

CONSERVATION SURVEY
COUNTY AND SUPERIOR COURT RECORDS
LITCHFIELD AND NEW LONDON COUNTIES
CONNECTICUT STATE LIBRARY
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INTRODUCTION

The Connecticut State Archives is the department in the Connecticut State Library that holds county and superior court records that go back to colonial times. It is also the public records administration office charged with the maintenance of public and state records in Connecticut. The Connecticut State Library is currently completing a grant-funded project to process and rehouse the court record documents from two counties: New London and Litchfield, from colonial times until approximately 1855. Many factors were involved in the selection of these counties, including their historic interest, which afforded the opportunity to collect significant data while processing the documents. At the same time, the project to process the court records of these counties was meant to serve as a pilot for developing a strategy for the eventual processing of the court records from counties throughout the state. Project personnel unfold the documents, surface clean and repair them, check their order against the docket books, rearrange them as necessary, folder, and box them. As part of the Library's grant match a preservation expert was to be brought in to evaluate the preservation techniques employed during the processing of the documents, with a view toward making improvements as the Library processes other court records in the future. Therefore, on August 12 and 13, 2004, Walter Newman, Senior Conservator at the Northeast Document Center in Andover, Massachusetts, came to Hartford to examine the processed records and discuss with project personnel the parts of their performance that have to do with the physical preservation of the documents. At the Library I was received by Mark Jones, State Archivist and Debra Pond, Project Archivist. Unfortunately I was unable to meet with another key staff member, the Project Manager Bruce Stark, who was called away prior to my visit, but I did observe the student worker who was assisting him. Also with an eye to the future, I examined records from Windham County, which was identified as one of the series in the worst condition, primarily due to mold damage. Beyond these series I did random sampling of court documents from all the counties in order to look for special problems that might crop up in the future that had not been a factor in the series currently being processed.

CONDITION AND CURRENT USE OF THE COURT RECORDS

The documents are reported to be heavily used. Some years ago they were bundled and placed in flip-top boxes, which are provided to readers. These boxes are worn and deteriorated. Readers must extract the bundles from the boxes, in which they tend to be tightly packed. Sometimes the documents are so tightly bundled and the boxes are so overfilled that the boxes must be torn open in order to get the bundles out. The bundles are usually fastened with pink ribbons tied with small metal slip-fasteners. The fasteners are awkward to use, especially for those who are not accustomed to them, and they obviously place uneven pressure on the documents. The ribbons must sometimes be cut in order to remove them. The compression of the bundles is such that the documents have a tendency to fly apart when they are untied. This is especially worrying as researchers are expected to place the records back in the box in their correct order. Cross-reference flags made of a poor-quality kraft paper are in direct contact with the documents.

The court docket books are an invaluable resource that has been especially important for identifying missing records. Many have been restored in the past, although records of exactly what was done to them are not in evidence. Some have been rebound in post bindings that are very serviceable, while in other library bindings the writing goes into the gutter and a bit of legibility is lost.

Looking into random boxes from other counties and from later years, a variety of typical conditions and materials were found. These include mechanical damage, residues of old adhesive bindings, brass ring fasteners, contact staining from cross-reference cards, paperclips, typescript on onionskin papers, carbon copies, water damage, non-archival folders and boxes, and so on. Some documents have not yet been boxed at all, but are bundled on the shelf.

REMOVING OLD FASTENERS

The NEDCC technical leaflet *Removal of Damaging Fasteners from Historic Documents* is included with this report as it offers many useful tips. I did see that penknives are in use for removing fasteners at the Library. I advise against this as a sharp knife is likely to cut either the document or the practitioner's fingers. Microspatulas of the type commonly used by conservators are inexpensive, thin enough to insert under fasteners, and rigid enough to pry them open. They have blunt edges that are not likely to cut. It is advisable to insert Mylar pieces underneath the fastener to avoid indenting the document surface with the microspatula during removal.

Plastic paper clips are also present in parts of these collections. The project staff is aware that, although these clips do not rust, they are not recommended due to the stress that they create on the paper.

