

# DELAWARE'S STATE BOUNDARIES



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## Introduction

One hundred seventy-nine monuments mark Delaware's boundaries with Maryland, Pennsylvania, and New Jersey. Eight formal boundary lines make up the four major lines bounding the State. They are the east-west boundary, or **Transpeninsular Line**; the north-south boundary, comprised of the **Tangent**, **Arc**, and **North** lines; the Delaware-Pennsylvania boundary, including the **Top of the Wedge Line** and the **12-mile Circle**; and the Delaware-New Jersey boundary, including the **1934 Mean Low Water Line** and the **Delaware Bay Line** (see Fig. 1). The Transpeninsular, Tangent, Arc, North, 12-mile Circle, and 1934 Mean Low Water lines are monumented. The Delaware Bay Line is defined by the navigational channel. The boundaries described here evolved through long, complex histories (see references). They are based largely on adjudication in England of conflicting claims by the Penns and the Calverts for the Pennsylvania and Maryland colonies.

## The East-West Boundary

The Transpeninsular Line starts at the Atlantic Ocean at Fenwick Island and runs approximately westward to the Chesapeake Bay, a distance of 69 miles and 298 perches (69.9313 miles). It was first surveyed in 1751 by colonial surveyors, who marked the half-way point with a stone called Middle Point. The line is now marked with 35 monuments. Original stones

are at mile intervals 0, 5, 10, 20, and Middle Point; brass disks set in concrete are at one-mile intervals between. The Middle Point monument was accepted by Mason and Dixon and became Delaware's southwest corner. It is the point from which the famous Mason-Dixon Line, Delaware's north-south boundary, begins.

## The North-South Boundary

The north-south boundary was first surveyed, in part, in 1761 by colonial surveyors and again in 1764 by Charles Mason and Jeremiah Dixon. It is made up of three segments - the Tangent Line, Arc Line, and North Line. The north-south boundary is defined by 93 monuments, 80 of which are Mason-Dixon stones. These measure 12" x 11" x 34" to 40" high and were carved from light buff oolitic limestone on the Isle of Portland, Dorsetshire, England. Each mile stone has a "P" and "M" carved on opposite sides, and each fifth mile stone has the Calvert and Penn coats of arms carved on opposite sides.

The Tangent Line (BC, Fig. 1) starts at Middle Point on the Transpeninsular Line and runs north  $3^{\circ}36'6''$  west to mile stone 82 (Tangent Stone). There are 76 original Mason-Dixon stones still standing on the Tangent Line. At the Tangent Stone, the Tangent Line meets the Arc Line.

The Arc Line (CD, Fig. 1) is a small portion of the 12-mile Circle that extends west of a line that would run due north of the Tangent Stone. The Arc Line is marked by five stones. Four are of a local rock and have no visible carvings, and one is actually mile stone 83 and is a Mason-Dixon stone.

The North Line (DE, Fig. 1) begins at the Intersection Stone. This is the point where the Arc Line intersects the due north line extending

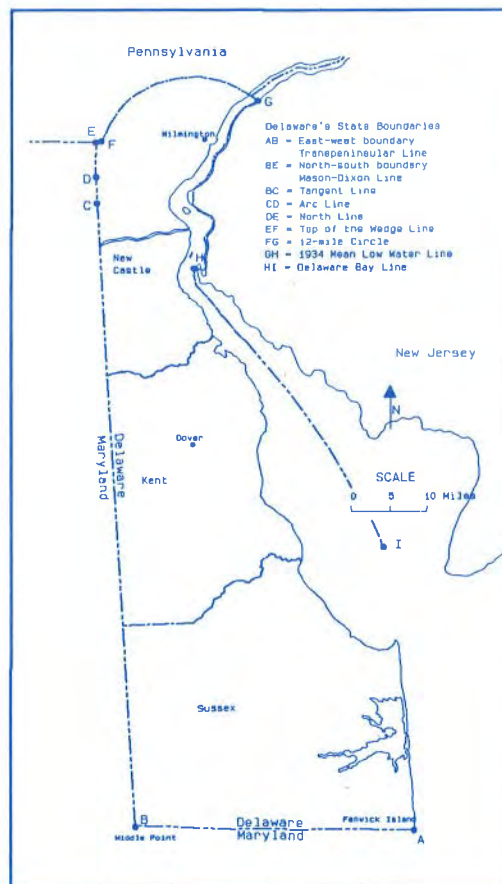


Figure 1.

from the Tangent Stone. The North Line contains five stones ending with the Maryland-Delaware-Pennsylvania (MDP) Corner Stone, or the tri-state corner marker. Of these, three are Mason-Dixon stones. A double crownstone matching the one at Middle Point was set at the MDP corner; however, it disappeared in the early 1800s and was replaced with a granite monument in 1849.

