

PRESERVATION SITE SURVEY REPORT for MAX CHAMBERS LIBRARY UNIVERSITY OF CENTRAL OKLAHOMA



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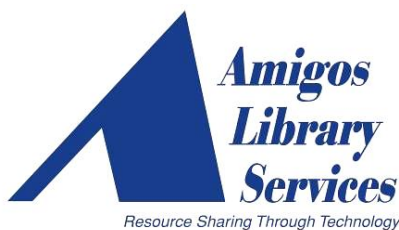


Table of Contents

I.	Executive Summary	1
II.	Introduction.....	2
III.	Physical Structure	2
IV.	Collection Condition.....	20
V.	Preservation Staff and Activities	33
VI.	Disaster Planning and Security	37
VII.	Future Options for Preservation.....	38

List of Photographs:

Figure 1:	Gap in caulk.....	3
Figure 2:	Caulk pulling away from the wall	4
Figure 3:	Dirt at the base of ground floor windows.....	5
Figure 4:	Trees touching the building	5
Figure 5:	Book showing two distinct levels of light damage.....	11
Figure 6:	Dusty microfilm	15
Figure 7:	Special Collections cage, showing materials on floor because of a lack of storage space	16
Figure 8:	Microfilm and periodicals shelved together	17
Figure 9:	Plant in Special Collections.....	19
Figure 10:	Books showing spine damage and poor quality repairs	22
Figure 11:	Inappropriately shelved serials	23
Figure 12:	Self-bound periodicals.....	24
Figure 13:	Folded maps that can get caught on the flat files.	26
Figure 14:	Acidic paper sleeve splitting at the bottom	27
Figure 15:	Jacket made of damaging plastic	28
Figure 16:	Polyester microfilm	29
Figure 17:	Acetate microfilm.....	30
Figure 18:	Stacks of well-shelved material on the third floor.....	32

List of Tables – Temperature and Humidity:

Table 1: Temperature and Relative Humidity..... 7

List of Tables – Light:

Table 2: Recommended Light Levels 12
Table 3: Light Levels (Lux)..... 12

List of Appendices:

Appendix A: Monitoring Temperature and Relative Humidity
Appendix B: Protection from Light Damage
Appendix C: Preservation/Conservation Suppliers and Services
Appendix D: Emergency Salvage of Moldy Books and Paper
Appendix E: Selecting Preservation Supplies: Some Basic Guidelines
Appendix F: Spine-Replacement
Appendix G: Tip-In Replacement Pages
Appendix H: Hinge Tightening (From BBR Packet)
Appendix I: Preservation: A Selected Bibliography
Appendix J: Amigos’ Disaster Plan Template
Appendix K: Minnesota Historical Society Disaster Plan
Appendix L: Integrated Pest Management
Appendix M: Choosing and Working with a Conservator
Appendix N: Protecting Books with Custom Fitted Boxes
Appendix O: Phase Box Directions (From Lubbock Class)
Appendix P: Clamshell Box Directions (From Lubbock Class)
Appendix Q: Protecting Books and Paper Against Mold
Appendix R: Temperature and Humidity Readings from Dataloggers
Appendix S: Cost Analysis for Book Repair (From BBR Packet)
Appendix T: Library Binding Inspection Guidelines
Appendix U: Map of Max Chambers Library

I. Executive Summary

The following report contains information and recommendations concerning preservation management and other preservation-related topics based on a site survey visit to Max Chambers Library at the University of Central Oklahoma in Edmond, OK on March 24-25, 2010. The report contains an overview of current conditions and practices in the library, and recommendations on future options for preservation management.

Overall, library materials appear to be in good condition, and staff have done some work to preserve the collections. In order to take advantage of this situation, such activities should be systematized through the implementation of policy and procedure, and coordinated by the formation of a preservation plan. This will help the library achieve successful library-wide preservation projects.

The major preservation issues in the library include environmental instability, light damage from fluorescent bulbs, a lack of a disaster plan, and a shortage of space for Special Collections.

The major recommendations in this report include:

- Implementing an environmental monitoring program to help stabilize the building environment.
- Placing fluorescent shields on all fluorescent bulbs in collections areas.
- Expanding the storage space for Special Collections, as well as their budget for purchasing archivally sound housings.
- Reconsidering the book repair program to formalize when library binding is appropriate and when in-house repair is appropriate.
- Creating a disaster committee and writing and implementing a disaster plan.

II. Introduction

On March 24-25, 2010, Rebecca Elder, Amigos Adjunct Preservation Field Services Officer visited the Max Chambers Library at the University of Central Oklahoma in Edmond, Oklahoma to conduct a site survey and staff interviews relating to preservation management. The site visit included a physical structure survey, a general collection assessment overview, an examination of preservation staffing and activities, and interviews with library staff representing a number of different departments on disaster planning, security, and preservation management issues at the library.

Sections III - VI of this report describe the present state of the library in terms of its physical structure, the overall condition of the collections, current preservation activities, and disaster planning. Included in each section is advice on correcting problems and/or advocacy for specific policies and procedures. Section VII, Future Options for Preservation Management, is concerned with setting achievable goals and objectives to most effectively and efficiently maintain the collections, and can aid the library in setting both short- and long-term goals.

III. Physical Structure

One of the most important components of a library's preservation program is to ensure the "health" of the collections within the library's physical structure. Poor environmental conditions are one of the leading causes of damage to library materials, second only to damage caused by use and handling of materials. Environmental considerations include the conditions under which the collection is stored (temperature, relative humidity, light levels, dust and pollutants), and the possibility of man-made and natural disasters and the library's ability to respond to these (a topic covered later in this report).

By conducting a tour of the library facility and interviewing library staff, specific positive and negative aspects of the physical structure were observed and noted. A number of points of interest about the physical structure follow.

