

## **Digitization to avoid intellectual content loss from natural disasters**

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## **Abstract:**

*The World Digital Library (WDL) is a project of the U.S. Library of Congress, carried out with the support of the United Nations Educational, Cultural and Scientific Organization (UNESCO), and in cooperation with libraries, archives, museums, educational institutions, and international organizations from around the world.*

*The WDL makes available on the Internet, free of charge and in multilingual format, significant primary materials from all countries and cultures.*

*The principal objectives of the WDL are to:*

- *Promote international and intercultural understanding;*
- *Expand the volume and variety of cultural content on the Internet;*
- *Provide resources for educators, scholars, and general audiences;*
- *Build capacity in partner institutions to narrow the digital divide within and between countries.*

*Partners in Africa include the National Library of Nigeria, Uganda, Egypt, Sudan, Kenya, South Africa and University Libraries in Pretoria, Wilwatersrand, in South Africa. Learn how the Library of Congress assisted the Ugandan National Library in Kampala by sending specialists in conservation/stabilization and digitization to provide the basis for in-country digitization and stabilization of important collections thereby helping to protect, preserve and make these materials accessible to the world. In order to make such a large collaborative possible the Library of Congress*

*hosts the website to provide access, and established the metadata, digitization and file transfer standards with the other partners. In Uganda the Library of Congress has provided equipment, software, training and financial support to establish digital conversion centers for high quality digital production. Learn how the Ugandan program was supported by training in stabilization/housing and digital protocols. Such actions can assist countries should a disaster occur by providing digital copies of possible damaged materials.*

**Keywords:** Digitization, Preservation, Conservation, Collaboration, Library of Congress

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## **Put body of the paper here**

The World Digital Library (WDL) is a project of the U.S. Library of Congress, carried out with the support of the United Nations Educational, Cultural and Scientific Organization (UNESCO), and in cooperation with libraries, archives, museums, educational institutions, and international organizations from around the world.

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- Promote international and intercultural understanding;
- Expand the volume and variety of cultural content on the Internet;
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One of the Partners in Africa was the National Library of Uganda. In 2010 the Library of Congress assisted the Ugandan National Library in Kampala by sending specialists in conservation/stabilization and digitization to provide the basis for in-country digitization and stabilization of important collections thereby helping to protect, preserve and make these materials accessible to the world. In order to make such a large collaborative possible the Library of Congress hosts the website to provide access, and established the metadata, digitization and file transfer standards with the other partners. The team of Library of Congress staff went to the Library to install digitization equipment, provide training in the equipment and processing of files, and supplies for stabilization and housing of the materials. Such actions assist countries should a disaster occur by providing digital copies of possible damaged materials. To see the files under the National Library of Uganda (<http://www.wdl.org/en/institution/#national-library-of-uganda> ) with a note as to the specific custodial institution (see the note in <http://www.wdl.org/en/item/7768/> ). Files under copyright are viewable only in the Library of Congress AMED Reading Room.

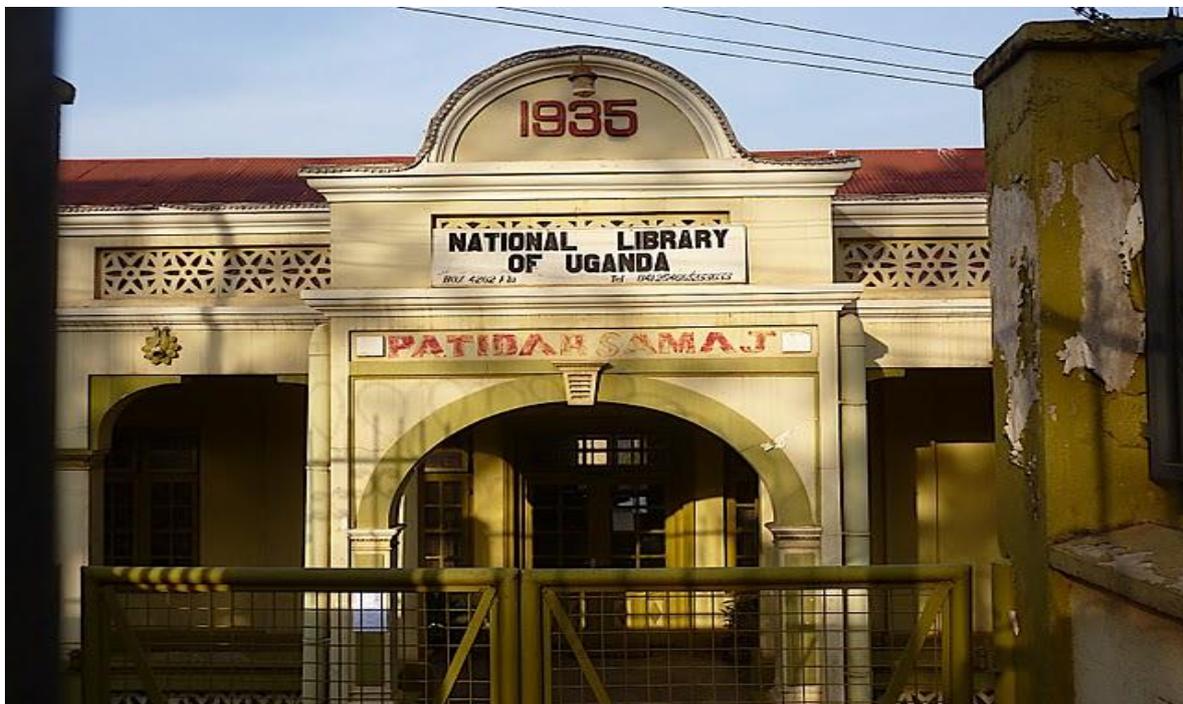
Three Library of Congress staff members participating in the World Digital Library training mission at the WDL Scanning Center, National Library of Uganda, Kampala included Alan Haley, Conservation Division, Eve Ferguson (AMED/AFS, consultant to WDL on Ugandan culture and history) and Sandra Bostian (WDL-Metadata Specialist).

