

William Austin Burt

Over the years, the State of Michigan has produced some of the most influential people that have ever lived. Michigan has been involved with a variety of industries, businesses, and practices that have changed the way Americans view life today. The business and practice of surveying, as well as other politics and inventions, would not stand where they are today without William Austin Burt. The State of Michigan has had no bigger impact by an individual than by William Austin Burt.

William Burt was born in Taunton, Massachusetts, June 13, 1792 to Alvin Burt and Wealthy Austin.¹ From a young age, William became very fond of education and began to excel in the areas of geometry, navigation, and surveying.² Growing up, William lived in New York and played an active role in the New York militia, in support of the War of 1812.³ After serving in the militia for sixty days, William worked as a mechanic in Buffalo New York for different saw and flouring mills till the 1820's.⁴ In the 1820's, William decided to move his family to Michigan with the hope of being involved with public land surveys that were being performed and completed in Southern Michigan.⁵ William had surveying experience from New York but the number of applicants far outweighed the number of surveyors needed. So, William did not become employed by the public land survey system.

In 1829, William Burt received a patent on the world's first typewriter called a "typographer."⁶ Burt's typographer resembled a butcher's block and performed with about the same fragility.⁷ Burt's model created two of the most common features of today's typewriters.⁸

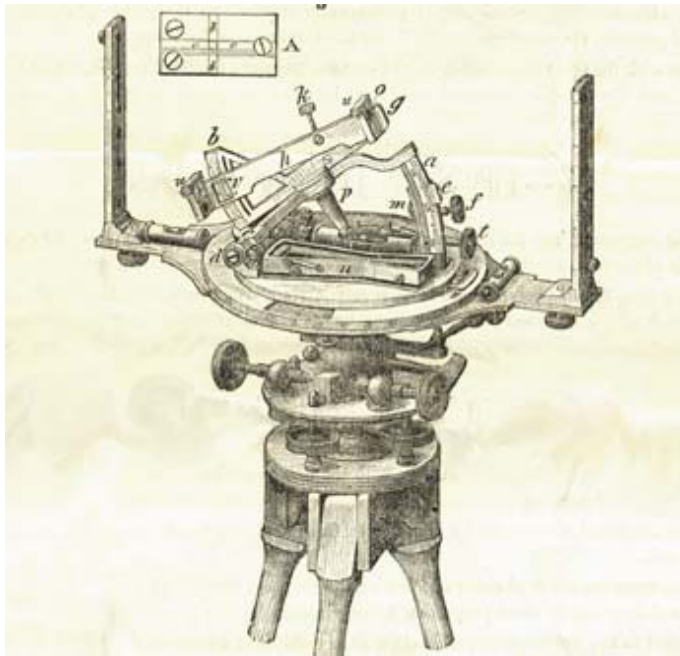
Burt was the first to use type bars, while the metal levers bear the letters and numerals.⁹ The only model of the typograph was destroyed by a fire that occurred in the patent office in 1836.¹⁰

Since William was not able to be a surveyor, William, being the skilled craftsman that he was, created a reputation of developing remarkable mills. From his astonishing reputation, in 1831 William became elected as the county surveyor and would serve for three terms.¹¹ From 1831 to 1833, William was appointed district surveyor, appointed postmaster of the newly established office, appointed associate judge of this judicial district, and would soon be appointed a U.S. Deputy surveyor.¹² These positions would eventually lead him to focus only on public land surveys.

Once William Burt became a surveyor for the public land system, he subdivided townships into 36 sections starting westward from present day Lexington.¹³ His following year, in the public land system, he surveyed a railroad from Detroit to Ypsilanti.¹⁴ William Burt would then lead a life as a surveyor and contribute one of the most technological advanced instruments in surveying at the time.

One of William Burt's most remarkable achievements and contributions to the surveying profession came with the creation of the solar compass. According to the Surveying Instructions of 1815, or Tiffin's Instructions, all surveys would be performed with a calibrated compass, chain, and axe.¹⁵ These tools were used to establish the townships and sections that are still in use today. In June 1840 William Burt extended the principal meridian across the Straits of Mackinac and on up to Lake Superior.¹⁶ Once the principle meridian was established, William was able to create townships and sections. It was known at this time that Douglas Houghton had established a report on the geology of the UP, especially Iron Ore and Copper deposits. Many surveyors did not want to take on the work of these areas because of the magnetic deposits that

made surveying extremely hard. The magnetic compass would be inadequate for performing surveys in these areas. So, William Burt invented the solar compass.