A. The Building

The building is the first defense against the outside environment and all the potential hazards: weather, pests, water, pollutants, etc. Maintaining the roof, foundation, building seams, gutters, drains, will better your investment in preserving the building and the contents within.

The Max Chambers Library was built in 1968. In 1997, a large addition was added to the north side of the building, approximately doubling the available library space. The four story structure (plus a basement) is large but structurally sound with a flat roof.

Condition of Roof and Drains

The older part of the building has a modified bitumen roof, while the newer part has a tar and gravel roof. To the best of the library's knowledge, neither roof has been replaced. The building has internal drains, which are cleaned as needed. There has been an instance when the drains clogged, leading to water in the basement.

To the best of the library's knowledge, there have been few re-occurring leaks from the roof. The most notable was a leak in the 4th floor ceiling that damaged a range of microfilm. The leak has been fixed, however, and appears to no longer be a problem. No water-damaged ceiling tile was noted.

I recommend to:

- Inspect and clean the roof and drains regularly.

Seals around Windows and Doors

Having good seals around windows and using weather-stripping at the bottom of doors will make it more difficult for pests to enter the building, and for the conditioned air to escape from the building. There are isolated gaps in window caulking, as well as caulk pulling back from the windows on the north wall.

Daylight is visible between the doors on the north entrance. In addition, the library reports that the north entrance leaks, likely due to caulk issues. Physical Plant has inspected the area and plans to repair the damage.



Figure 1: Gap in caulk



Figure 2: Caulk pulling away from the wall

To better seal the library, I recommend the following:

- Weather-strip doors as necessary
- Caulk windows with gaps or pulling.
- Repair north entrance

Outside Grounds

Pest infestations can be contributed to by mulch and plant material build-up near and around the perimeter of the building. The best design would be to leave a three to six foot perimeter of gravel or cement around the building. In addition, pests are attracted to trash and large dumpsters near library entrances. The day of the survey the outside grounds were in generally good condition, although much dirt has built up around the bases of the windows. Also trees are touching the building on the northeast corner and the south side. This encourages pests to enter.



Figure 3: Dirt at the base of ground floor windows



Figure 4: Trees touching the building

To continue to discourage insects and pests from entering the building and for safety reasons, I recommend to:

- Clean around the building and keep a three to six foot perimeter of gravel or cement around the building.
- Trim trees and landscaping to prevent them from touching the building.

Book Drop

The library has two book drops, one in the library's parking lot and the other in a dormitory area. Both are open twenty-four hours a day, allowing patrons to drop material during all hours. The use of book drops can be quite damaging to materials, and the library has been able to minimize the damage by using book drops with spring loaded bases. The staff empties the book drop four times a day Monday through Thursday, and three times a day on Friday, Saturday and Sunday. Other considerations may be to:

- Place padding, such as foam rubber or a blanket in the bottom of the book drops to protect books when they are placed in the drop.
- Require all non-book materials such as videocassettes to be returned at the circulation desk.

B. The Building Environment

Temperature, relative humidity, pollution, and light all have a great impact on the rate of deterioration of library collections. These factors increase deteriorating chemical reactions, mold, warping, insect infestation, fading, and embrittlement. A good building environment will insure the longevity of your collections.

Temperature and Relative Humidity

The Heating, Ventilating, And Air Conditioning (HVAC) unit(s) can be an important component to a good building environment. There are two HVAC systems in the Max Chambers Library, one controlling each half of the building. The current HVAC units were installed when each half of the building was built. They are chiller/boiler units fed by a central power plant. The HVAC is monitored by the University's contractors, Johnson Control. The unit has only temperature control. The unit runs 24 hours, 7 days a week, 365 days a year. The system does not offer dehumidification and was not designed for humidification. Because there is no control in the HVAC system over the relative humidity, the indoor RH will vary, following the outdoor RH. During the winter, however, the use of heat can significantly lower the indoor RH. The only sure way to determine the performance of the HVAC is through initiating an environmental monitoring program.

The library does not currently keep records of daily temperature and relative humidity levels. On the day of the site visit, temperature and relative humidity was recorded throughout the library.

Table 1: Temperature and Relative Humidity

Date/Time	Library Section	Temperature	Relative Humidity
Outdoors			
3/24 9:45-10:30 a.m.	East Entrance	60.9	68.2
	Northeast Corner	61.5	71.0
	South Entrance	63.1	67.3
	Southwest Corner	60.2	74.2
	Loading Dock	61.5	70.1
	West Door	62.6	67.7
	Northwest Corner	64.9	67.0
	North Side	63.6	67.5
	Northeast Corner	69.9	43.5
3/24 5:00-5:30 p.m.	East Entrance	68.1	43.2
	Northeast Corner	70.3	44.7
	South Entrance	75.3	44.6
	Southwest Corner	77.2	45.3
	Loading Dock	68.3	45.6
	West Door	67.8	49.0
	Northwest Corner	65.1	52.2
	North Side	64.9	50.5
	Northeast Corner	65.8	46.3
Indoors			
3/24 11:00 a.m.	Microfilm Newspapers	75.5	40.1
3/24 2:45-3:15 p.m.	Backfile Periodicals	72.3	41.1
	PER TH7800		
	PER TH7700.L5	72.1	40.0
	PER N1.A243	71.6	40.5
	PER HN1.J6	73.2	39.5
3/25 9:00-9:15 a.m.	Microfilm Newspapers	71.2	35.1

