.

41. Thickness of walls at parapet, " 3/16 " ; " 1/4" Plate " " framework.

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PREMISES—A DETAILED DESCRIPTION OF—CONTINUED.

General description, embracing—Continued.

42. Diameter of tower (inscribed, if polygonal) at base, So. B'k, oval, 2'-6"×4'-0"; So. P'h, 14'-7" square

43. Diameter of tower (inscribed, if polygonal) at parapet, So. B'k " " " 10'-7½ "

44. Kind of stairway and steps, So. B'k, iron ladder; So. P'h, two iron ladders, leading to lantern.

45. Number of landings of stairway, So. B'k, one; So. P'h, Three.

46. Size of glass for glazing tower windows, So. B'k, 10½" dia; So. P'h, 14½" dia;

47. Number of windows in tower, and size of sash, So. B'k, 3 bullseyes; So. P'h, 2 bullseyes, 15¾" diam;

48. Number of doors, So. B'k, 2 doors, metal; So. P'h, , metal door at level of elevated walk.

49. Kind of foundation and depth below the surface, Concrete, 12" below water line.

50. Character of soil at and surrounding the light-house, Keeper's dwelling site, sandy, Towers are on pier.

51. Soil susceptible of being protected by grass, shrubbery, or trees: Keeper's site, by trees and shrubbery.

52. Miscellaneous remarks upon tower and site: 217 lin. ft. of metal elevated walk, created during 1902, also 533 lin. ft. of old type wooden walk. Width between breakwaters at entrance, 300 ft. The South Breakwater extends into the Lake in a NNW'ly direction.

LANTERN AND LANTERN FIXTURES.

53. Order or class of lantern, So. B'k, Lantern of special construction; So. P'h, Rear Range, 4th Order;

54. Polygonal or cylindrical, Rear Range, polygonal

55. Diameter, inscribed (*a*) to glass, 7'-2" ; (*b*) in the clear, 6'-9¾"

56. Number of sides in plan, Nine, (9)

57. Vertical or helical bars, Vertical

58. Height glazed, 36"

59. Number of plates in height, One

60. Number of plates in each side, One

61. Thickness of plates, 3/8"

62. Size of different plates, 26¾" × 36"

63. Number of storm panes of glass, Lantern is not so fitted.

64. Unglazed side of lantern in plates and degrees of arc, None ; between what bearings (*true* and *from seaward*), —

65. Materials of which the lantern is constructed, Cast iron, old style

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LANTERN AND LANTERN FIXTURES—CONTINUED.

66. Roof, Cast iron

67. Ventilator ball, Cast iron

68. Lightning-conductor spindle, Regulation spindle

69. Lightning conductor, of what material; how attached to spindle; how led, and how far below the surface of dry earth, or otherwise, as the case may be: None.

70. Balustrade and outside gallery, Wrought iron rails and cast iron newels; Cast iron gallery which is an extension of the Lantern deck.

71. Lantern doors, and how fitted: So. B'k, door hinged to swing out; So. P'h, door in parapet, hinged to swing out. Trap door in floor, hinged and swings up.

72. Floor of lantern—Of what materials: So. B'k, steel; So. P'h, cast iron,

73. Watchroom door leading into lantern, and how fitted: So. B'k, none; So. P'h, trap door hinged, made of steel plate, swings up

74. Parapet, inside diameter (inscribed, if polygonal), Polygonal, 6'-9¾"

VENTILATORS.

75. In parapet, wall, or lower part of lantern: In parapet wall, 6 ventilators

76. Lantern ladders for cleaning plate glass, outside: None required.

77. Curtain hooks inside of lantern—How fitted: Curtain hooks, fastened to standards, drilled and tapped into place.

WATCHROOM.

78. How fitted: stove only.

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WATCHROOM—CONTINUED.

79. Bell wires, or speaking tubes, or telephones for calling relief keepers—Kind: None

80. Where led: —

ILLUMINATING APPARATUS, ETC.