Alan Haley provided training for Moses Nakabaale, hired with WDL funds as the preservation specialist, to assess for care and handling, treat (when necessary), and house all materials submitted for inclusion in the WDL program. Nakabaale is one of only three

individuals in Uganda who are known to have some previous training in conservation or binding techniques. For the WDL project, Nakabaale needed to learn how to review items based on their suitability for scanning, to understand the approach to conservation of materials with his focus on stabilization, to be able to distinguish between essential and optional conservation treatments, and to develop and implement a repertoire of secure archival-quality housings suitable for submitted items. These protective enclosures were to be supplied from the materials sent to the WDL scanning center from the U.S., purchased with WDL funds from Gaylord Bros. and University Products, and supplemented by a smaller shipment of surplus and newly purchased materials from the Library of Congress. Depending on the dimensions of an individual item and the type of housing required, the enclosures would be either pre-fabricated or custom-made by hand.

The second task was to make site visits to potential participating institutions, where collections materials could be viewed, and where WDL representatives could explain to collections custodians the benefits of participating in the WDL program.

### **The National Library of Uganda**



The NLU is located in central Kampala, capital of Uganda, in a building which dates from the 1930's. The building was once a private residence, but was offered for rent to the NLU a few years ago. A fulltime staff of 10 to 12 people occupies the office spaces and the

reading room. All facilities except restrooms are on the ground floor (pictured below), with entrance to the reading room directly in front, the scanning center in a room on the left, and office spaces off to the right. The back of the building has a staircase ascending from a lower ground level to the reading room level (see accompanying photos) due to the slope of the ground upon which the building is situated.

The building does not possess any systems for heating or cooling. Also of note, and typical of African colonial era construction of this type, there are no overhead water-carrying pipes in any office or collections areas of the building.

Small ventilation windows at the upper reaches of the outer walls of the building provide for air circulation, and they are usually open. The scan center does have a wall unit air conditioner which is kept on during work hours, but is switched off at night and during weekends.

Security of the NLU spaces is provided by locked doors to all offices and collections areas. The Scanning Center is locked when unoccupied. In addition, an armed guard and two guard dogs are always present on the grounds, during operating hours, at night, and on weekends as well.

### **The environment of Kampala**

Kampala itself occupies a series of valleys, surrounded by hills. It lies almost directly on the equator, only a few miles from the shores of Lake Victoria. The climate is tropical, with average high temperatures in the mid-to-high 80's year round and average low temperatures never varying much from the mid-to-high 60's. Frequently, temperatures do exceed 90 degrees F. Rainfall is consistently reported in every month of the year, between 200 and 670 mm./month, with peak rainy seasons occurring in March-April-May and October-November. Relative humidity will



range from 53% to 89%.

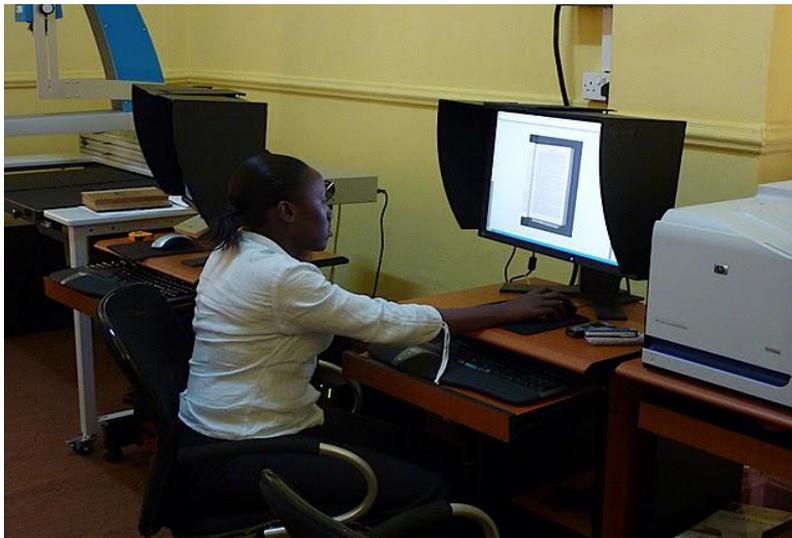
Due to its situation, the environs around the capital keep airborne pollutants in the valleys. Kampala suffers from high levels of air pollution caused mainly by automobile exhaust and by the number of coal burning stoves in use. Also, red clay dust is ever-present in the capital and even more so in rural areas, as many travelled surfaces are poorly paved or not paved at all. The city has grown at a very rapid pace over the last few decades, with an inadequate infrastructure that has never been able to keep pace with growth. Traffic is heavy and produces near-gridlock conditions at times, pedestrians often share roadways with vehicles due to sporadic construction of sidewalks, and crosswalks and traffic lights