SURFACE CLEANING

Until recently staff had been cleaning with vulcanized rubber dry cleaning sponges of the type that we call "Gonzo" sponges. Now "Wisch-ab" cleaning pads, normally marketed for cleaning wallpaper, are being used based on the advice of a conservation supply vendor. We do not recommend them, nor do we recommend other dry cleaning powders or pads. These products are abrasive and leave a great deal of dust and particulate matter in the surface of the document. Wisch-ab also leaves chemical residues. This is evident in the particles caked on the floor around where the technician is working with Wisch-ab. It is possible to purchase commercially powdered vinyl erasers, which is a product that is fairly non-abrasive and has less tendency to leave embedded particles, but this product is expensive. We most often use the Gonzo sponges, which we find to be relatively safe and effective. They must be used judiciously, taking care to avoid flaking or powdery inks or other media or papers with a delicate surface. Some surfaces that are too fragile to be rubbed with the sponge may be somewhat improved by tamping the surface. The sponges can be cut up as they are used in order to gain new cleaning surfaces, thereby making the sponges last longer. They should be used in conjunction with a soft, clean brush in order to remove sponge particles.

The most important thing to remember when surface cleaning is to remain aware of the results that are being achieved. It is easy for one's attention to lapse when one is doing this kind of work all day. If no visible improvement is being produced, then it is not worthwhile expending the staff time and supplies on surface cleaning, and the surface of the document is being abraded at least to a slight extent for no good reason. We do not recommend cleaning over text unless there is a marked improvement to be gained and the practitioner is confident that media are not being affected. Cleaning between lines of text in a heavily soiled document will produce an odd and distracting appearance, and localized cleaning often makes the remainder of a document appear worse in contrast. All these hazards are best guarded against by careful observation during the cleaning process, keeping in mind how an object looks from a normal reading distance as well as from extremely close up.

It is always important when processing, conserving, or consulting documents to maintain strict standards of cleanliness, in order to avoid finger marking and otherwise soiling the documents, especially by transferring dirt from other soiled documents and containers. The work surface should be cleaned frequently or a clean paper substrate frequently renewed. This paper does not need to be of archival quality; an inexpensive, smooth kraft or glassine paper can be used. Hands should be kept clean. If gloves are worn they too must be changed and/or washed frequently because they will also transfer dirt. There is not a sink conveniently located near the work area where staff can wash their hands frequently. Therefore the Library may consider providing an ample supply of non-water-based hand cleaners to project staff.

The work surface should be large enough and uncluttered. If a large, multi-folded document is to be opened up, this should be done on a bare, clean surface large enough to accommodate it.

The NEDCC technical leaflet *Surface Cleaning of Paper* is included with this report. The article is in need of updating, but it may offer some useful background information for this topic.

FLATTENING DOCUMENTS

Historic documents are commonly folded once to form a folded folio, and then they are folded additional times into bundles. Part of the regimen for processing the court records is to open and soften the latter folds but to keep the first folio fold, which is the recommended practice. Some documents, particularly those that are over sized and/or that have complicated structures with disparate sheets hinged together, have many additional folds.

The tri-folded documents have no doubt been kept that way for many years. They have a strong plastic memory and resist being unfolded, which is of course necessary in order to read them. They also resist lying flat once they are unfolded, which makes them awkward to handle and causes them to take up more room in the folders. The documents should be opened cautiously to avoid accidental breaking, since a few of the documents are brittle. Brittle documents that resist opening should not be opened but should be withdrawn from use, flagged for later conservation treatment, and marked with a warning not to open them.

The staff is now flattening documents by means of smoothing them and then burnishing directly on the creases using a bone folder. Smoothing with the hand is not a good idea, as it will leave oils from the hands and dirt transferred from other documents, which may be "fixed" by the oils from the hands. Burnishing with the bone folder does improve the flatness of the documents somewhat, in that they do not have such a tendency to close themselves again, but it runs the risk of abrading and altering the surface appearance of the paper. When burnishing, staff should first place a square of non-woven polyester such as Reemay or Hollytex over the crease and burnish only through the polyester in order to reduce this risk. Polyester film such as Melinex should not be used for this purpose, as this may impart a glossy surface to the document. Alternatively, staff might try simply flexing the horizontal folds in the opposite direction to see if this would produce a result as satisfactory as burnishing.

