



Article: Tip: The Use of Inkjet Copiers to Transcribe Historical Inscriptions

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TIP: THE USE OF INKJET COPIERS TO TRANSCRIBE HISTORICAL INSCRIPTIONS

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Introduction

Preserving information contained in historical inscriptions is a constant need in archival practice, permeating the boundaries of academic, governmental, and scientific institutions. Often many hours and dollars are spent having staff manually copy historical inscriptions from their original enclosures onto new, archival storage materials. And commonly, necessary rehousing projects are indefinitely postponed due to labor cost or fear of transcription error, particularly in cases dealing with technical inscriptions, those that are partially illegible, or inscriptions in a foreign language. By utilizing an inkjet copier, transcription error is eliminated. The overall costs are also greatly reduced, making seemingly impossible projects suddenly much more feasible.

Pilot Project

In a trial project at Harvard University Library's Weissman Preservation Center, a 3-in-1 inkjet printer/copier was used, specifically the Epson Stylus CX6000, to efficiently copy 1,700 historical inscriptions from original negative envelopes onto archival storage enclosures (Figure 1). The 3-in-1 inkjet copier system is commonly used in household printing when connected to a personal computer, but by using the inkjet copier independently, without a computer component, a more user-friendly machine is adapted for streamlined institutional use.



Figure 1. Epson Stylus CX6000 3-in-1 Inkjet Printer/Copier. New archival sleeve seen at arrow.

The 1,700 negative enclosures that were rehousing in this pilot project are from the Philip Beam Negative collection at the Fine Arts Library of Harvard College Library. The collection contains images of various important works of art from around the world. The negatives were previously housed in acidic enclosures, all of which were yellowed and brittle. Each enclosure had important art historical information written on it, including the artist's name, title of work, date, and/or institution where it was displayed.

Most enclosure writing was legible, but others were more difficult to decipher. Usually in rehousing projects such as this, the inscriptions would be copied to the best of the person's ability, with the hope that little transcription error would occur. By implementing the 3-in-1 inkjet copier to physically copy the original enclosure, transcription error is eliminated while also allowing for the preservation of original handwriting and penmanship, which in some cases can give additional information.



Figure 2. Original enclosure on scanning bed, black and white copy on archival negative sleeve in hand

Methods and Materials

First, the original negative envelope was placed on the scanning bed of the 3-in-1 system, face down and in the correct orientation. The “Draft” setting was used to minimize ink use and the 4x5 setting was chosen as the new envelope size on the printer. The new archival enclosure was placed in the feeder. Lastly, the “Copy” button was pressed, and the original enclosure’s information was copied onto the new archival envelope, yielding the correct orientation and size. This can be done in either “Color” or “Black and White” depending on the settings chosen (Figure 2). Once the process was established, it only took a few seconds for each enclosure. Again, the printer/copier was used without a computer and no files were saved.

The 3-in-1 system retailed in 2008 for approximately \$100, and the pigment-based inks cost another \$125. Working with 1,700 enclosures during the pilot project, roughly 7 cents was spent per enclosure on ink, while simultaneously saving approximately 20 hours of labor.

Permanence of Pigment-Based Ink System

Henry Wilhelm has conducted extensive preliminary research on the permanence of various printers and printing inks. His results for the Epson Stylus CX6000 and the Epson DURABrite Ultra pigmented inks can be found on his website at, www.wilhelm-research.com. While other 3-in-1 systems could work equally well for such a project, the CX6000 was chosen because of its relatively low cost, usage of pigment-based inks, and print permanence ratings assigned by Wilhelm. Some of his findings of the printer and ink system that were promising for this application were the light stability, resistance to high humidity, and color balance ratings. Since the original enclosures can be printed in both color and black and white, it was deemed desirable for the color balance to be stable.

Drawbacks and Enhancements

While using this system does save time and resources, there are some drawbacks. Inkjet prints can be water soluble, therefore the water solubility of this ink system was tested before use in this application. We wanted to be sure that both the negatives and the integrity of the inscriptions were not at increased risk should the collection become wet in the future. In our tests, inks did not bleed through the enclosure, so it would likely not transfer to the negatives in a real water event. Also, while there was some minor bleeding, the inscriptions were still completely legible after submerging in water and then allowing to air dry.

When experimenting with the copying of very light pencil inscriptions, there was no way to manually adjust the density on the CX6000 3-in-1 system itself, as was possible with older models. Ultimately density manipulation was achieved through colored filters (available from stage lighting suppliers), which were used between the original and the glass directly on the scanning bed. This offered the manipulation sometimes necessary to achieve a successful copy. Yet, while the original inscription was darkened by the colored filters, so too was the background of each enclosure, causing a darker background tone to be copied overall.

The copier works best on 5x7 or 8x10 archival sleeves, however we have used it on 4x5 sleeves and sleeves that were subsequently cut even smaller. Printing directly on four-flap enclosures was occasionally successful in tests, but proved to be difficult and often wasteful in practice.

Since the time of the original purchase of our 3-in-1 printer (2008) it has become increasingly difficult to find similar printers available on the market. Newer designs tend to have the paper feed tray at the bottom of the printer. This type of feed requires the archival sleeve to travel around more rollers as it is printed, increasing the risk of paper jams and likely making it a poor design choice for this application.

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