are exceptions, rather than the rule, at intersections. As in other boom cities in developing parts of Africa, a somewhat chaotic atmosphere reigns over the main routes of communication, though locals take these conditions in stride. Public transport is limited to minibuses which stop to pick up and discharge passengers wherever there is a request to do so. Commutes of staff members to the NLU can take over an hour on any given day, despite their homes being within relatively short distances from the facility.

### **WDL-NLU Scanning Center**

In early January 2010, the DigiBook Supra Scan II was delivered to the National Library of Uganda for installation as the centerpiece of the WDL Scanning Center. Michael Neubert (Supervisory Digital Projects Specialist, Library of Congress) and Derek Jenkins (contractor working for the Library of Congress), arrived on January 3 to oversee installation of the equipment, ensure its correct operability, and train WDL Ugandan staff in its operation.



Ronnie Hawkins (OSI/ITS, Library of Congress) arrived on January 9 to continue training the staff to handle collections on the scanner bed and to capture images.

The operation of the DigiBook Supra Scan II had no problems, except for the occasional need to adjust lighting levels. Unfortunately, the accompanying Supra Scan II cradle, which had been

originally ordered to support bound items during scanning, was lost in transit from the Entebbe airport into Kampala.

Lighting in the room is provided by overhead fluorescent lights which do not seem too strong for the room, nor do they give off heat. Large windows in the room are completely covered by curtains, which only allow filtered light through, at what appear to be very acceptable levels. The LED lighting of the DigiBook Supra Scan II emits no heat or UV rays, and only appropriately low light levels for paper-based collections materials. The scanner light source was tested as safe and meeting specifications by Derek Jenkins during the first week of January.

All WDL-NLU staff members have work experience in their respective specialties. Their qualifications appear solid, and they exhibit a great deal of enthusiasm for the WDL project.

### **Conservation training for WDL-NLU**

Alan Haley worked closely with Moses Nakabaale during his week in Kampala. Moses received a Diploma in Preservation and Conservation from the Universities of England Consortium for International Activities (UNECIA). Prior to accepting the position in support of the WDL at NLU, he worked in the binderies of Makerere University Library as well as the Library of Uganda Christian University. He is one of a very small number of

people with formal binding and conservation training in Uganda, a fact which, combined with his past work history, means he already knows many of the key players who are involved in the oversight of important Ugandan collections.

**Planned training:** One of the key steps proposed to encourage participation in the WDL by Ugandan institutions other than the NLU was to offer archival quality housing for any item accepted for inclusion in the scanning program. The housings would offer protection to the items in question during transport from an institution to the NLU Scanning Center, and would remain with the items afterwards as permanent archival housing. In order to accommodate this plan, equipment, materials and supplies had to be ordered and sent to Uganda ahead of time for me to be able to instruct Mr. Nakabaale in how to make the enclosures that have served us well at the Library of Congress, and perhaps to improvise other styles of enclosures as the occasion demanded.

Not knowing before arriving in Uganda exactly what types of collections items we would find that would be under consideration for the WDL program.

The preferred protective enclosure for books is a clamshell box constructed with binder's board. Unfortunately, because the heavy equipment needed to effectively cut boards for traditional clamshell boxes was not available at the NLU, so alternatives would include pre-fabricated boxes, pre-scored wrappers, and an array of custom-made wrapper styles, all to be held securely together with Grip-Tites. Single leaf documents would be housed in folders of card stock, paper stock, or polyester film L-seals. Newspapers and maps would be transported and housed in large double-tray boxes, 20 pt. card oversize folders, or larger polyester L-seals.



**Supply situation:** One of the most important components of the job description for the WDL-NLU preservation specialist was to provide archival housing for items and other important conservation techniques, though these were techniques that would be used more sparingly in the WDL program.

