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Letterpress Copying Books: Conservation and Preservation Implications

INTRODUCTION

Letterpress copying books are an early form of document copying process common from the turn of the nineteenth century and used through the 1950s. They are present in most archival collections in the Western world and contain a vast amount of information relating to the history of our culture. Many are quickly deteriorating to the point that records are being lost, and they often contain the only extant version of a document as the originals were routinely discarded or lost.

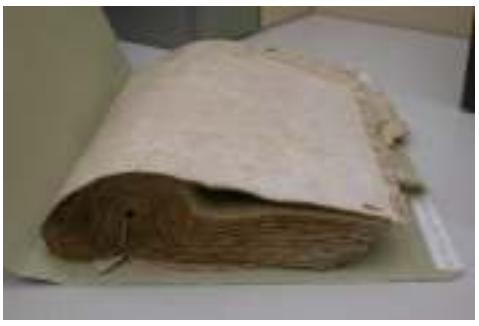
The historic copy press process involved the transfer of ink on a freshly written document to a moistened sheet of copying paper through the use of direct contact and pressure. Because the soluble copying ink was transferred directly, it left a mirror image print to be read from the verso of the thin paper. The process required inks and papers to have certain properties to be effective. It was necessary for the ink to remain wet for an extended period in order to achieve multiple high quality copies without causing unacceptable damage to the original. The paper had to be thin enough to read through the verso of the sheet, but also had to be strong enough to withstand the strains of being handled wet and pressed repeatedly. These parameters led to experimentation and the development of many different formulations of ink and papers (Cleveland 2000, Rhodes 1999). The addition of gums and sugars, for example, encouraged the ink to move from the original to the copying paper, while the lack of size and the translucence of the paper allowed the writing to be read from the verso of the leaf.

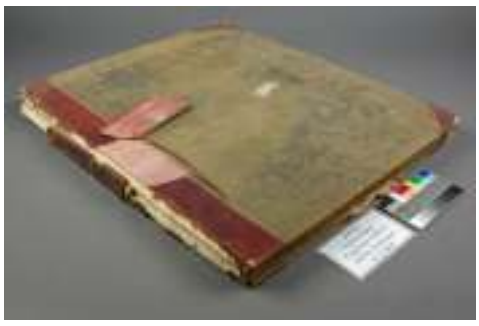
These unique materials display specific and unusual degradation characteristics, and their preservation needs are likewise unique. This study investigated the common conditions, conservation best practices, and storage issues related to copying books in archival collections.

METHODOLOGY

Methodology included a questionnaire submitted to professional list-serves, a survey of the copying books at the Center for American History at the University of Texas at Austin, and an exploratory conservation treatment, which included lining, mending, humidification and flattening, and aqueous techniques.

Two copying books were selected from the collection of the Center for American History for examination and treatment. The books exhibited a wide variety of problems and were chosen to represent the range of possible conditions of letterpress copying books. The Ballinger copying book from 1856 exhibited widespread letter drop-out from iron gall ink corrosion and severe distortion and tight creases from improper





LEFT TO RIGHT

Fig. 1. Ballinger Letterpress Copying Book. Before treatment. Ballinger Papers 1856, The Center for American History, University of Texas at Austin

Fig. 2. Fulton Letterpress Copying Book. Before treatment. Fulton Papers 1890–91, The Center for American History, University of Texas at Austin

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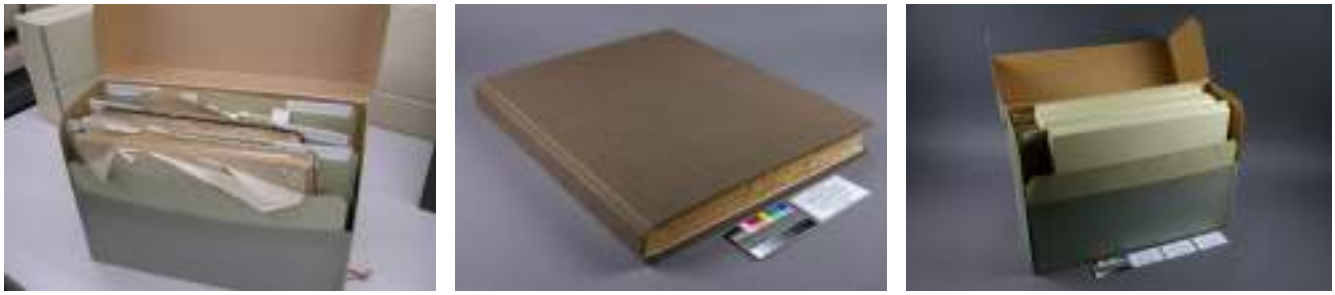

