

Firm scans Liberty Bell to create model

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For six hours, an Owings Mills company had access to the real Liberty Bell so it could collect the data for a duplicate copy - without the crack - that will be produced for the commemoration of the 60th anniversary of United States' troops <http://www.normandy-dday.com> landing at Normandy.

Jeffrey Mechlinski <http://www.mddailyrecord.com/newspics/libbell3.jpg> Industrial Designer Jeffrey Mechlinski works on the Liberty Bell under the close eye of a National Park Service ranger.

Direct Dimensions Inc. was hired by Cornille Havard Bell Foundry <http://www.cornille-havard.com> of France to produce a computer model of the 1752 bell so the replica can be forged in time for June 6, the anniversary of the D-Day invasion in World War II.

The National Park Service in Philadelphia - with a park ranger standing guard - gave the company access to the bell Tuesday evening so it could complete the job, according to Direct Dimension President Michael Raphael.

"Now we will compile all of the data in a computer model for the foundry," Raphael said.

While scanning the Liberty Bell with handheld lasers may sound simple, the team had to do it without touching the bell because of its age. That also meant it couldn't mark the bell with tape or chalk, and so had to use the letters and crack as reference points.

"It's like cutting a pizza," said Jeffrey Mechlinski, an industrial designer for Direct Dimensions. "There were a few problems with fatigue" as the handheld laser got heavier and heavier.

By the way, Raphael said, "The duplicate will not have the crack."

Direct Dimensions uses the same techniques and technology to capture data for duplicating sculptures and paintings for such customers as the Baltimore Museum of Art.

The company recently scanned a painting of the French painter Henri Matisse for the museum, according to Raphael.

The team that worked on the Liberty Bell was forbidden to touch it or make any marks on it. The handheld laser, while weighing only a few pounds, got heavier as the night went on.

"Because it's digital, duplicates of the painting can be made larger or smaller than the original," he said.

Still, these projects account for a small percentage of Direct Dimensions' business.

The 9-year-old firm, which has eight employees and generates annual revenue of \$1 million, spends most of its time completing scanning projects for companies that include Northrop Grumman Corp., Black & Decker Corp. and Honda Motor Co.

Manufacturers hire Direct Dimensions to gather digital data from clay models, which can then be converted into computer data.

"This allows companies to perform virtual tests of their prototypes without having to go through the expense of building them first," Raphael said.