**Achieved training:** Alan and Moses discussed at length procedural issues that are essential in a digital conversion program. He had been exposed to a few of the following conservation steps previously, but in such cases I deemed them worthy of review in the context of preparing materials for digitization, a focus that was different for him:

- a) evaluation of materials before digitization for care and handling requirements, and for essential treatment needs
- b) dry surface cleaning of documents using acrylic eraser crumbs
- c) preparation of methylcellulose as an adhesive and for use as a poultice
- d) mending tears and filling losses with Japanese and Korean papers
- e) hinging loose pages back into textblocks
- f) mending brittle paper using heat-set tissue and tacking irons

- g) examining media and substrata under magnification with loupes and magnifying goggles
- h) testing media for solubility prior to aqueous treatment
- i) preparation of Ca(OH)<sub>2</sub> and its use in buffering acidic paper
- j) preparation of foldout materials using water and drying them between blotters
- k) general humidification and flattening of curled silver gelatin prints
- l) general humidification of folded or creased brittle paper documents
- m) creation of photo corners to mount photographs for digitization
- n) removal of adhesive tape using applied heat, and reduction of residual adhesive using pick-up erasers

**Training set-up:** A room adjacent to the Scanning Center has been set aside for Moses to perform his work, to provide him with private space that allows him concentration and proximity to where his materials can be stored. Still needed in his workspace are shelves or an additional cabinet to be used to secure and store his tools and supplies. A large table already placed in the assigned room should provide adequate square footage for treatments, once he is able to store his supplies in another location. Unfortunately there is no electrical outlet in the room, so when heat-set tissue mends must be performed (which will be a fairly frequent treatment, judging from the amount of brittle paper observed in Ugandan collections), he will need to carry his materials into the Scanning Center, unless using an extension cord which can be run from adjacent offices into the conservation room appeals more to him. The room does have a large window with a curtain, which filters the natural light which is adequate for doing treatments. Ventilation is provided by louvered panes in the upper window. No cooling units are present in this space.

**Assessment preparations:** Moses and Alan developed a conservation assessment sheet to be used in the evaluation of each item proposed for the program. Sandra Bostian, Metadata Specialist, was also a collaborator in the effort to refine documentation of important item-specific information which would be helpful to the conservation specialist before, during and after the selection process, and it was decided that Moses give input to the WDL-NLU metadata specialist. Moses and Alan together examined multiple collections items, and used the conservation assessment form to arrive at an understanding of treatments that would be necessary in the scanning process. They also discussed at length the types of treatments that would be best left to perform after scanning had been completed, either from the handling safety perspective, or from a need to accommodate an expedited scanning schedule.

**Further WDL-NLU staff training:** In addition to training Moses Nakabaale in conservation and stabilization techniques, all WDL-NLU staff needed to be trained in care and safe handling of collections materials.



This was accomplished by a handout, *“Selection, Care & Safe Handling of Collections Materials for the Digitization Process: WDL Kampala, Uganda,”* .Moses understood that as their Conservation Specialist, he was responsible to ensure that everyone would be trained in care and safe handling procedures.

### **Overall impressions of Ugandan collections**

All bound items and documents I examined were from the twentieth century, and what is considered “old” in Ugandan archives will generally be from the period 1900-1950. Prior to colonization, the tribes living in that area of the world did not routinely utilize written languages, and history was commonly passed on through oral tradition. Most printed documents prior to 1900 will likely be found in British repositories, although it should be noted that Makerere University in Kampala (founded 1922) was, prior to the first decade of the twenty first century, by law the library of record for the country, and reportedly has the richest collections not only in Uganda, but on the entire African continent.

By and large, bound items in Ugandan collections are cloth case bindings, often with detached spines and detached boards. Protective enclosures are not frequently found in most institutions, though older newspaper collections, more than any other format, will often be boxed in order to be shelved more efficiently. Older newspapers are also sometimes found in oversize bindings that do not hold up to the use demanded of them. A large number of Photostats were found in many collections as well, but were always said to be the only copies known to exist of the documents in question.

### **Uganda WDL Project Stakeholders Meeting**

On February 2, 2010, the WDL Project Stakeholders Meeting was held at the National Library of Uganda for all representatives from institutions which had been approached about participation in the program. It was the first time this group had met to discuss program development since the initial stakeholders meeting in May 2009. It was intended as an opportunity for them to learn more about the World Digital Library, to meet the staff of WDL, to meet the Library of Congress trainers, and to ask questions of all those involved. It was also an opportunity for the National Library of Uganda to showcase their facilities in the new Scanning Center and to demonstrate the process of image capture on the DigiBook SupraScan II. Approximately twenty five individuals from other institutions attended.



In addition to her general explanation of metadata, Sandra Bostian provided attendees with an excellent PowerPoint presentation as well as an internet demonstration of web pages from the WDL website to give attendees the opportunity to visually evaluate the existing content. Eve Ferguson discussed the content that was being sought that would be ideal for the program, and she touched upon the issues of cultural sensitivity and repatriation of cultural property, currently topics of wide interest in Uganda. I explained the need for a preservation component within a digital program, emphasizing that surrogate creation through digitization is

a preservation step of immense importance. I also displayed the enclosures that might be offered as permanent housing for the items that pass the final selection phase of the program, and I described the types of conservation treatments that would be considered for any items that needed stabilization. I assured the attendees that no treatment would be given their collections items without a full description of the proposal from Moses Nakabaale, and the custodians approval of the proposal.

Follow-up questions and comments from the audience generally focused upon the sustainability of the program, ownership and copyright issues, and the selection and decision-making processes that would ensure the cultural sensitivity required by participant institutions.