81. Name of maker, So. Ph; Santes Haile C.E. Year made, 1894

82. Marks and number on apparatus, 1894 year. 355.

83. Order of apparatus, 4th Inside diameter (inscribed circle, tangent to *glass*) of central drum, 1'-7 11/16"

84. Characteristic of light shown *by apparatus*, So. Bk, Fixed red, Lens Lantern; So. Ph. Fixed red, 4th Order.

85. If movable; time of revolution, —

86. Intervals between flashes, —

87. Duration of flash, —

88. If fixed, or fixed varied by flashes, state arc of each fixed part in degrees: Fixed

89. Number of panels in the lens apparatus, So. Ph. (4) Four

90. Number of flash panels, — ; arc of each, in degrees, —

91. Number of elements in each panel of central drum of lens, Five (5)

92. Number of prisms in each panel *above* central drum of lens, Six (6) Rear panel, deflector

93. Number of prisms in each panel *below* central drum of lens, Four (4) " " "

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

Describe how: —

95. If by vertical elements, (*a*) state the number in each panel, — ; (*b*) and the number of elements of fixed lens covered by the panel: —

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ILLUMINATING APPARATUS, ETC.—CONTINUED.

96. 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 gas light), —

(*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, —

Screens: (*g*) Do they 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 101–109), — ; (*l*) if actuated by standard clockwork, state order, — ; (*m*) date made, —

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

(*o*) pattern, — ; (*p*) does it operate reliably, —

97. Pedestal, Cast iron, 3'-5½" high

98. Service table, 2'-5½" high, Size of table 18" x 2'-2".

99. Tube leading through center of upper metal ring of lens into ventilator ball, to carry off gases of combustion and to assist in producing proper draft in lantern—Of what material, diameter, and how fitted and connected with damper tube when in place: None needed

100. If revolving, revolving machinery: —

101. Revolving on chariot, mercury float, or balls: —

102. If a chariot, describe it and state the number and size of each pattern of wheels in it: —

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ILLUMINATING APPARATUS, ETC.—CONTINUED.

96. 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 gas light), —

(*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, —

Screens: (*g*) Do they 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 101–109), — ; (*l*) if actuated by standard clockwork, state order, — ; (*m*) date made, —

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

(*o*) pattern, — ; (*p*) does it operate reliably, —

97. Pedestal, Cast iron, 3'-5½" high

98. Service table, 2'-5½" high, Size of table 18" x 2'-2".

99. Tube leading through center of upper metal ring of lens into ventilator ball, to carry off gases of combustion and to assist in producing proper draft in lantern—Of what material, diameter, and how fitted and connected with damper tube when in place: None needed

100. If revolving, revolving machinery: —

101. Revolving on chariot, mercury float, or balls: —

102. If a chariot, describe it and state the number and size of each pattern of wheels in it: —

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ILLUMINATING APPARATUS, ETC.—CONTINUED.

103. If on balls, describe the construction of the ball-raceways, whether flat surface, or semicircular or V grooves: —

104. State number of balls: — ; diameter of balls, —

105. Revolving cord or chain—How led: —

106. Length of drop tube, —

107. Length of time revolving machinery will run after one winding: —

108. How is the machinery protected? —

109. How regulated? Describe: —

IF COLORED LIGHT—

110. How is the color produced? Describe: So. Breakwater, red screen; So. Pk, red chimney.

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

112. State where colored glass is attached, if to illuminating apparatus or to lantern: Chimneys and screens

113. If colored glass is inside of illuminating apparatus describe its form: —

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LAMPS, BURNERS, ETC.

114. (*a*) Description of lamp in use and number of wicks, or mantels, to burner, So. B'k, Lens Lantern So. P'h, New 4th Order, one wick; (*b*) diameter of outside wick, 1½" ; (*c*) diameter of mantel, — ; (*d*) if more than one mantel, also diameter of circumscribing circle, —

if gas light, (*e*) state kind, — ; (*f*) number of burners, if more than one in group, — ; (*g*) kind of burner, — ; (*h*) candlepower per burner, — ; (*i*) total candlepower of group, — ; (*j*) consumption of gas per burner per hour, — cubic feet; (*k*) total consumption per hour, — cubic feet; (*l*) how is gas obtained? — ; if 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, — ; (*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, —

115. Number of spare lamps at station, One

116. Number of spare lamp burners at station, Burners form part of lamp.

CLOSETS IN TOWER.