*Figure 1. Burt's Solar Compass as taken from
The Wisconsin Historical Society
([http://www.wisconsinhistory.org
/museum/artifacts/archives/002627.asp](http://www.wisconsinhistory.org/museum/artifacts/archives/002627.asp))*

The solar compass was made of brass and was independent from magnetic north.¹⁷ The solar compass allowed surveyors to locate true north through viewing astronomical observations rather than on magnetism.¹⁸ One of William's achievements came in 1844 when he discovered the Marquette iron range in the UP.¹⁹ Burt made this discovery when his magnetic needle seemed to be spinning "unusually violently." This discovery was not made with Burt's solar compass but with a magnetic compass.²⁰ After his discovery of the iron ore deposit, William Burt continued to survey the UP using his solar compass. The solar compass he invented had much better accuracy than the magnetic compass and would eventually become the standard tool used on all federal surveys.²¹ It was stated in the General Instructions of 1850, for surveyors of the United States, that Burt's solar compass must be used for township lines, section lines, and range lines where the magnetic variation is not uniform.²²

The solar compass allowed William to take on much more challenging surveys that no one else could perform. William and his sons would move forward to survey most of the UP. William was paid sixteen dollars a mile for these hard surveying terrains, which was the highest anyone was ever paid on a public land survey at this time.²³ William was appointed to survey the 4th and 5th correction lines for the Michigan-Wisconsin border and performed this survey using his highly accurate solar compass.²⁴

Williams' extremely accurate and precise surveys represented a quality that was unlike most of the surveys performed at this time, making his knowledge of surveying extremely valuable. In 1849, William Burt was appointed to examine the condition of the public land surveys to the north and west of the Saginaws.²⁵ Earlier in the year, William Burt was given a large contract for surveying land. He passed off the work to his sons who then passed the work on to some friends. The friends of the Burt sons performed fraudulent surveys, leaving all of the liability for accurate surveys on William. William discovered that many of the fraudulent surveys were performed under his name. In response to the inaccurate surveys, William obtained permission to make good and resurvey the fraudulent surveys completed in the district on which he was held liable.²⁶

In 1851, William traveled across the seas to London to display his solar compass at the world's fair.²⁷ William was awarded a medal by the jurors on astronomical instruments for his invention of the solar compass. Sailing back to America, William found that the solar compass could be used for navigation on ships.²⁸ The solar compass became world renowned and became used for many applications. William then served in the Legislature in 1853 and would later publish a manual for surveying in 1855 regarding the use of the solar compass.²⁹ William Burt died on August 18th, 1858 from heart disease.³⁰

William Burt is an inspiration to the surveying community and for surveying students learning about his methodology and theory. William Burt's impact on the surveying profession has resulted in articles, publications, and professional chapters designated to carry out his name. Ferris State University and Michigan Tech both hold a national professional surveying organization called "Burt and Mullett." This organization was formed to commemorate the impact William Burt and John Mullett had on surveying in Michigan. William Austin Burt's reputation and dedication have made him become one of the most influential people in Michigan History.

Notes

¹George H. Cannon, "The Life and Times of William A. Burt," Pure Michigan, 2006, 29 November 2007 <<http://www.pure-michigan.com/williamburt/1.php>> .

²Ibid, 1

³Ibid, 2

⁴Ibid, 2

⁵Ibid, 4

⁶ "The Typewriter: An Informal History," IBM Archives, 2007, 29 November 2007 <http://www-03.ibm.com/ibm/history/exhibits/modelb/modelb_informal.html>.

⁷Ibid

⁸Ibid

⁹Ibid

¹⁰Ibid

¹¹George, 4

¹²Ibid, 5

¹³Ibid, 5

¹⁴Ibid, 5

¹⁵Ralph Moore Berry, Special Instructions to Deputy Surveyors In Michigan 1808-1854 (Michigan: Michigan Museum of Surveying, 1990) 35-7.

¹⁶Alan S. Brown, "William A. Burt and the Upper Peninsula," Michigan Historical Center, 2006, 29 November 2007 <<http://www.michiganhistorymagazine.com/extra/surveying/burt.html>>.

Notes

¹⁷ “Burt’s Solar Compass,” Wisconsin Historical Museum, 8 March 2007, 29 November 2007 <<http://www.wisconsinhistory.org/museum/artifacts/archives/002627.asp>>.

¹⁸Ibid

¹⁹Ibid

²⁰Ibid

²¹Ibid

²²Ralph, 357

²³ Alan

²⁴ George, 12

²⁵ Ibid, 12-13

²⁶ Ibid, 13

²⁷ Ibid, 13

²⁸ Ibid, 13

²⁹ Ibid, 14

³⁰ Ibid, 15

References

Barnett, Leroy. "UP Surveyors." 2006. Michigan Historical Center. 29 November 2007

<<http://www.michiganhistorymag.com/extra/surveying/upsurveying.html>>.

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