### **Observations and final recommendations**

- **Scheduling:** For any similar future efforts, I would recommend more input from Library of Congress trainers in the development of schedules at the mission destination. Sarah Kaddu is to be commended for her outstanding job in developing a schedule for the visitors, but after this experience we all have a clearer idea of what is possible to achieve within a given timeframe. I was not able to both do all site visits and also all necessary conservation training within the number of days on the schedule given to us, and therefore had to modify my schedule to ensure that Moses Nakabaale had sufficient time with me to fully grasp his specific responsibilities within his position.
- **Pre-travel briefings:** The success of any multi-staff member mission is directly proportional to the investment each staff member makes in understanding the value and function of everyone else involved in the project. Specifically, the more the tasks are understood, the better all can perform.
- **IPM:** Future preservation specialists assigned to developing countries should be encouraged to do further research into the very latest alternative insect remediation techniques, specifically Integrated Pest Management practices. While institutions in the U.S. prefer blast freezing, vacuum chambers, UV light traps, and isolation to control pests, such remediation steps are but a dream in locations such as Uganda. Simple refrigeration is very hard to acquire, freezing would be near impossible except perhaps for a few hospitals and hotels; it is not an option for libraries. The same can be said for vacuum chambers. It is no surprise that in frustration institutions turn to strong and relatively inexpensive pesticides as a last resort when their collections are being consumed at such an alarming rate. The goal should be to offer some alternatives that are practical for scarce resources, which can work, and which don't put staff at risk of exposure to irritants and known carcinogens. The goal will also include avoiding long term contamination of equipment and collections.
- **Mutual support:** Collaboration between institutions in Uganda, with the aim of not only producing the best WDL content possible but to promote future mutual support in a number of areas among institutions that can use all the support they can find, is a positive for disaster response as well.



## WDL UGANDA PARTNER CONSERVATION ASSESSMENT FORM

Please fill out the form as completely as possible for each item to be scanned.

Item treatment # \_\_\_\_\_

Item identification #: \_\_\_\_\_

Item title: \_\_\_\_\_

Item date: \_\_\_\_\_

Custodial institution \_\_\_\_\_

Contact person: Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Format (circle one): Book Paper Photo Other \_\_\_\_\_

Existing housing: yes/no

Recommended housing: Folder (paper)

Polyester folder

Wrapper

Box

Pamphlet binder

Encapsulation

Other \_\_\_\_\_

Condition:

\_\_\_\_ Surface dirt

\_\_\_\_ Accretions

\_\_\_\_ Tears that affect text/image

\_\_\_\_ Losses to be filled

\_\_\_\_ Broken binding

\_\_\_\_ Restrictive binding

\_\_\_\_ Detached boards

\_\_\_\_ Creases/folds

\_\_\_\_ Mold obscuring text

\_\_\_\_ Insect damage

\_\_\_\_ Other contamination

\_\_\_\_ Distortion or curling

\_\_\_\_ Brittle paper

\_\_\_\_ pH reading (\*if taken)

\_\_\_\_ Pages loose



# Selection, Care & Safe Handling of Collections Materials for the Digitization Process: WDL Kampala, Uganda

Some materials chosen for a digitization program may receive more handling during the image capture process than they have cumulatively received in all their previous existence. Therefore, an item's ability to withstand the handling required for digitization must be thoroughly understood when the selection process is applied to a group of collections materials. Will digitization be too damaging to an item? How can we tell if a document will survive the process? Below are some suggestions when undertaking the important tasks of selecting items for inclusion in Uganda's contributions to the content of the World Digital Library, and for ensuring their safety and longevity before, during and after the digitizing process.

## Staff Protocol and the Scanning Environment

The principal environmental conditions to be monitored in a scanning center are **light levels, humidity, temperature range, cleanliness, space, and security**. Some of these conditions may be easier to control or modify than others. WDL staff may be asked to contribute their ideas to resolve these issues. All staff should be aware of the importance of each of these environmental and design aspects within a functional scanning center.

### Light Levels

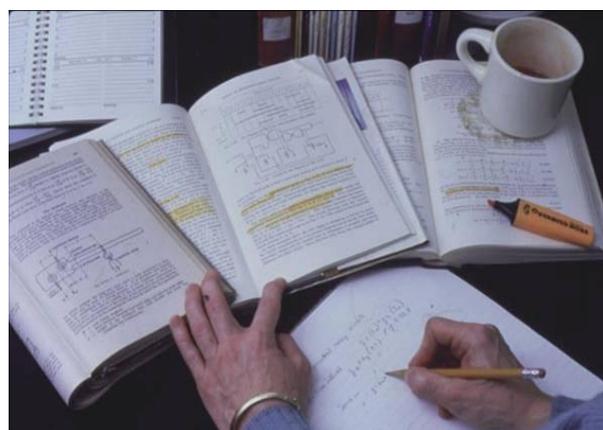
The DigiBook SupraScan II is built to safely and quickly scan bound and unbound documents. High light levels and heat can damage collections materials; the DigiBook SupraScan is designed so that its LED lighting technology does not emit UV or infrared light rays which are damaging to paper. Also, the heat level that results from the LED lighting is very low. Light that enters through exterior windows should be blocked through use of curtains, shades or other light barriers (UV film) as much as possible while collections materials are present in the scan center.