After burnishing the documents are stacked open on the tabletop with window sash weights on top. This technique is not effective because the weight is localized. It would be preferable to place some sort of smooth, rigid board, a piece of plate glass (with polished edges and corners so that technicians won't cut themselves), or even oversized

volumes on top of the stack with the weights placed on top. That way the pressure would be more evenly distributed. Normally the documents must be left under pressure for at least a week to make a noteworthy improvement, however. The way to make more of an improvement in less time is to humidify the documents before pressing them. The documents can be humidified in a humidity chamber, as described in the NEDCC technical leaflet *Relaxing and Flattening Paper by Humidification* enclosed with this report. It would be a good idea for technicians to practice this technique with a professional conservator before incorporating it into the project.

REPAIRING DOCUMENTS

The procedures I saw in use for repairing the documents were disappointing. Two "archival" pressure-sensitive tapes are being used generously, Filmoplast P and Lineco Document Repair Tape. These products, like all pressure-sensitive tapes, whether they are marketed as "archival" or not, are not recommended by conservators for use on documents of permanent value. They have not been in use long enough to have stood the test of time, and in our experience they are very difficult to remove after a relatively short ageing interval. Usually toxic organic solvents must be used to remove them, and even then we cannot remove the adhesive completely. We have read reports of these tapes causing fading of printing inks on the side of the sheet opposite the tape. This is probably due to elevated alkalinity. Debra Pond's experience with these products has been that only large pieces of the tape stick securely. This limitation is incompatible with good conservation practice, as you generally want to use the smallest mend necessary to adequately repair a tear and you especially want to avoid covering text as much as possible. Also, staff tends to use the tape generously in the most deteriorated areas of the paper, such as where there is rodent, insect, or mold damage. These are the weakest areas of the paper and may also be the most heavily written. These tape repairs will make already compromised text still more difficult to read, and the weakened paper will be least able to withstand the removal of these mends in the future. Some, including a representative of Neschen, the company that markets Filmoplast P, argue that while this tape is not suitable for archival applications, what constitutes an "archival application" is open to discussion. The significance of these records argues for applying the higher end of archival standards to their treatment.

The recommended materials for repairing valuable documents are Japanese paper and starch paste or methyl cellulose. Japanese papers have good aging characteristics and are strong. They blend well with old papers without stiffening or puckering them, and they are quite translucent. It is true that starch paste (usually made from wheat starch) has to be cooked and spoils in a few days so it must be made frequently, but small quantities can be made very quickly in the microwave oven. Methyl cellulose is easy to make (just mix!) and it does not spoil. Both adhesives produce a reliable but flexible mend that remains reversible. The technique for using either adhesive can be learned quickly,

preferably from a professional conservator. The NEDCC technical leaflet *Repairing Paper Artifacts* is included with this report.

Another recommendation that I would make to Library staff is simply to mend less. It is not necessary to mend every tear, and professionals usually try to do the least mending that is necessary. This approach is definitely preferred when unsatisfactory materials are in use. Instead of mending all along all tears, consider mending just the worst ones that make it dangerous to pick up a document. Also, try placing just a small mend at the endpoint of major tears that look like they may lengthen, and perhaps small bridges at strategic locations along tears, avoiding text as much as possible. I observed a couple of instances when composite sheets, awkward constructions of disparate sheets joined together by gluing or sewing and then folded up, were being mended together where they were not originally joined. It is important to place mends only where it is certain that they belong, rather than take a chance on misleading a researcher as to the original structure of a document. When in doubt, leave it out, even if this leaves the document more awkward to handle. Furthermore, when a document has completely broken along a horizontal tear and separated into two parts, the break often runs through a line of text. In such a case it is undesirable to cover the text with an inappropriate mend just to keep the two parts connected. Alternatively these parts could be kept together but unconnected inside a paper folder and labeled in pencil with the same identifier so that there is no confusion as to the fact that they belong together.