Date/Time	Library Section	Temperature	Relative Humidity
3/25 9:00-9:15 a.m.	Backfile Periodicals PER TH7800	70.3	35.1
	PER TH7700.L5	71.3	34.5
	PER N1.A243	68.9	34.9
	PER HN1.J6	68.7	36.1
3/25 9:15-10:00 a.m.	3 rd Floor		
	BF 121.W27	72.8	31.3
	E173.P36 1940	72.5	31.5
	HD 4148.K39	72.6	31.4
	HX1.Y4 1968	72.6	31.8
	Maps	72.6	30.4
	T15.M8	72.3	31.0
	PS3555.L625.595	70.1	32.1
	MT6.M267 M9	70.3	33.3
	JC599.U5W63	70.8	32.7
	JUV 363.72 Z67t	73.0	30.5
3/25 1:45-2:15 p.m.	BF 121.W27	74.3	25.7
	E173.P36 1940	73.9	25.6
	HD 4148.K39	73.5	25.0
	HX1.Y4 1968	73.4	24.7
	Maps	73.4	23.6
	T15.M8	72.1	25.9
	PS3555.L625.595	69.8	26.1
	MT6.M267 M9	71.0	26.7
	JC599.U5W63	71.4	27.4
	JUV 363.72 Z67t	72.8	25.8
3/25 2:20 p.m.	Special Collections	73.0	23.9
3/25 2:30 p.m.	Government Documents	74.1	23.0
3/25 2:45 p.m.	Reference	74.8	22.1

Dataloggers were placed in four key areas of the library. Those results are attached as Appendix R. This data, while by no means statistically significant, seems to corroborate the belief that the temperature is slightly high. The humidity was acceptable during the rain on the first day of the visit, but dropped dangerously after the rain stopped. A stable temperature of 68-70° F is considered a good compromise between what is best for library materials and what is tolerable to people. Low temperatures and a stable, median relative humidity (between 30% to 50%) slow the chemical deterioration that causes embrittlement. Low humidity (20%) can also cause a form of embrittlement called cross-linking. However, because of potentially dry conditions in the winter, if the library chooses to provide humidification (whether throughout the building or to individual spaces), a set point of 20-25% might be more realistic and easier to achieve.

For both temperature and RH, stability should be the goal. Excessive daily variations can stress materials, causing covers and paper to warp and cockle. Daily fluctuations are often minimized by continuous operation of the HVAC system (i.e., 24 hours a day, 365 days a year). Seasonal fluctuations may be more difficult to control, but stability within a particular season should be achievable (such as 72° in the summer and 68° in the winter). In order to monitor the existing system, I recommend the library:

- Monitor the temperature and relative humidity using reliable equipment such as a high/low thermometer, sling or aspirating psychrometer, electric/digital temperature and humidity meters, hygromograph, or datalogger (Appendix A).
- Compare the findings against the system settings and balance the system when needed.

The library owns eight Hobo dataloggers. These should be deployed throughout the library, with three placed in Special Collections (reading room, basement storage and cage), two on each of the third and fourth floors, and one in the first floor reference area.

Air Quality

HVAC filtration should remove most particulate and provide good air quality with low pollution levels (i.e., sulphur dioxide, nitrogen dioxide, ozone). Currently, the library regularly replaces filters, which helps provide a good environment. No testing was done on atmospheric pollutants during this survey but there do not appear to be any areas of concern.

Light

All visible light can quickly damage library materials and can cause fluctuations in temperature and humidity as well. Light damage is an accumulation of high light levels over a period time that can cause fading, discoloration and deterioration of bookcloth and paper. The two strategies used to reduce light damage are:

- Keep light levels low by using low-ultraviolet (UV) fluorescent lamps or UV filter sleeves designed to provide vertical illumination at 2 – 5 footcandles in storage areas and 30-60 footcandles in reading areas.
- Reduce the amount of time materials are exposed to high light levels, especially during exhibits.

There are two light sources in the library: window and lamps. Sunlight creates high infrared (IR) radiation and ultraviolet (UV) radiation, which is the portion of the light spectrum most damaging to library materials. With lamps, fluorescent bulbs produce high levels of UV radiation, while, incandescent lights emit a lower ultraviolet (UV) radiation. Incandescent lights, however, emit considerable amounts of infrared (IR) radiation, which can cause materials to heat up, and they generate a lot of heat which may affect the room temperature. There are large windows in most areas of the library. The placement of the shelves seems to be effective, as direct sunlight was not observed striking the collection in most areas. There is a considerable amount of light damage, particularly in the circulating collections.



Figure 5: Book showing two distinct levels of light damage

This is likely due to the fluorescent lamps which are used throughout the building. Light levels from 81.6-695 footcandles (fc) were recorded during the visit. March 24 was cloudy, and March 25 was sunny. See Table 3 for more detail.

Table 2: Recommended Light Levels

Type of Space	Light Level Range
Storage	10-50 lux (1-5 fc)
Display	50-150 lux (5-15 fc)
Reading/work areas	300-600 lux (30-60 fc)*

*Short exposures are recommended for paper, photographs, and other light sensitive materials.

Table 3: Light Levels (Lux)

Date/Time	Section	Light level (Lux)
Outdoors		
3/24 9:45-10:30 a.m.	West Entrance	3870
	Northwest Corner	3830
	North Entrance	3630
	Northeast Corner	2450
	Loading Dock	599
	East Door	797
	Southeast Corner	8630
	South Side	7160
	Southwest Corner	Out of Range
3/24 5:00-5:30 p.m.	West Entrance	8350
	Northwest Corner	12020
	North Entrance	Out of Range
	Northeast Corner	Out of Range
	Loading Dock	5304
	East Door	10210
	Southeast Corner	14530
	South Side	11480
	Southwest Corner	8770
Indoors		
3/24 11:00 a.m.	Microfilm Newspapers	413