### Temperature and Humidity

If the room where the equipment is installed is climate controlled, the humidity ideally would range between 35% and 50%, and the temperature would be maintained below 72 degrees Fahrenheit (22 degrees Celsius). However, in tropical climates, such control may not always be possible, in which case the slow but continuous circulation of air becomes much more important. A portable fan in the scanning area, set on low, would be adequate for improving the collections environment.

### Cleanliness

All areas where scanning is being performed should be kept clean and free of clutter. Dust brushes and cleaning cloths should be available to staff for them to maintain clean surfaces in the scanning center. To avoid additional sources of risk to collections materials and to expensive equipment and resources, no food or drinks should be allowed in the scanning center. Staff members should be aware that frequent hand washing is



essential to keep natural oils of the skin from affecting paper-based materials. Cotton gloves should be made available for handling certain types of materials that may suffer from handling or smudge easily, for example, photographs and polyester encapsulated materials. Personal belongings that are not part of the scanning process should be stored away from the work area. Ballpoint ink pens or ink markers should not be allowed near collections materials; pencils are the preferred writing tool in the scanning center.

### **Space**

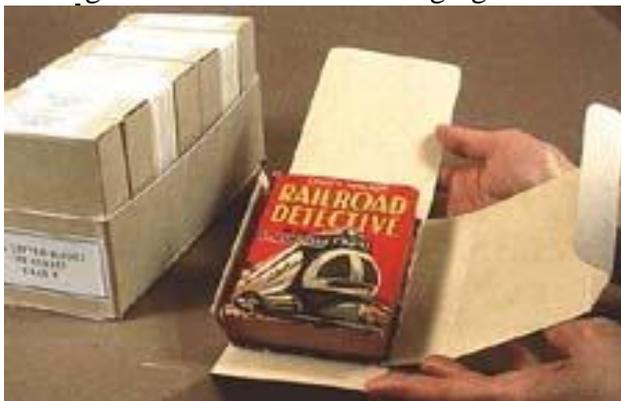
Ideally, the standard for safe handling of collections materials is to have available approximately 6 times the surface area of an item available for “landing space,” that is, where the item will be placed when not on the scanner bed. It may be necessary to acquire extra tables to reach this goal. If it is not possible to find that amount of space, then staff should be always aware of the essential responsibility they have to keep what space they do have available clear of other items at all times. Only one collection item should be in the immediate scanning area at a given moment. When the scanning of one item is complete, that item should be returned to its secure storage space, or placed away from the image capture space, before another item is brought to the scanner.

### **Security**

To the maximum capabilities of the NLU, the security of the equipment and collections in the scanning center should be the first priority as the WDL project is planned and undertaken. The monitoring capacity of the host institution should be fully understood, and any weaknesses in security planning should be addressed and corrected, before the initiation of the project. Special cabinets that lock should be available for all the collections materials on loan to the WDL; collections materials should be kept under lock and key when not in use or when staff is not present to watch over them.

## **Protecting documents in transport to and from the scanning station**

Protective enclosures (also referred to as “ housings”), ideally made from acid-free archival-quality materials, are an essential part of the planning and execution of the digital process. They are the first and most important line of defense against physical damage from handling, accidents, heat, light, dirt, and sometimes water. All collections items will have an improved longevity with proper housing, and good quality enclosures can serve to protect their contents for several decades or longer. Most books, except for the thinnest ones, will be best served by either a clamshell style box, or a 4-flap enclosure. These can be purchased as pre-made, with inserts added to ensure a close fit. They can also be fashioned using archival card stock or binders board, along with cloth of a strong nature to serve as the hinging material.



Flat documents will benefit greatly from a number of options. Polyester folders and encapsulations (Mylar and Melinex are two brand names for this material) are extremely useful for the protection of more fragile documents in the selected group, with the added benefit that the item can be viewed without taking it out of its enclosure. However, not all

scanners can accommodate the glare that polyester film causes to the image, so documents may need to be removed from their polyester enclosure for scanning. When this is done, great care must be taken to avoid damage to a fragile document within, because the polyester film generally creates an electrostatic “pull” on the item. This bond between the paper and the polyester must be broken to safely move the item in and out of the seal. The best way to break the electrostatic charge is to fold the polyester film back at the sharpest angle possible. [\*Remember that clear polyester enclosures smudge easily if touched by fingers, therefore the wearing of cotton gloves is recommended when handling this type of material. Because cotton gloves deaden the sensation in fingers, however, it may also be best to remove the gloves for handling the fragile paper documents themselves.]

Archival quality paper folders are also a wonderful way to protect a document in transport. The folder itself can also be used to flip the document over, if both front and back of the sheet need to be viewed. Handling the folder for turning the document over, rather than having to touch the item itself, helps minimize risk of damage to the item. For stacks of documents, boxes made expressly for this purpose are beneficial, as well as pre-made pamphlet binders that accommodate the thickness of a stack of sheets. As the name suggests, pamphlet binders are also the enclosure of choice for small and thin bound items: pamphlets, manuals and magazines, for example.