BENIGN NEGLECT

When it comes to cleaning, repair, and flattening of documents, it is always preferable to do too little than to do too much. As conservators we at NEDCC spend as much time undoing ill-advised treatments as we do treating deterioration due to age, accidents, and unstable materials. Many past inappropriate treatments have caused permanent and irreversible treatment. It should not be assumed that any set of documents will never be conserved or otherwise processed again. Conservation techniques and philosophies continue to evolve, and the conservation profession in general over the last twenty years has adopted a more conservative approach, preferring to treat objects less and concentrate more on applying preventive conservation techniques to whole collections. Conservators now recognize that it is more beneficial to concentrate on preventing deterioration than to invest in painstaking and costly treatments of individual items.

REHOUSING DOCUMENTS

As documents are rehoused, those that consist of multiple sheets, including those from which destructive fasteners have been removed, are grouped inside a folded sheet of archival paper to keep them together. The case name is written in pencil on the paper. Pencil is the preferred medium for use on and near valuable documents. When labeling of original documents is desirable, the inscription is made unobtrusively (light and small) and, in a series, in a consistent location. Pencil labeling is generally reversible by erasing. If it is done in a consistent way it should be recognizable to readers who will not be confused as to whether these markings are original or not. Folders should be labeled on the tab in pencil. Inks, colored or black, and felt tip markers should not be used where documents are present, to avoid accidentally marking the documents. This rule is enforced in most archives and libraries, both for staff and readers.

While over-stuffing of boxes is being relieved, the staff is also taking care to support folders in under-filled boxes with archival board box fillers, which are excellent for preventing slumping of the documents inside the boxes.

Some of the larger documents are already too large for the storage folders, and others are too large once they are unfolded. They tend to be rehoused in the same size folders (the ones that fit in the flip-top boxes that are being used) if they are only slightly too large, and refolded more times than is desirable if they are much too large. It would be better to house both classes of documents in larger folders in boxes large enough to accommodate them. The slightly oversized should go into the next size of flip-top boxes leaving a flag, and if desired a photocopy, in their position in the series that they came from. Even if a document projects beyond the folder a little at either end or is covered by the index tab but not the opposing side of the folder at the top, it is very likely to suffer mechanical damage.

Larger documents should be placed in folders in flat drop-front storage boxes. The folders should be the same size as the boxes, so that they and their contents won't shift about in the box. Again, flags should be left in the series boxes that indicate the new location of the oversize material. I saw some Indian documents that were in flat covered boxes that lacked a drop front. It is easier to access materials inside drop-front boxes, and there is less danger of damaging the edges of the folders or the objects inside by digging

down into the pile. If there is a considerable number of much larger documents, a flat file or a drawer within an existing flat file should be dedicated to storage of oversize court records. Apparently there are some documents as long as ten feet. I would recommend that such ungainly documents be left folded until a professional conservator is able to flatten and conserve them. It is likely that the only practical way to store such documents is to roll them on archival tubes. In order to roll them they will need to be fairly effectively flattened beforehand, and this is likely to require a complicated conservation treatment. Information about rolled storage is included in the accompanying NEDCC technical leaflet *Storage Solutions for Oversized Paper Artifacts*.

One practice I saw at the Library was to orient multiple-sheet documents inside a folder so that the writing/reading direction of the different sheets matched, even when this might mean that a sheet would stick out of the folder a little bit. I would rather see the documents placed in the folder so that they are completely protected, even if that means that a reader must turn the folder to read a successive sheet.

MOLDY MATERIALS

Moldy materials present additional concerns both in handling and in rehousing. There are a few moderate instances of mold residues among the records of both Litchfield and New London Counties. Since molds can cause irritation and allergic reactions ranging from mild to severe, and there are toxic species (rarely found in library materials), use and handling of these materials both by researchers and archives workers should be restricted. People who should avoid exposure to moldy materials include those with asthma, compromised immune systems, and known allergies to penicillin and molds. Everyone should handle moldy materials in ways that keep exposure through contact and breathing to a minimum. Possible precautions include the use of protective aprons, gloves, and respirators, and working with moldy materials in a fume hood. Work surfaces should be covered with clean paper that is constantly changed to avoid spreading mold spores from object to object.

