

## **Small Panel Information Collection Justifications (National Industries for the Blind and Columbia Lighthouse for the Blind)**

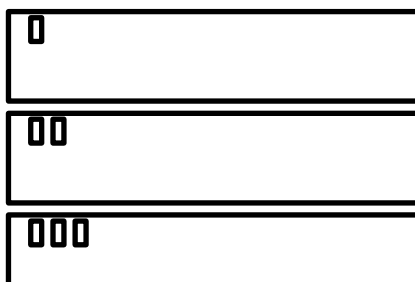
### **Background:**

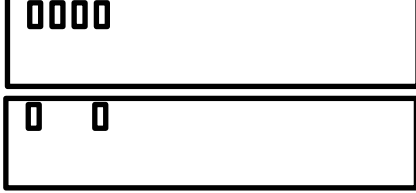
The Bureau of Engraving and Printing (BEP) will add tactile features to American banknotes so that visually impaired people can use their sense of touch to determine the denominations. The BEP must ensure that the tactile feature is easily perceptible to visually impaired people. This particular phase of the project will simply assess the perceptibility of four types of tactile features, called “intaglio,” “screen press,” “coating embossed high,” and “coating embossed low.” The BEP has created prototypes, called “coupons,” bearing those four types of tactile features. The paper used to make the coupons is similar to the paper used to make real banknotes. These coupons have been laboratory “aged” to simulate worn currency.

For each of the four types of tactile features, the BEP created coupons with the raised rectangular symbols in five different configurations, shown in Figure 1. The five configurations that will simulate different denominations are as follows:

- One symbol in the upper left corner,
- Two symbols in the upper left corner,
- Three symbols in the upper left corner,
- Four symbols in the upper left corner,
- Two symbols in the upper left corner spaced apart.

**Figure 1.** The configurations of the symbols on the coupons





## **Tactile Sample Sets:**

Sample sets A-C, D-F,G-I, and J represent four different application options for possible tactile features, using 3 different wearing processes. The samples represent three specific application methods with one method at two different heights. The sample sets have be subject to three different wearing processes, “worn”, “humidified” & “soaked” (with the exception of the last method which is only be tested for the worn process). The sample IDs (application method and wearing process) are listed in the table below. The objective of the study is to determine the relative tactility or ease of perception of these samples and variations. The printed symbols on all are the same, the numeric portion of the sample number representing the number of tactile symbols on that sample. So, the sample A2 is application method/wearing A, with 2 symbols, sample B3 is application method/wearing B, with 3 symbols, and so on. Samples designated as 2S have 2 symbols with space between them. The number of symbols and spacing are part of a testing denominating scheme, which is specifically not being tested. We are only getting feedback on the relative tactility of the application methods through various wearing processes, through accuracy tasks, as designed by the subject matter experts at Lighthouse and Westat.

Sampl e ID	Print Method	Treatme nt
A	Coat- Emboss	Worn (30 min)

	High	
B	Coat- Emboss High	Humidifi ed
C	Coat- Emboss High	Soaked
D	Coat- Emboss Low	Worn (30 min)
E	Coat- Emboss Low	Humidifi ed
F	Coat- Emboss Low	Soaked
G	Screen	Worn (30 min)
H	Screen	Humidifi ed
J	Screen	Soaked
K	Intaglio	Worn (30 min)

## Tactile Feature Application Method and Wearing Process

### **Method:**

A total of 40-50 blind people will be recruited at two locations National Industries for the Blind, Alexandria, VA, Columbia Lighthouse for the Blind, Washington, DC and serve as respondents in this project. The respondents will carry out a singular task using specially made coupons, made with paper similar in shape and feel to real banknotes, bearing the four types of tactile features. The respondents' untimed accuracy will be recorded. The overall time to complete each type of tactile

feature will be collected for reference purposes. The respondents will also be asked to rate the difficulty of determining the number of symbols on a scale of 1 (very easy) to 5 (very difficult).

The test protocol that will be used at these gatherings is based upon the protocol previously developed by Westat, Inc. under contract with the BEP. It has been revised to focus on just one task and is otherwise nearly identical to the protocol that was successfully used by BEP at the California State University at Northridge (CSUN) Technology and Disabilities Conference as well as with several focus groups. This protocol was developed to ensure the method of presenting the various samples to the blind participants and collecting the associated data and comments regarding the samples evaluated provides the most relevant and accurate feedback and data for use by the BEP in refining their tactile feature development effort for the future.

Type of Intake	Estimated Number of Respondents	Estimated Number of Intakes per Respondent	Average Burden Hours per Intake	Estimated Total Burden Hours Requested
In-Person Questions	50	1	20-30 minutes	17-25 hrs.