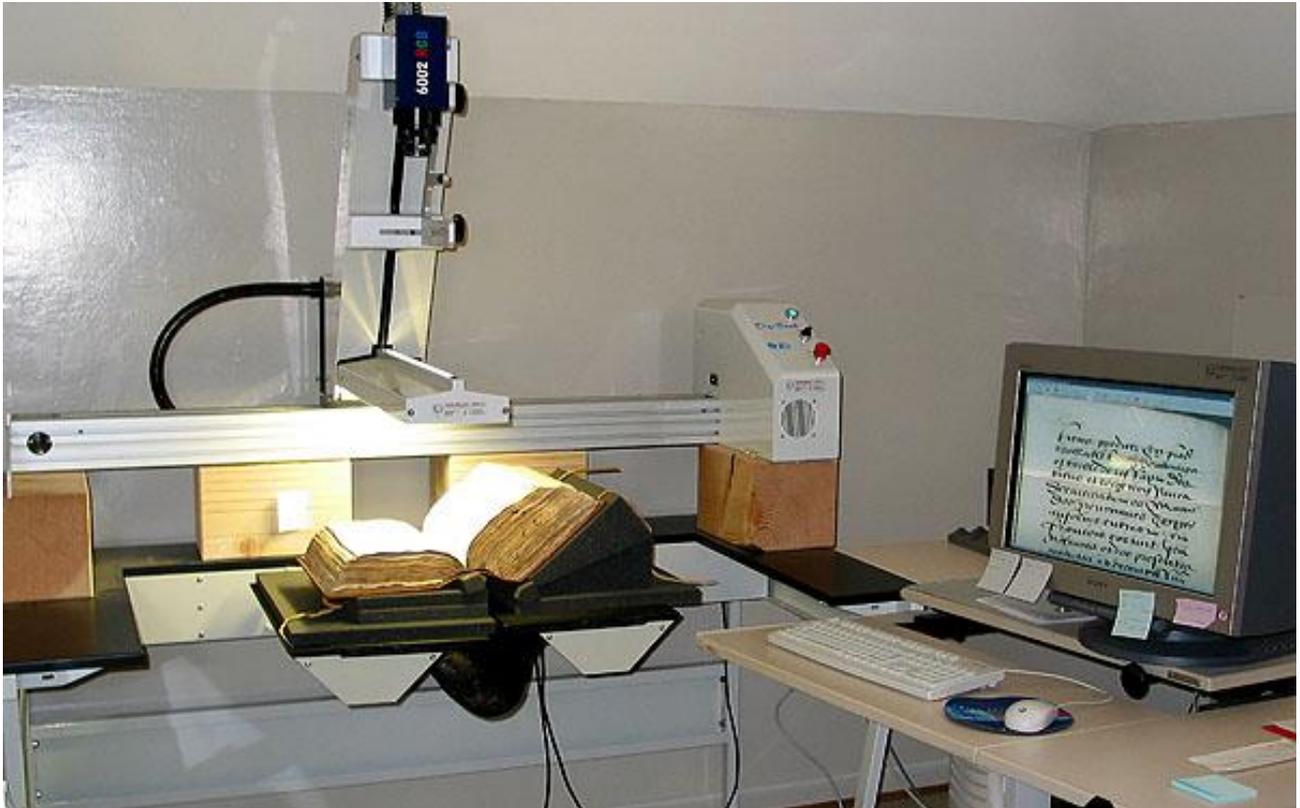


## **Documents and the DigiBook SupraScanII**

The DigiBook SupraScanII meets all standards for safe scanning of collections materials, and has been designed with preservation concerns in mind. As mentioned above, the LED lighting used during image capture does not emit heat that potentially ages paper. No other major light sources need to be, nor should be, utilized in the area of the scanner when collections are present.

## Books and other bound documents

The bed of the scanner has a split in the platform which is adjusted to support books as a cradle, with the lower side of the platform flat and supporting the side scanned. The raised side of the



book can be open to approximately a 110 degree angle. If the book safely opens to a wider angle, or even if it opens flat, the adjustable bed can be manually set to accommodate the needs of the document. The movable glass plate should never rest with its full weight on the book, and should only rest on the book lightly if the bound item comfortably opens to a 180 degree angle. Most bound materials are not capable of such an opening.