The most effective treatment of moldy materials is to surface clean with a HEPA- (High Efficiency Particulate Air) filtered vacuum to reduce fungal structures on the surface. Conservation supply companies market small vacuum cleaners of this type that are suitable for use in libraries and archives. Any vacuuming must be done with a fine screen or cheesecloth over the suction end in order to avoid damaging the artifact. In some cases a paper may be so degraded by mold that it is too weak to withstand such cleaning. It is also possible to reduce mold deposits using mechanical surface cleaning techniques such as brushing with a clean brush, but this can be problematic because it must be done in such a way as to minimize spreading the mold and more deeply embedding it in the paper. The particular condition of an artifact will determine whether cleaning can be carried out by a trained technician or whether it should be referred to a professional conservator.

At NEDCC we almost never recommend fumigation to combat mold. Toxic fumigants can damage some archival materials and are dangerous to workers that are exposed to them, as well as to researchers handling the materials afterwards. Fumigants are not always effective, and any effect they do have on mold is only temporary. When the toxin dissipates the mold can reactivate, often with more vigor than before. Previously moldy materials are susceptible to recurrences, and when environmental

conditions are favorable for their growth they can be expected to be the first to exhibit new mold growth. The key to controlling mold growth is the control of environmental conditions. Specialists have set varying guidelines for acceptable levels of relative humidity in a storage area, but at NEDCC we usually say that humidity over 65% for more than three days can cause dormant mold spores to germinate. Of course, these numbers are not hard and fast, but they can serve as guidelines, remembering that good air circulation, lower temperatures, and good housekeeping can reduce the likelihood of a mold outbreak. It is also necessary to monitor previously infested materials for recurrences, especially when environmental conditions are less than ideal, and to isolate moldy materials from the rest of the collection.

Some archivists isolate moldy materials in more or less impermeable bags made of plastic such as polyethylene. This does have the virtue of protecting the rest of the collection, but with prolonged high humidity it creates an ideal microclimate for mold growth inside the bag. Encapsulation can also promote mold growth in such conditions, and for that reason we usually do not recommend encapsulation for collections maintained in humid environments. Encapsulations and plastics are not impermeable to water vapor, and high humidity will eventually penetrate inside if it continues long enough. Humidity is not controlled where the court records are stored, and relative humidity could remain high there for extended periods in the summer, or when there is a water event, as has occurred in the recent past when the ceiling leaked. Therefore I think the best policy would be to store mold-affected materials in the same kind of document folders and flip-top boxes being used for the rest of the records, but isolated in separate boxes. Flags should be left in the general boxes to indicate documents that have been removed to quarantine boxes, and quarantine boxes should be stored on a separate shelf. The quarantine boxes should be clearly marked not only with their contents, but also with a warning of the presence of mold inside so that personnel will be alerted to observe more careful hygiene when opening them or to avoid opening them altogether.

The Windham County records are severely damaged by mold, to the extent that the papers are very soft and powdery and they have "blocked" together. That is to say that they cannot be taken apart without loss of text and paper support. The only way to salvage these materials is to refer them to a professional conservator with the training and

experience to separate them, probably by immersing the bundles in water to delaminate them, followed by consolidating the paper and lining the sheets one by one. Even with the utmost care and skill there will still be significant loss of information. Unfortunately this would be a costly proposition, and I believe it would cost at least \$50 per sheet.

The cost of treating these documents seems prohibitive, but unfortunately there is no alternative. They cannot be reformatted unless they are first treated, because the text of all but the outer sheets can only be exposed by the treatment described above. Unfortunately it is not possible to predict accurately how successful treatment will be. There will be some loss of text; how much is not known. Probably the best recommendation that could be made at this time would be to have one bundle of documents treated in order to find out how worthwhile the results might be. Then the Library can make an informed decision as to whether to try to proceed with the remainder. Meanwhile, access to some of the Windham County record boxes is restricted, which is a very sensible policy in order to safeguard both the documents and the readers. The remainder of the record boxes from this county, however, are in a similarly poor condition but not yet restricted. This may be an oversight that should be corrected.