Fig. 3–5. Ballinger Letterpress Copying Book. Existing housing condition (left); after treatment, new case (center); and after treatment, new custom enclosures (right). Ballinger Papers 1856, The Center for American History, University of Texas at Austin

storage of the textblock in a document case without the support of a binding, but the paper remained relatively flexible (fig. 1). The Fulton copying book dated 1890–91 exhibited severe embrittlement, darkening, foxing and reverse foxing, but the binding was in relatively good condition (fig. 2). Both books exhibited widespread fading, offsetting, and feathering inks. One section from each book was removed in order to treat the individual leaves. Surface cleaning was performed as needed with a Hake brush, soot sponges, and a microspatula. Local humidification was performed with a small sable brush, cotton swabs and de-ionized water to release tight creases and folds, as needed to allow legibility. Selected leaves were humidified overall in a humidity chamber and flattened between wool felts. A few leaves were washed in successive five-minute baths of re-calcified de-ionized water. Lining repairs were performed using lens tissue applied wet with 4:1 wheat starch paste, as well as with a variety of prepared tissues using the following adhesives: 2% Klucel G, Lascaux 498 HV, and 2:1 wheat starch paste / methyl cellulose. The Klucel G and Lascaux tissues were re-activated using ethanol, isopropanol, acetone, and heat. The re-moistenable tissue was re-activated with humidity. Several methods of application were performed for each type of lining. After treatment the bindings were stabilized, housed in custom tuxedo boxes, and returned to their existing manuscript boxes (figs. 3–5).

FINDINGS

The results of the questionnaire illustrated a great need for research into best practices for treatment, storage, and duplication of these materials. Of those that responded, 74% reported that records in their collections are currently losing information. There was great variety in current practices, highlighting a lack of standards, and many archivists are unclear about appropriate preservation plans for copying book collections. Through a relatively high response rate and many detailed comments, the respondents communicated a feeling of both urgency and enthusiasm for research in this area.

Overall humidification, aqueous treatments, and linings applied wet caused unacceptable damage to the manuscripts and should be avoided as possible when treating copying books. Fragile areas were torn, shattered, and lost when transferring the wet paper from one support to another and when removing the support after the manuscript was dry. Common supporting materials: Hollytex, Tyvek, Mylar, and silicone release paper; were all found to cause damage. Silicone-release Mylar was the only support that was not found to cause damage. Recent research supports the decision to avoid moisture when treating copying books that contain iron gall ink. Reissland (2000) found that paper deteriorated by ink corrosion is less hydrophilic than surrounding undamaged paper, causing stress on the inked areas during aqueous treatment, and Eusman and Mensch (2000) found that damaging water-soluble components of the ink can spread throughout the sheet causing further deterioration.

The copying paper, although sticky to the touch, resisted adhesion to the solvent-set lining tissues. Klucel G was inadequately adhered when re-activated with ethanol, isopropanol, and acetone. Lascaux 498 HV was more effective than Klucel G, but required special procedures to gain sufficient tack. It was found that the solvent evaporated before the lining was well adhered to the manuscript, so containing the solvent in a silicone release Mylar sandwich was attempted and found to be very effective. The Lascaux 498 HV-coated tengujo tissue was misted with ethanol and boned down with a Teflon folder while inside the silicone-release Mylar sandwich. The manuscript was left under weight until completely dry (fig. 6–10).

The copying paper also resisted adhesion to heat-set tissue. The Lascaux heat-set tissue adhered more adequately than the Klucel G when used with high heat and left under heavy weight until completely cool. Although this method does not provide the strongest lining possible, in some situations its benefits may outweigh its disadvantages. It is fast, easy, allows in-situ repair, and does not require moisture. Many copying books are in excellent condition except for a few leaves, which contain highly corrosive ink or were otherwise damaged. Because copying books often contain many different inks, the level of deterioration is often inconsistent within a single volume. For these books, performing in-situ