117. How fitted and used, None, cleaning table in service room

OILHOUSE OR ROOM.

118. Describe (*a*) where placed and how fitted, 800' W'ly from F.S. Bldg; 16'-6" in from inner side of pier. (*b*) inside dimensions, 7'-1" × 9'-1" ; (*c*) materials of which built, Red brick, cement floor, metal shingle roof, steel door and frame. ; (*d*) capacity in 5-gallon cans, 180

CLOSETS AND STOREROOMS.

119. Where placed, how fitted and used, Store room and closet in Keeper's dwelling, fitted with shelves.

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

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FOG SIGNAL.

121. Kind and character of apparatus: 10" steam whistle, operated by Marine steam boilers and controlled by upright steam engines

122. How much time is required to start the signal? 45 minutes ; how long may the signal sound its characteristic with the quantity of air stored under pressure? —

123. Where, or by whom, made: Geo. F. Motter & Sons, York. Pa.

Year made, 1899.

124. Characteristic distinction of: 10" steam whistle, blast 5 seconds; silent intervals, 25 seconds and repeat

thus

Blast	Silent interval	Blast	Silent interval
sec.	sec.	sec.	sec.
5.	25.	5.	25.

125. What parts of the fog-signal machinery are in duplicate? Boilers and Engines.

126. 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: —

127. If a steam signal, (*a*) describe boiler: Outer and inner steel shells, semi-circular head.

(*b*) Kind, Steam, Marine.

(*c*) Flue-tube or water-tube, Flue tube.

(*d*) Dimensions: height 7'-5" length, 6'-6" ~~diameter~~ width, 4'-9"

(*e*) Number and length of tubes, 102 tubes, 58" long.

(*f*) Diameter of tubes, 2½"

(*g*) Furnace: Kind, Part of boiler, Elliptical head length, 5'-0" ; width, 4'-3" ; height, 1'-6" average.

(*h*) Total heating surface in square feet, 393.9559 sq. ft.

(*i*) Grate surface in square feet, 21.25 sq'

(*j*) Number of grate bars, 17 double and 1 single

(*k*) Kind of grate bars, Double bar, spade end.

(*l*) Kind of coal or other fuel generally used, Bituminous coal

(*m*) Kind of safety valve, Lavingos Safety valves

(*n*) Maximum pressure the boiler is capable of, 127#

(*o*) Usual working pressure, 85#

(*p*) Diameter of smokestack, 2'-2"

(*q*) Height of smokestack from grate, 37 ft

(*r*) ~~Height or~~ length of steam drum, 5'-0" ; diameter, 30"

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FOG SIGNAL—CONTINUED.

(*s*) Kind of covering or jacket, Steel

(*t*) Present condition of boiler, Fair

(*u*) When built, 1899

(*v*) Where built, York. Pa

(*w*) By whom built, Geo. F. Motter and Sons

(*x*) Is there a heater? No ; what kind? — ; what size? —

How much does its use reduce the time of starting the fog signal? —

128. If a steam engine is used, kind: Upright Number of revolutions per minute, —

(*a*) Diameter of cylinder, 5"

(*b*) Stroke of piston, 9"

(*c*) Size of steam pipe, 3¼"

(*d*) When built, 1899

(*e*) Where built, Baltimore, Md

(*f*) By whom built, Ellicott Mach. Co.

129. Whistle, trumpet, or siren, pressure at which blown, Whistle, 85#

130. Diameter of whistle, 10" ; height, — ; distance between orifice and edge of whistle, 2¾" ; single tone, Single ; chime, —

131. 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, —

132. Daboll trumpet, — . Reed, — ; length, — ; breadth, — ; thickness at base, — ; thickness at tip, —

133. Trumpet: Length, — ; diameters, — ; material, —

134. Timing device, Cams on worm gears

135. Height of whistle or trumpet above mean high water, 39 ft

136. Direction, *true*, in which trumpet points, —

137. If signal is blown by compressed air, describe compressing machinery: —

Kind of engine, — ; by whom made, — ; when made, — ; nominal size, — ; horsepower, — ; kind of compressor, — ; name of maker, —

State if compressor is on same bed and geared with engine, or separate and belt-driven: —

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FOG SIGNAL—CONTINUED.