REFORMATTING

Sometimes archives workers justify short cuts in repairing documents with the argument that the documents must only be preserved long enough to get them microfilmed, digitized, or otherwise reformatted. This may in fact be a reasonable strategy in some situations. I feel, however, that this rationale should not be applied to unique historic documents such as these early court records. As early manuscripts they contain information not only in what is written, but also in the tools and materials that were used to write them, and in the physical evidence of the life of the documents since their creation. Also, old documents can be difficult to read, whether due to the deterioration of the document, the fading of the script, or the difficulty in reading old styles of handwriting. In reformatting there is always the possibility of some information loss, ranging from subtleties of manuscript ink color or density to overlooking a whole page. Scholars will always need to refer to the original document from time to time.

Some limited reformatting is now being carried out during processing in the form of photocopying. Photocopying is a durable medium as long as permanent paper is used, and photocopies are often very convenient for researchers. Like all reformatting media, photocopying can reduce the need for handling original documents. At the Archives, records that are too fragile for use are being replaced by photocopies in the files, but not in a systematic way. Documents that have to do with minority populations are being photocopied, as it is expected that there will be demand for these documents by scholars. It is an excellent idea to anticipate such a demand and to prepare in advance a series of photocopies that scholars can refer to. In some cases color photocopies are made. Color photocopies are undoubtedly more attractive and authentic looking, while they are also more expensive. The colors will fade over time. I don't expect that the colored "inks" will have a negative effect on contiguous documents, but I am unaware of any research on the matter that has verified that.

Microfilming is an excellent medium for reformatting. Digitization is coming into use more and more for reformatting at many institutions, including the Connecticut State Library. The problem with digitization is that the files must be updated over time along with hardware and software, and there is the risk that technological changes may make digital files unusable in the medium to long term. Therefore digitization is a boon to

access but not necessarily to preservation. One strategy that is now available is to scan documents and make use of vendor services that can convert digital files into microfilm. This can be done as part of an ongoing reformatting strategy or it can be done on demand. For further information about microfilming and other reprographic strategies, please call Victoria Ellis, NEDCC's Director of Reprographic Services.

CONCLUSIONS

It appears that there is difficulty in meeting the goal that was set for this project in terms of the quantity of documents processed within the term of the grant, largely due to the layoffs that occurred during the term of the project. During my brief visit it was not possible to evaluate the efficiency of conservation work procedures or to develop a sense of how rapidly the documents are being treated.

Leaving aside the issue of whether surface cleaning, repairing, and flattening are being done correctly, it seems to me that unnecessary work is being done. I recommend that these procedures be done very sparingly. Not only can time be saved, but also, in the case of repairing, a great deal of time will be saved in the future in trying to reverse these repairs. I believe it is an error to believe that the current stabilization effort can eliminate the need for more extensive conservation treatments in the future, and it would be unfortunate if the current efforts complicated future treatment if and when it becomes possible.

When going through a whole series of documents in a systematic way like this, the staff can take advantage of this opportunity to record which documents are in need of professional conservation treatment in the future if and when resources may become available for such an effort. Very fragmentary documents should be placed in individual folders by means of which they can be handled without the wear and tear of handling the documents directly. Documents that are in pieces can be assembled correctly to get a good photocopy and then left unmended. Documents with the type of iron gall ink damage that eats through the paper should not be mended but should be flagged for eventual professional treatment and foldered individually in the meanwhile. Fortunately, I did not see many instances of this iron gall ink damage among these records.

Technicians or summer interns could be trained to do all the basic document stabilization, freeing highly trained professional librarians and archivists to spend more of their time doing what they are trained to do. At the same time it is important for such professionals to supervise the technical work, while they concentrate on intellectual control, assessment, and arrangement. The Library should seek training for the technicians in the basic stabilization of the documents from conservation professionals

who have a thorough grounding in the theory and practice of conservation and who are up-to-date on recent developments in the field.

I was glad to have the opportunity to make a modest contribution to this important project. I hope that the project will continue and that more of these historic records can be explored and safeguarded.