Date/Time	Section	Light level (Lux)
3/24 2:45-3:15	Backfile Periodicals PER TH7800	231
	PER TH7700.L5	196.9
	PER N1.A243	247
	PER HN1.J6	271
3/25 9:00-9:15	Microfilm Newspapers	379
	Backfile Periodicals PER TH7800	236
	PER TH7700.L5	154.1
	PER N1.A243	255
	PER HN1.J6	246
3/25 9:15-10:00	3 rd Floor	
	BF 121.W27	316
	E173.P36 1940	303
	HD 4148.K39	456
	HX1.Y4 1968	465
	Maps	687
	T15.M8	208
	PS3555.L625.595	241
	MT6.M267 M9	695
	JC599.U5W63	192.6
	JUV 363.72 Z67t	973
3/25 1:45-2:15	BF 121.W27	286
	E173.P36 1940	316
	HD 4148.K39	465
	HX1.Y4 1968	542
	Maps	632
	T15.M8	204

Date/Time	Section	Light level (Lux)
	PS3555.L625.595	241
	MT6.M267 M9	118.2
	JC599.U5W63	238
	JUV 363.72 Z67t	499
3/25 2:20	Special Collections	230
3/25 2:30	Government Documents	81.6
3/25 2:45	Reference	198.5

Most of the levels were within recommended limits, however the large amount of light damage seen in the library indicate that the ultraviolet light from the light fixtures is a great concern. Light damage—which is cumulative and irreversible—can be reduced by:

- Keeping lights off when the building is closed/unoccupied.
- Using curtains, blinds, or UV filtering products on windows facing stack areas (See Appendix C for a list of suppliers).
- Using UV filtering sleeves on multi-bulb fixtures directly above collections (See Appendix C for a list of suppliers)

Housekeeping

Proper cleaning and housekeeping can also help remove dust and dirt. Dirt and debris can absorb moisture and help sustain certain insects, such as book lice. Regular cleaning, vacuuming, damp-mopping, and dusting shelves can help prevent dust and dirt from collecting, ultimately soiling materials and encouraging insect infestations. Insect carcasses also attract other insects.

On the day of the survey, the library was found to be quite clean, although dust was found in several areas, notably in periodicals and some areas of the third floor stacks and government documents. The library seems to do a good job with its regular schedule of housekeeping, and the staff of third floor stacks (where the entire circulating collection is stored) does vacuum the books every summer.



Figure 6: Dusty microfilm

I would recommend the housekeeping staff:

- Clean around all windows and doors to allow for easy visual inspection for leaks, cracks, and active pest problems etc.
- Dust/vacuum collections and shelves in all areas on an annual basis.

Space Allocation

Collections are stored on four floors of the library, as well as in the basement. The reference collection is housed on the first floor. Special Collections and government documents occupy the second floor, and special collections also has some storage in the basement. The circulating collection is housed on the third floor, and periodicals are housed on the fourth floor. There appears to be adequate room for staff offices and processing. At the moment, there is adequate space for all areas except Special Collections, which needs much more storage space.



Figure 7: Special Collections cage, showing materials on floor because of a lack of storage space

At the moment, in periodicals and government documents, microfilm is interfiled with standard sized materials, making for a very inefficient use of space. Likewise, in circulating collections, oversized materials do not have their own section, which means that fewer shelves can fit in a range.



Figure 8: Microfilm and periodicals shelved together

In response to the growing number of books the library is weeding, when possible. Because the library does not foresee any new additions or building proposals in the near future, emphasis has been placed on existing space, to utilize it more efficiently. As government documents shrinks due to the wider availability of electronic resources, special collections will expand into that space. Two floors of the building are also built to accommodate compact shelving on the north side. Undoubtedly, that will be an asset as the collection expands.

I recommend to:

- Create separate areas for microfilm and periodicals to increase available shelving space. Perhaps if this is accomplished, an area of the fourth floor can have temporary walls erected to provide secure storage for Special Collections materials that are currently stored in the basement.
- Evaluate the amount of space allocated to the different parts of the collection and determine based on supply and demand the amount of space required. This may mean utilizing a more aggressive weeding program in those areas with low use and demand, to allow materials in high use and demand more space.

- When the circulating collections require more space, create an oversized area to allow more shelves to be put on the floor.

Pests

Several pests are considered enemies of library and archival material: silverfish, roaches, termites, moths, beetles, and rats. Some are considered more of a health risk: roaches, rats, and birds; while others are indicators of a much larger problem with pests or mold: spiders, snakes, and book lice. To monitor for insect infestations in collection spaces and in donations, sticky traps can be used. Staff, particularly maintenance and shelvers, should be aware of the potential for infestation and should be instructed to notify the appropriate person(s) immediately upon discovery. In order to reduce the chances of insect infestations, there are a number of strategies the library can use:

- Caulk, seal, or weather-strip points of entry (cracks, gaps, windows, doors) and keep these areas clean so as to monitor pest activity.
- Keep the outside perimeter of the building clean so as not to attract insects.
- Maintain good housekeeping practices and most importantly, remove all corrugated boxes, trash, and food as they provide perfect nesting materials and food for pests and effect the indoor air quality.
- Use sticky traps in select areas of the library to monitor pest activity and in boxes of donations/gifts to determine if the material is infested before you bring it into the library.
- Use Integrated Pest Management (IPM) techniques instead of chemical sprays to control pests, primarily because the overuse and misuse of chemicals can lead to chemical tolerance of pests, and human health hazards.

On the day of the visit, zero instances of insects and other pests were found during a visual inspection of the building, while only a few spiders and dirt daubers were seen outside the building. The library reports annual infestations of wasps, ants and ladybugs. Currently, the library does not monitor for pests. The only type of pest control used by the library is a monthly spray by a pest control contractor. Gifts are inspected before introducing them into the collection. Book sale materials are not stored in collection areas. There are large numbers of plants in many collections areas of the library. These invite pests into the collection, and should be removed. The best practice is to have no plants in the library. However, the library may consider allowing plants in non-collections areas like the atrium lobby.