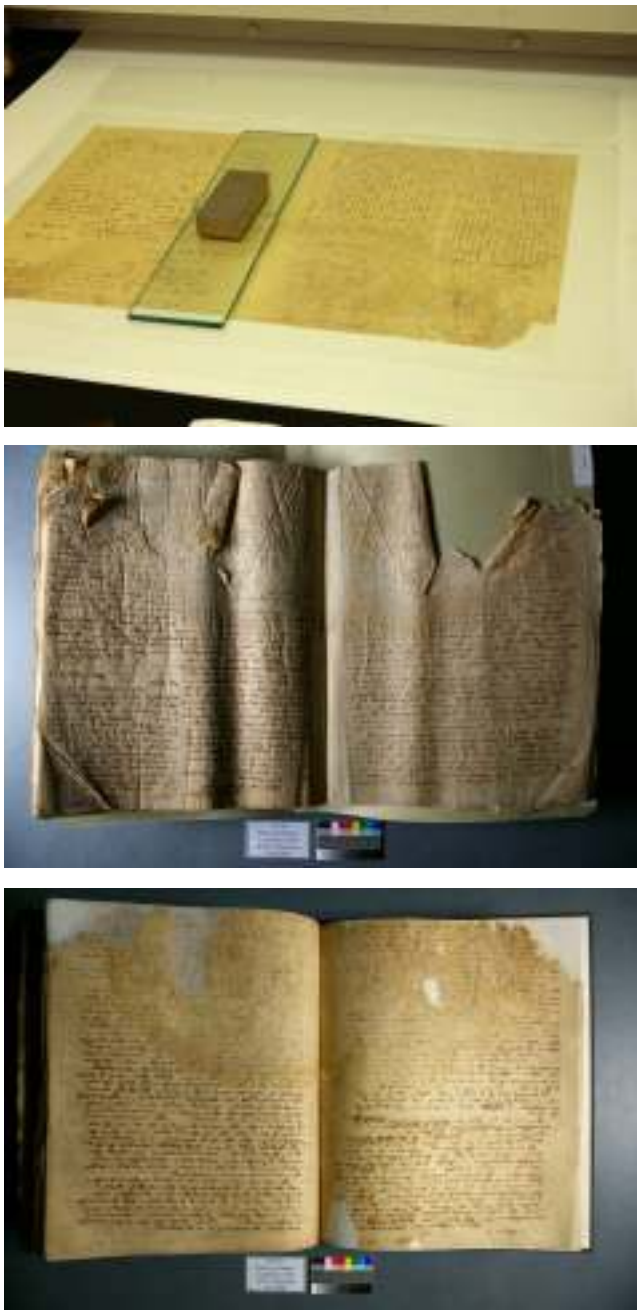

Fig. 6–8. Ballinger Letterpress Copying Book. During treatment (top); before treatment (center); and after treatment (bottom). Ballinger Papers 1856, The Center for American History, University of Texas at Austin

lining or mending with a very thin heat-set Lascaux tissue is preferable to dis-binding.

Although dis-binding and lining each leaf is a very invasive and time-consuming treatment, it may sometimes be the only viable option. Access is often restricted for severely embrittled copying books because they cannot be handled safely, and in some cases cannot be safely digitized. For these artifacts,

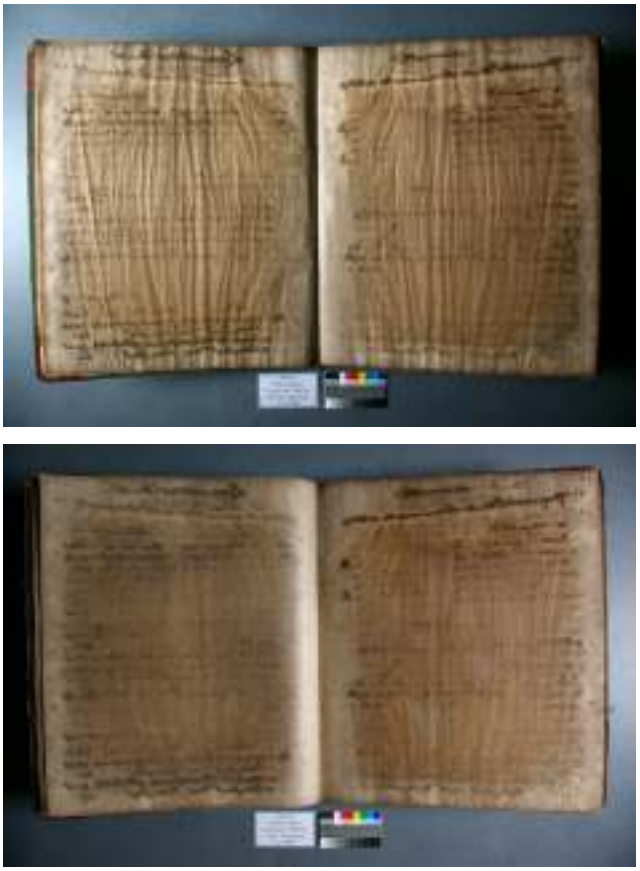

Fig. 9–10. Fulton Letterpress Copying Book. Before treatment (top) and after treatment (bottom). Fulton Papers 1890–91, The Center for American History, University of Texas at Austin

restoring access to the information may be a higher priority than retaining the character of the bindings. Unfortunately, the original tissue is so thin, that adding even extremely thin linings will significantly increase the thickness of the text-block, putting pressure on the joints of the binding.

CONCLUSION

The composition of the copying papers and inks creates special challenges for conservation treatment. The inclusion of sugars, glycerin, and other humectants causes the papers to become quite sticky and difficult to handle when wet, yet the papers do not readily adhere to solvent-set or heat-set lining tissues. The most effective treatment method found was lining with a Lascaux 498 HV-coated tengujo tissue misted with ethanol and boned down with a Teflon folder while inside a silicone-release Mylar sandwich. Because the materials are particularly sensitive to moisture, the use of enclosures and environmentally controlled storage conditions are particularly important preservation measures.

FURTHER RESEARCH

Further research will be conducted in an effort to characterize the materials on a chemical level, explore new methods for conservation treatment, and investigate imaging options. The study will be conducted at the Smithsonian Institution Archives with the support of the Smithsonian's Museum Conservation Institute and Office of Fellowships.

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