### The Delaware-Pennsylvania Boundary

The unique Delaware-Pennsylvania 12-mile Circle originated in 1681 when King Charles II of England granted William Penn land north of a 12-mile circle centered on New Castle. In 1701, Isaac Taylor of West Chester County and Thomas Pierson of New Castle County were appointed to survey and mark the boundary from the Delaware River westward for 120 degrees or two-thirds of a semicircle. Because of errors in this difficult survey, the arc is a compound curve with several different radii (see Fig. 2).

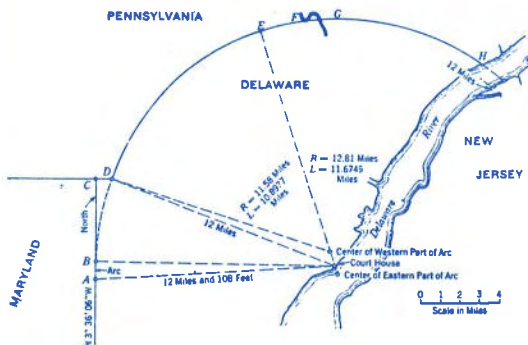


Figure 2.

(Perry, L., 1934, The circular boundary of Delaware, Civil Engineering: v. 4, no. 11, p. 576-580.)

Lt. Col. J. D. Graham, U. S. Corps of Topographical Engineers, during the 1849 resurvey of the northeast corner of Maryland, correctly located the 12-mile distance in the area of the junction of the three states, creating the area known as "The Wedge."

Graham's work was not ratified by Delaware as this would have given the Wedge to Pennsylvania. Pennsylvania did take steps to ratify the Graham line. The change was accepted on paper (maps) but was ignored in fact by Delaware which continued to exercise jurisdiction over the area.

In 1892, W. C. Hodgkins, Office of the U. S. Coast and Geodetic Survey, was contracted by a joint commission to survey and monument the Delaware-Pennsylvania boundary. Hodgkins extended the northern boundary of Maryland eastward across the top of the Wedge to the 12-mile Circle. This created the Top of the Wedge Line (EF, Fig. 1). Hodgkins then marked the 12-mile Circle every half-mile (FG, Fig. 1). Including the initial point and a terminal point, there are 46 monuments. The initial and terminal stones are made of dark gneiss of the Wilmington Complex and bear the names of the commissioners representing Pennsylvania and Delaware. The rest of the monuments are pyramidal frustums of gray gneiss, 10 inches square at the top and projecting from 2 to 30 inches above the ground. The half-mile stones bear a "1/2" on their west sides. The mile stones bear a "P" on the north face, a "D" on the south face, the mile number from the initial stone on the west face, and the date 1892 on the east face.

### The Delaware-New Jersey Boundary

In 1934 the U. S. Supreme Court confirmed the Delaware-New Jersey boundary in a disputed part of the Delaware estuary. The boundary is composed of two segments. The northern part falls within the extension of the 12-mile Circle. Within this area Delaware extends to the 1934 mean low water line of the Delaware River along the New Jersey shore (GH, Fig. 1). This section is marked with six boundary reference monuments. Each has a precise location from which a specific direction and distance can be measured to find the actual boundary.

From the northern tip of Artificial Island out to the shipping channel ("H" in Fig. 1), the boundary follows the extended circular boundary. From there the Delaware Bay Line is defined by five specific turning points and distances southward to the vicinity of the Brandywine Shoal Light (I, Fig. 1).

### Respect the Monuments

The monuments that Delaware shares with its neighbors have

great practical and historical value and are protected by law. Many may be conveniently visited and are themselves important attractions. For additional information contact the Delaware State Boundary Commission through the Delaware Geological Survey.

### Selected References

- American Philosophical Society, 1969, The journal of Charles Mason and Jeremiah Dixon: 231 p., (transcribed from the original in the U.S. National Archives with an introduction by A. Hughlett Mason).
- Bayliff, W. H., 1959, The Maryland-Pennsylvania and Maryland-Delaware boundaries: Maryland Board of Natural Resources Bulletin 4, Second Edition, 120 p.
- Hodgkins, W. C., 1893, Appendix No. 8-1983: U.S. Coast and Geodetic Survey Report for 1893-Part II, p. 177-215.
- Kelly, J. A., 1973, The Transpeninsular Line: The Archeologist, Sussex Society of Archeology and History, v. 25, p. 12-18.
- Meade, B. K., 1964, Delaware-Maryland north-south boundary resurvey of 1961-62: Journal of the American Congress of Surveying and Mapping, v. 24, no. 1, p. 33-36.
- Meade, B. K., 1982, Report on surveys of Delaware/Maryland boundaries: U.S. Department of Commerce, National Geodetic Survey, p. 314.
- Munroe, J. A., 1978, Colonial Delaware-a history: KTO Press, Millwood N.Y., p. 312.
- Perry, L., 1934, The circular boundary of Delaware, Civil Engineering: v. 4, no. 11, p. 576-580.