Figure 9: Plant in Special Collections. This plant poses multiple dangers to the collection. First, it can draw pests. Second, it can damage materials stored in this flat file if it gets closed in the file's drawer.

To ensure there is no hidden pest problem, I would recommend the following:

- Remove trash regularly
- Remove all plants from the library.
- Keep all windows and doors clean so as to monitor pest activity.
- Keep the outside perimeter of the building clean leaving a three to six foot perimeter of gravel or cement around the building
- Use sticky traps in select areas of the library to monitor pest activity and in boxes of donations/gifts to determine if the material is infested before you bring it into the library.
- Consider using Integrated Pest Management (IPM) techniques to control pests.
- Continue encouraging students to not eat or drink in the library, as much as possible in a college setting.

Mold

If mold does occur, potential causes will be a problem with the HVAC system and/or moldy donations introduced into the collection. If the library is concerned about future mold growth, strategies to prevent an outbreak are as follows:

1. Run HVAC system 24 hours a day and have a backup plan in case the HVAC system goes down during the spring and summer months.
2. Use fans to increase air circulation during high humidity, because mold growth usually requires stagnant air. However, fans should be used with caution and not pointed directly on any mold-infested material, for it may spread it throughout the collection.
3. Contact a moisture control service to help dehumidify the library during times of high humidity or when the HVAC system goes out. (See Appendix C.) While the use of small dehumidifiers from the store is unlikely to have much affect, using them is also unlikely to do much harm (except for the amount of electricity they use). This is because humidity cannot be lowered in one area of the building; it must be lowered throughout the building. Even in a separate room, moisture enters the room from the rest of the building through the ceiling, walls, and cracks around the doors. In order to achieve any real gains in dehumidification, the room would have to be vapor sealed. Also, dehumidifiers generate heat, which may cause localized desiccation of the library materials they are intended to protect.
4. Inspect and discard any donations with mold. Introducing mold into the collection can spread quickly to the rest of the collection.

The library has had only one mold incident, to the best of their knowledge, which was related to a box of donated materials. To maintain a mold-free library, I recommend to:

- Inspect all incoming material and discard moldy items.
- Increase airflow during times of high humidity using fans.
- Have a back-up plan for when the HVAC system or electricity goes out. Refer to the Section on Disaster Preparedness for more information.

IV. Collection Condition

This section of the report is not intended to provide an item-by-item evaluation, but to provide a summary of the general condition of the collections, the damage most characteristic of the library's collections, storage, and handling practices. Even though individual items evaluated during this consultation may be in need of repair and used as an example in this report, it is ultimately the goal of this report to identify broad needs and solutions. Any special, rare, or unique items that require conservation treatment should be identified and evaluated by a conservator. See Appendix M on how to identify and select a conservator.

The library collection contains approximately 1,155,000 items, including, monographs, periodicals, microfilm, audiovisual, maps and government documents. Approximately half of the items in the collection are monographs. The library has a dedicated Special Collections area located on the second floor.

Overall, the collection is in fair condition. While it is an older collection, it is not so old that brittle paper has become a significant problem. The collection shows moderate signs of damage from use—such as spine damage. Also, compared to similar collections, the collection appeared to exhibit a moderate amount of evidence of poor quality repairs from the past. All of this indicates that the collection has been treated fairly well throughout its history. There are a large number of paperbacks in the collection. However, the library is moving towards an aggressive program of library binding that includes digibinding paperbacks.

A. Condition

Monographs

The circulating and reference collections of monographs are two of the largest areas of concern at Max Chambers Library. In general, they show much evidence of light damage and a considerable amount of spine damage as well. The spine damage is caused by removing the books from the shelves by pulling at the endcaps, and is exacerbated by the extensive light damage, which causes embrittlement of bookcloth. The circulating collections also display the most poor quality previous repairs, with large amounts of cloth book tape.



Figure 10: Books showing spine damage and poor quality repairs

Reference has a large number of books in poor condition. This is likely because reference books do not circulate, and therefore are never flagged for repair or binding.

I recommend to:

- Continue the library's aggressive library binding program for paperbacks and damaged books. Consider binding spiral bound books either before they are sent to the shelves or after a first circulation.
- As a summer project, inspect reference on a book-by-book basis, performing hinge tightening (see Appendix H) in the stacks, and pulling books for repair or rebinding. This is usually best done in the early summer, as summer is a lower time of use for collections. If the books are pulled and sent to the bindery in the summer, they should be back in time for the fall semester.

- If the library wants to save the paper dust jackets, it would be a good idea to use polyester covers for the dust jackets. Otherwise, the dust jackets will be damaged beyond repair after one or two circulations.

Serials

Serials are housed in two areas on the fourth floor. The first area is for current serials, and has a higher level of security to ensure that the periodicals stay in the library until they can be bound. These are generally housed in acidic magazine files. The second is for backfile periodicals. The periodicals are in generally good condition, however there are many unbound periodicals shelved on their tails in both areas. Because periodicals are often soft and floppy, these can develop permanent warping, if not supported completely.



Figure 11: Inappropriately shelved serials

Also, self-binding of periodicals with tape was a common practice in the past, although it is no longer being practiced. This structure is potentially damaging to the periodicals inside it.



Figure 12: Self-bound periodicals

To prolong the life of the serials collection, I recommend to:

- Shelf periodicals flat, if they cannot be completely supported to prevent permanent deformation.
- Replace acidic magazine boxes with acid-free boxes.
- Make more extensive use of magazine boxes in the backfile periodicals area.
- If self-bound periodicals are found waiting to be shelved, they should be sent to the library bindery for appropriate binding, since this indicates use.

Government records

There is a large government documents area on the second floor of the building. In general, this segment of the collection is in very good condition; however, in some areas it has the same problem with shelving of soft materials as periodicals.