138. Location, with reference to light-house, to a particular danger or channel, or to the special object for which established: Guide to Harbor Entrance

139. Distance and direction, *true*, from light-house, on outer end of south pier, just in rear of light-tower

140. Water supply for it, Well in pier

141. How is it reached from the light-house? on pier.

142. Description of fog-signal building or buildings: Foundation, concrete; Exterior walls, structural steel framing, covered on outside with metal plate, and lined on inside with pressed brick

DWELLINGS FOR KEEPERS.

143. Location, with reference to light-house tower: Keeper's dwelling located on shore, near inner end of pier, near Life-saving station.

144. Coloring: White

145. Materials of which built, Stone foundation, frame, ordinary construction.

146. Number of rooms in each dwelling, One dwelling, 8 rooms

147. Number of keepers and assistants to each dwelling, Keeper only

148. Outhouses, Summer kitchen, Woodshed, Privy and oil house.

149. Coloring: White

150. Paths or walks on the premises, Wooden walks in fair condition

151. Area of premises inclosed, and how: None

152. Area of garden, None

153. Area in timber or shrubbery, None

154. Area susceptible of profitable cultivation, None.

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DWELLINGS FOR KEEPERS—CONTINUED.

155. Area cultivated or prepared for cultivation, None

156. Character of adjacent surrounding country—Soil, sandy, clay, marsh, swamp, wood, fast ground, or shifting sands: Sandy

WATER FOR FOG SIGNAL, DRINKING, AND DOMESTIC USES GENERALLY.

157. How procured, Fog-signal, well in pier; Dwelling, driven well in basement.

158. Quality, Fair

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

160. Liable or not to be injured by the inroads of storm tides and seas, No

161. If rain water in tanks or cisterns, what precautions have been taken to insure its purity? None

162. Capacity of tanks or cisterns, and where placed: —

163. Tanks or cisterns—Of what material made: —

164. Is there a distilling apparatus at the station? No

Name of maker: —

Capacity, — ; when installed, — ; condition, — ;

efficiency, —

165. If from a well, describe and give depth: F.S. well in pier under bldg; Dwelling, drive well in basement

166. Diameter, —

167. Lined or not, —

168. Water obtained by pump or bucket, F.S. Steam pump; Dwelling, hand pump.

169. Distance from keeper's dwelling, Pump in Kitchen of dwelling

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HEALTHFULNESS OF THE LIGHT-STATION AND VICINITY.

170. General opinion in regard to the healthfulness or unhealthfulness of the light-station and vicinity: Good

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

172. Do they prevail at particular seasons of the year, or not? No

173. Are there any local causes, such as swamps, marshes, etc., in the immediate vicinity of the light-house which are likely to be the cause of these diseases? None

174. Would draining or other artificial means employed on the light-house premises be likely to improve the sanitary condition of the light-station? No

LANDING, WHARF, BOATHOUSE, AND ROAD TO THE LIGHT-HOUSE.

175. Describe: No boat house, Public road within ½ mile of Keeper's dwelling. Government pier in front of Keeper's dwelling

176. Distance and direction from light-house: ——

177. Hoisting engine, what kind? None

Number of revolutions per minute, —— ; diameter of cylinder, —— ; stroke, ——

Kind of boiler: ——

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178 MISCELLANEOUS REMARKS UPON THE GENERAL CHARACTER AND CONDITION OF THE PREMISES, TOWERS, BUILDINGS, AND ILLUMINATING APPARATUS AT THIS DATE.

Life-Saving Station near inner of the South pier
Weather servicd Bureau Station: Flagstaff, Life saving Station, Macatawa Beach.

Respectfully,

Thos. J. Brownell

Major, Corps of Engineers, U. S. A.,
Engineer, Ninth Light-House District.