## Single-leaf documents



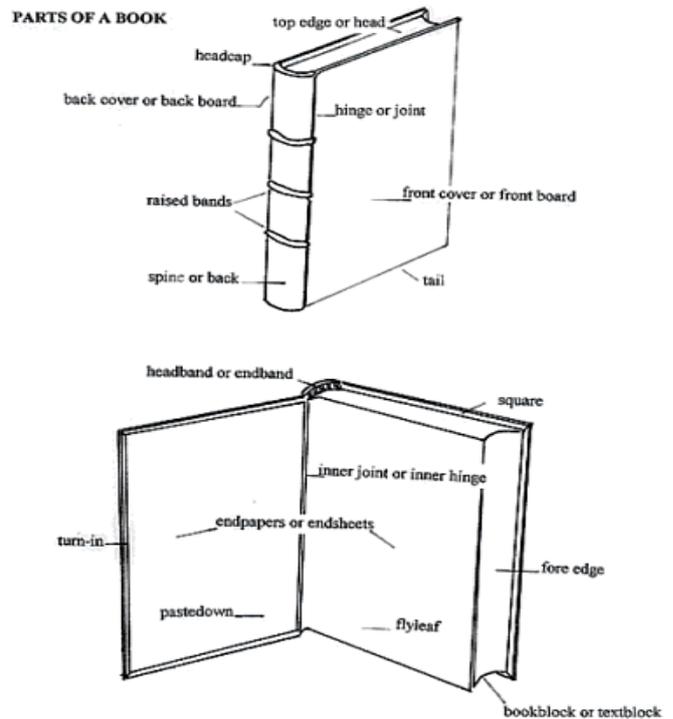
Flat documents (single leaf documents, maps, photographs, etc.), for safety and ease of handling, should rest upon another support of cardstock or mat board, cut to a dimension larger than the document itself. One piece of neutral color board, cut to the maximum size capacity of the SupraScan II, 24  $\frac{3}{4}$ " x 36  $\frac{1}{4}$ ", should be sufficient for use with all flat documents during scanning. A folder may be used to move the document from its storage location to the bed of the scanner. Also, another piece of support paper or board, as long as it is strong enough to support the item being digitized, can also be utilized.

To pick up the document once the scan has been performed, use either the folder or a strong support piece such as a “spatula,” making sure that the handler is able to get under at least a corner of the document, and can then safely slide the original onto the support for transport.

There will never be any need to invert a document for image capture, as the SupraScan II utilizes an overhead camera. Since inversion of fragile paper-based materials can cause them damage, overhead image capture is considered the safest choice for digitization of books and documents.

### **Selection of books and bound documents suitable for scanning**

A book or other type of bound item must be capable of opening without damage to approximately 110 degrees. Books that do not open at least that far may be damaged by forcing them open beyond their resistance point, and if they contain brittle paper, the damage will occur to both the binding and the textblock. If a book resists staying open to 110 degrees during the scanning process, the glass plate attachment of the DigiBook may be used to block the cover from closing again, as long as only minimal pressure is needed to maintain the binding aperture. Books that do not safely open to 110 degrees are not considered good candidates for scanning with the currently available technology. Unless their sewing is modified to allow for a more relaxed opening, those books should probably be removed from the list of proposed items for digitization. [\*A conservation binding specialist may be able to alter the sewing structure of a book just slightly to allow access to the information; this can only be decided on a case-by-case basis. Since damage can also be caused by sewing alterations, the decision to intervene in the book’s structure must be considered carefully. If the sewing is a unique feature intrinsic to the item in question, do not intervene with a treatment that changes this feature.]



### **Selection of single-leaf documents for scanning**

Because single sheet documents don’t have to function in three dimensions as a bound item must, they are easier to stabilize and digitize safely. As outlined above, there are a number of ways to protect a loose document. Mending tears or surface cleaning of dirt deposits on these documents is also easier because the preservation specialist can work on a flat surface in two dimensions. In some cases when the paper is extremely brittle, the document can still be safely moved and turned over without flexing the paper.



In most cases, documents will show signs of vulnerability to damage, not having benefitted from the protective nature that a binding structure and book covers provide. Dirt deposits on their surfaces will need to be safely dry-cleaned, creases may need to be humidified and flattened, and folds may have become weak or broken over time, and therefore will need to be mended and reinforced in preparation for the scanning process. The type of media (ink, pencil, pigments, etc.) exhibited on these documents will determine the stabilization treatments chosen for them.



### **A word about photographs**

Photographs are quite easy to scan and can be handled quite safely, in general. Wearing cotton gloves or handling images by their edges is always recommended when handling photographs, as the oil from fingers can cause smudges and discoloration of the image. Never touch the image surface of a photograph, even with gloves on. Curled photographs on paper, provided the curl is not extreme, can be flattened by a photo conservator (or under the guidance of one) using overall gradual humidification. If photographs are mounted on boards, they should never be pressed for flattening, as this could damage both the mount and the photograph. Color prints and silver gelatin prints (the two types of photos most common

in twentieth century collections) will respond most readily to flattening; all other types of photographs should be treated only by a photo preservation specialist, as they are very delicate in composition.

### **After the scanning is complete**

Once an item has been scanned, the attention paid to the item after the fact is very important as well. If the item has arrived at the scanning center in a protective enclosure, make sure that it is rehoused in the same way afterwards. If it lacks a protective enclosure and there are resources available, see that a box or folder is provided or custom-made for it. These enclosures will extend the longevity of an item, and in many cases may be the only (or best) preservation measure that can be taken for the item. Ensure that the item is stored in a secure area, where the environmental factors are not damaging to collections items. See that WDL collections, once they have left the scanning queue, are kept away from other activity that can cause them damage.

[Prepared by Alan Haley, Conservation Division, Library of Congress, January 2010]