I recommend to:

- Increase the use of magazine boxes and pamphlet binders to enhance safe shelving of softbound material.
- Keep materials off the top shelves. As there is no top to the shelving units at Max Chambers Library, materials on the top shelves are vulnerable to water damage from pipe leaks. Government Documents is the area of the library with the most materials on the top shelves.

Maps and Posters

There is a large map collection on the third floor. These appear to be in generally good condition, as the older and more fragile maps have been pulled and moved to Special Collections. There is a general feeling in the library that the maps collection is becoming less relevant as more cartographic information is being made available online.

There are some problems in the map collection. While the collection is housed in wonderful flat files, many of the maps are folded, and none of the maps are housed in map folders within the flat files. This means that it is quite easy for maps to get damaged as the files are opened and closed. Also some of the maps are encapsulated in plastic that is sealed with Magic™ Tape. This tape has a damaging adhesive, and should be removed from the collection.



Figure 13: Folded maps that can get caught on the flat files.

I recommend to:

- Unfold all maps to protect from damage, both in use and from the file cabinets.
- House all maps in map folders to provide support and protection.
- Remove all improper encapsulation.

Audio-visual

There is a circulating audiovisual collection on the third floor of the library that includes LP records, audiocassettes, VHS tapes, CDs and DVDs. In general, this material appears to be in good condition.

I recommend to:

- Replace acidic paper sleeves for LP records with stable plastic sleeves made out of polyethylene or polypropylene. Many of these paper sleeves are splitting, which means that they are no longer providing adequate protection for the records.

- Remove all plastic jackets in the collection, as these are made of a plastic which encourages deterioration in the materials it is ostensibly protecting.



Figure 14: Acidic paper sleeve splitting at the bottom



Figure 15: Jacket made of damaging plastic

- Ensure that all LP records are standing up straight on the shelves to prevent warping which interferes with playback.
- Shelf cassettes with the exposed tape down, to facilitate recovery in case of a disaster.
- Create a policy that all tape media must be returned rewind. One major source of damage for magnetic media is ejecting a tape in the middle and having the equipment pull the tape out of its housing. By ejecting tapes in a rewind position, this damage can be limited to one end of the tape, which can then be repaired by an A/V conservator.

Microforms

Max Chambers Library has an extensive microfilm collection that is one of the library's self-reported greatest preservation concerns. Part of this stems from a flooding incident several years ago that affected the newspaper microfilm collection. The microfilm appears in generally quite good condition, however there is a large amount of microfilm on acetate film base. This is a less stable material, and needs to be

monitored for replacement. Polyester microfilm (which is extremely stable) and acetate microfilm are easily distinguished by holding the reels up to the light. Polyester will glow, and acetate will appear dark.



Figure 16: Polyester microfilm



Figure 17: Acetate microfilm

Much of the microfilm is housed in acidic boxes, which can accelerate deterioration.

The greatest concern, however, is that in Special Collections there is a collection of microfilm that is not housed anywhere else in the world. The masters are kept on-site, which means that if there is ever a disaster that affects this microfilm, it would be lost forever. Microfilm is most permanent when the master copy is stored offsite at a secure, climate controlled facility.

I recommend to:

- Monitor acetate microfilm for a vinegar odor. When this odor becomes apparent, replace the film.
- Replace all acidic boxes.
- Move the Special Collections Texas Townsite microfilm masters to secure offsite microfilm storage.

Special Collections

The Special Collections are the jewel of UCO's Library, however they are endangered from lack of space and fluctuating environmental conditions, both of which have been addressed previously. In addition, many collections are stored in less than optimal containers due to budget restrictions. A major recent acquisition will strain the department's storage and housing capacity even further.

I recommend to:

- Increase the supply and equipment budgets to accommodate purchase of more materials to properly house and care for the collections.
- Invest in new flat files to accommodate the rolled and folded materials from the recent acquisition.
- Allow Special Collections to keep their archival photo printer when the university moves to a new centralized printing process. This printer is crucial for making the good quality prints required for exhibits and sale of prints.

B. Storage and Shelving

Standard metal library shelving with a finish is recommended. Certain paint applications and wood furniture are known to off-gas damaging pollutants such as formaldehyde; this offgassing can stain books and hasten their deterioration. On the shelves, books should not be allowed to lean to one side or be so crowded that patrons cause damage trying to pry the book off of the shelf. Overcrowded books also put pressure on other books, causing warping. A book should be shelved upright, spine out. With limited space, libraries are finding it more difficult to shelve large books in this configuration or to relocate to an oversize section. An appropriate compromise is to shelve oversize books with the spine down. When the book is shelved spine up, gravity pulls the textblock out away from the case/cover, exposing the book to further damage more costly to repair; endsheet replacement, recase, etc. Heavy and/or oversize material can also be shelved flat, no more than two or three high. Bookends help to keep books upright, but can also cause damage to books. Some bookends are more prone to "knifing", where the book can easily be jammed onto the sharp edge of the bookend, causing extensive damage inside the book. When possible, use bookends with a non-knifing lip.

For rare books or any material of enduring value, shelve by size. Smaller volumes do not provide adequate support for larger items. Also, pressure-sensitive adhesives should never be applied to rare materials. Type call numbers onto flags made of alkaline card stock and place the flags inside the volume. Archival material housed in filling cabinets should be moved to alkaline buffered document boxes and stored on open shelves. If this is undesirable for active records, alkaline buffered folders at the very least should be used to store documents. The filling cabinets have very low rates of air circulation and trap any

damaging airborne chemicals that are in the air, produced by the filing cabinet or the materials themselves. Document boxes do not produce any damaging byproducts, and because they are buffered and can absorb pollutants in the air and released by the documents.

