

Braille Embosser - The Device That Allows the Blind to Read

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Our project is a Do It Yourself Braille Embosser [1, 2], which is a device that takes a message written in text and imprints it onto paper in braille [3]. A blind person can run their hand over the imprinted braille to read it [4]. This year's is a continuation of last year's; the software now works correctly.

THE BRAILLE ALPHABET	
a	b
c	d
e	f
g	h
i	j
k	l
m	n
o	p
q	r
s	t
u	v
w	x
y	z
NUMBERS	
1	2
3	4
5	6
7	8
9	0
Literary Code	
Hemlock Code	

We followed a MAKE magazine project that gives instructions for making the fully functional braille embosser pictured above [1]. A computer sends text to the braille embosser, which imprints that text in real time. Small-volume braille printers cost between \$1,800 and \$5,000 and large-volume ones may cost between \$10,000 and \$80,000 [5]. With the MAKE project, we spent only around \$125 by using 3D printed objects, parts given to us by a college professor, and the parts that we bought. The figure below shows a rough sketch of our design.



We chose to do a braille embosser for slightly different reasons. Sara chose to do a braille embosser because of the lack of affordability. Even small-volume braille embossers today range from \$1,800 to \$5,000, making it difficult for people who need them most to get them. Delaney chose to do this project because of the rates of blind people. Among adults in the United States, for every 85 people who can see, they have 2 counterparts who cannot. There are 7,297,100 adults in the United States who are blind, which is 2.3% of the population [6]. Delaney wishes to raise awareness to the growing numbers of the blind.



References (all web references are from June, 2019)

[1] OpenBraille. From the "AI or Die" issue of *Make: Magazine*, volume 63, pp. 66-67, June-July, 2018.

[2] Braille Embosser. https://en.wikipedia.org/wiki/Braille_embosser.

[3] Braille. en.wikipedia.org/wiki/Braille. Picture from www.pinterest.com.au/pin/321092648417898331.

[4] Person reading Braille imprinted on paper. <https://www.alibaba.com/showroom/braille-printing.html>.

[5] Braille Printers. <http://www.afb.org/prodBrowseCatResults.aspx?CatID=45>.

[6] Statistical Facts about blindness in the United States. The National Federation of the Blind, <https://nfb.org/blindness-statistics>.

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