In general, shelving in the Max Chambers Library is quite good. The circulating collection, in particular, is to be commended for their shelving efforts. As mentioned previously, the major problems with shelving include shelving material on the top shelves and not properly supporting soft material, leading to permanent deformation. The interfiling of oversized material is also a potential preservation issue, as the largest books will not be properly supported, and therefore can warp. Recommendations for dealing with all of these problems are contained earlier in this report.



Figure 18: Stacks of well-shelved material on the third floor

C. Care and Handling

Books should never be pulled off the shelves by the headcap (top of the spine), which causes spine and headcap damage. Train staff and patrons to push back volumes on both sides of the book, then pull the desired book off the shelf by placing fingers on either side of the spine. Staff should handle the book carefully at circulation, because stamping and slapping date due notices can put pressure on vulnerable areas of the book, i.e. the inner hinge of the book.

The staff observed during this visit handled the books carefully; however, the extensive spine damage noted previously makes it apparent that there are care and handling issues, most likely on the part of patrons. An education campaign (addressed in the Staff and User Education section below) should be created to address handling issues at the patron level.

V. Preservation Staff and Activities

At present, preservation activities in the library are spread throughout several positions and not formally coordinated under one position. Current activities include library binding, book repair/processing, shelf maintenance, maintaining a good environment, and security. The following section will address some of the preservation activities highlighting those that are lacking, in need of expanding, and which should be reevaluated.

A. Book Repair

Simple book repair on circulating material with no special enduring value can be done by in-house library staff. The most important consideration should be how you determine the value of the collections. Being able to identify rare, unique material will help you determine what items in-house staff vs. a conservator should repair. Some material should not be repaired, but withdrawn, replaced, boxed, or sent to a library binder. Your available staff and budget will help you decide what is the most cost effective and appropriate option.

Selection of materials for repair or rebinding mostly comes from circulation, with few items being pulled off of the shelves. Such a use-based process is a good one, for it is more cost-effective to repair only the materials being used. However, it becomes important to train the circulation staff in identifying damaged material, and to provide them with clear guidelines for decision-making. To help manage book repair operations document all policies and procedures into a manual and keep statistics on the number and types of repairs done each month. These statistics will help demonstrate the amount of material preserved and at what cost, and most importantly help determine future supplies.

Materials used in repair should not deteriorate and help extend the life of the item not cause further damage. For example, use a Polyvinyl Acetate Adhesive (PVA) over other types of adhesive to ensure strength, flexibility, and no deterioration. Paper used should be acid-free or alkaline buffered. Plastics (polyester, polypropylene, and polyethylene) should not contain Polyvinyl Chlorides that break down the plastic quickly. See Appendix E for more information on how to order supplies.

Currently most repair is performed by two positions within the library. One is full-time staff, and the other is a part-time staff person. Much of the repair work performed is spine repair with book tape. Tape is generally damaging, and a reback with bookcloth (see Appendix F) or sending books to the library bindery would be far preferable.

Given the library's willingness to send materials to the library bindery, binding should be the first choice for damaged circulating materials, as that will be the strongest solution. For older materials that cannot be effectively repaired in-house or bound, phase boxing is a cost-effective solution. These boxes can be made in-house (see Appendices N, O and P) or by the library bindery. If the library wants to perform a cost analysis of the difference between doing the work in-house and sending it to the bindery, Appendix S is quite helpful.

To maximize the effectiveness of repairs done in-house, repair staff should be sent for more training. While the permanent staff member has been sent to a basic book repair class, she could use a refresher and advancement of her skills, so that she can do more preservationally-sound repairs on materials that do not have time to go to the library bindery.

Another major function of the book repair area is replacing deteriorated call number labels. Thought should be given to using a thermal printer like a Zebra TLP 2844, that is capable of producing high quality labels, rather than using labels from the office supply store run through a laser printer. This might even result in a cost savings for the library, because several libraries report that the labels are so durable that they do not need any kind of label protector applied.

Finally, it would be beneficial to the library to create a book repair policy, perhaps as part of an overarching preservation policy that defines the repairs that will be done in-house vs. the repairs that will be sent to the bindery, appropriate materials for use, and appropriate techniques. An important appendix to this policy is a comprehensive set of directions for each repair performed by the repair staff.

B. Library Binding

More complex repairs are not always feasible for in-house repair, i.e. spine repair, re-case, new case, sewing and rebinding. Yet, replacing the item is very costly. The ability to send materials to a library binder allows you the flexibility to repair items too complex and expensive to repair in-house at a cost lower than the replacement value. This allows you to keep more items in your collection for longer periods of time.

A library should always use a certified library binder who is a member of the Library Binding Institute (LBI) to ensure that the binder follows the most recent standards set by the industry. To ensure a better quality product, a library should be familiar with the most recent library binding standard, *The Library Binding Institute Standard for Library Binding*, 8th edition, (Appendix I), and the options that have replaced oversewing “Class A” binding. A library should always have a contract. Contracts with library binders should specify standards, procedures, guidelines and upcharges. Finally, books returned from the binder should be inspected and documented for future meeting and follow-up with the binder. See Appendix T for inspection guidelines.

At this time, the library utilizes the library bindery mostly for circulating materials and periodicals. In 2009, they sent 1574 volumes to the bindery. The library has a contract with the HF Group, a well-respected bindery. In general, the library is happy with their library binding program, and willing to use it extensively.

To enhance your library binding, I recommend the following:

- Purchase the library binding standard and do further reading on the variety of options available beyond oversewing. For this collection, Case Flush Bottom binding would be particularly useful to implement for heavy or oversized volumes. See Appendix I for a bibliography.
- Inspect all material from the bindery and document problems. (See Appendix T for sample inspection forms)
- Request the videotape “Library Binding: A Collaborative Process, A Shared Responsibility” through interlibrary loan. While it is slightly dated, the information is still quite good, and the tour of the bindery would be very useful, given that it is unlikely that the library staff responsible for binding would be able to travel to Indiana to tour the HF Group’s bindery.

C. Reformatting

Reformatting allows fragile or damaged material to be copied onto a more stable format for future users. This allows the library to preserve the content of the original item and to provide access without exposing the original to potential damage. Creating microfilm of deteriorating newspapers and photocopying newspaper clippings for a vertical file are just two examples of how reformatting can be used. The two primary means of preservation reformatting are preservation photocopying and microfilming. Both should follow current standards and guidelines.

Little reformatting takes place at UCO. The only formal program is in Special Collections, where a photograph technician does good quality scanning of photographs. Scanning of photographs should also conform to current best practices.

D. Staff and User Education

Staff and user education in preservation is necessary to prevent damage to materials from poor handling, shelving, and photocopying practices. Signs addressing preservation issues, especially ones explaining the food and drink restrictions, should be posted throughout the library. Posters, handouts, and bookmarks could show how to properly handle, remove from the shelf, and photocopy materials. Staff should receive instruction on proper shelving practices and in selecting materials for repair. For ideas on educational materials and training, three useful items are Jeanne M. Drewes and Julie A. Page. *Promoting Preservation Awareness in Libraries: A Sourcebook for Academic, Public, School, and Special Collections*. Westport, CT: Greenwood, 1997; Wesley Boomgaarden, *Staff Training and User Awareness in Preservation Management*. Washington, D.C.: SPEC KIT 116. Washington, D.C.: Association of Research Libraries, 1993; and *Staff and User Education*. Atlanta, GA: SOLINET, 1998. (See Appendix I).

Max Chambers library has a very good exhibits committee that should consider exhibits on preservation topics, perhaps on a quarterly basis.

E. Gift and Donation Inspection

Gifts and donations should be inspected in an isolated area away from collection spaces before they are processed to prevent the spread of mold and insect infestation. These materials should be inspected for damage so they can be repaired, or even withdrawn, before they are cataloged and placed on the shelf. After a mold outbreak several years ago, caused by donated materials, Max Chambers Library has been vigilant in inspecting donated material.

F. Exhibit preparation

Max Chambers Library has an active exhibits committee which creates monthly exhibits on each floor of the library. Special Collections also has an active exhibits program, although the materials do not rotate as frequently. No original materials are exhibited. Instead, photocopies of materials are used to minimize light damage to collections materials. This is a very good policy, and the exhibits committee should continue their excellent work. As mentioned before, this could be an excellent way to perform some user education as well.

VI. Disaster Planning and Security

Developing and implementing a Disaster Preparedness and Recovery Plan for protecting and salvaging library materials in the event of a disaster should be considered a priority. The library is located in an area with many natural threats, each capable of causing both minor and large-scale damage to the library and its collections. The Amigos Disaster Plan template (Appendix J) can be used to gather the needed information, and serve as the basis for a library wide plan to be used in conjunction with existing emergency plans.

The disaster plan should contain information on how library administration and staff can deal with specific disaster situations. To be practical and useable, the plan should include specific information (descriptions/instructions) on activities library staff must undertake in the event of an emergency. Library staff procedures in fire, water, tornado, earthquake, medical emergency, and bomb threat situations should be outlined separately. Floor plans of the building should be incorporated into the plan, with possible problem areas highlighted. The scenarios should be at the front of the report for quick reference. Some history of the building, as well as current site survey information which might note structural problems or collection storage concerns, should be included in the plan.

The plan should include a list of suppliers and disaster recovery resources. Local resources such as hardware stores, plumbers, and paper suppliers should be included along with those resources that would be needed in a major disaster recovery effort. The most important phone numbers and contacts in both the library and/or archive should be located at the very front of the report. Other “secondary” phone numbers can be included in the text of the report or in appendices.

Additional points regarding disaster preparedness and points relating to the security of collection materials are addressed below:

- Currently there is no disaster plan for Max Chambers Library. However, a day of disaster planning training was conducted in conjunction with this report, and a disaster plan is a top priority.

- UCO has an Emergency Management Department. A representative of this department attended the training and will be a valuable resource to the library staff as they create their disaster plan.
- The building has a wet pipe non-deluge sprinkler system that should mitigate potential fire damage. Building services are the only people who can cut the sprinklers off after a fire is extinguished.
- The library is pleased with the current security program, and has no concerns.

VII. Future Options for Preservation

There are a number of available options for expanding and structuring the library's preservation program. Many of the recommendations made in this report require relatively little or no cost to implement; rather, they entail changes in practices and policies. However, some will require more planning and financial investment on the part of the library.

Before evaluating the recommendations, the strengths of the current program must be considered and the needs of the collection prioritized. This will aid in establishing reasonable short- and long-term goals. The greatest strength of the preservation program is the interest and concern library staff demonstrates for the collection. The needs of the collection—the top priorities—revolve around preventive maintenance procedures (properly maintaining materials on the shelves, following proper shelving techniques, etc.) followed by the need to provide better environmental conditions.

Most beneficial immediately would be the creation and implementation of a disaster plan, forming a Preservation Committee or taskforce (perhaps charged with developing the disaster plan), working to get the fluorescent lights shielded, developing policies and procedures for book repair, and starting a user education program. Long-term might look at solving the storage problems for Special Collections, developing a weeding policy, and writing a preservation plan. Other areas to explore include researching grant opportunities for Special Collections, and formal training opportunities for staff.

Summary

In general, the establishment of plans and policies in the areas mentioned in this report, without a great degree of new expenditures, can ensure that the preservation practices and preparedness of the Max Chambers Library staff are on a level with the good condition of the library collections and the well-maintained building.

Amigos Imaging and Preservation Services was glad to be of assistance in this preservation-consulting project, and will be happy to provide further assistance in the implementation of any portion of the plans set forth in this report.