This section of the Disaster Plan Workbook includes recovery procedures for the following materials:

- Recovery Procedures for Damp Books and Minor Emergencies  4-2
- Recovery Procedures for Wet Books and Paper    4-4
- Recovery Procedures for Photographic Prints    4-6
- Recovery Procedures for Photographic Films    4-7
- Recovery Procedures for Magnetic Tape Materials    4-9
- Recovery Procedures for Phonograph Records    4-11
- Recovery Procedures for Computer Equipment    4-12

Minor emergencies and small-scale emergencies where fewer than 1,000 Library materials are affected should be reported to the Preservation Department (see staff directory above).

Contact the Preservation Department before undertaking any of the procedures below.

In the event of a major disaster, a recovery operation will be coordinated with the Building Manager.
CHAPTER 4     RECOVERY PROCEDURES

RECOVERY PROCEDURES FOR DAMP BOOKS

DAMP BOOKS are defined as books that are not dripping water.

They can be wet around the edges or wet half-way through or just cool to the touch. These materials can be AIR DRIED.

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory)

**CAUTION:**

- All air-drying MUST take place in a cool, dry place. Warm humid air encourages mold and mildew growth which can be more damaging than the original emergency. Try to keep the temperature below 79 degrees Fahrenheit and the relative humidity below 55%. Keep the air circulating; use fans and dehumidifiers if needed.

- Minimize handling of water-damaged books. Paper and bindings are very fragile when wet.

- Keep the drying area clean by removed wet debris such as wet carpeting and furniture as soon as possible because they contribute to a humid environment.

- Never try to reshape or force damp volumes open as this will cause harmful distortion. They can be treated AFTER drying.

- Wait until after drying to brush off surface dirt or debris.

**PROCEDURES:**

If the books can be dried in the immediate area:

1. Stand books upright (head to tail) in a well-ventilated drying area with fans to keep the air circulating. A book is completely dry when it is no longer cool to the touch.
2. If the pages of a book are starting to pull out of the cover turn the book every 30 minutes or fan the book out on its spine.
3. Very damp books should be fanned out on their spines and interleaved with unprinted paper towels (pre-cut) no less than every 20 to 30 pages. Be certain to change the toweling every 15 minutes and remove the wet towels from the drying area.

*Updated June 10, 2016 LMc*
RECOVERY PROCEDURES FOR DAMP BOOKS
(cont’d)

If books must be packed and moved to another area for drying:

1. Keep a written record of what volumes are in which box (by floor, range number and call number) and clearly level each box.

2. Use record storage boxes, 200 test lb. to pack-out and transfer damp books to a drying area. A one cubic foot box will hold about 15 volumes and weighs about 50 pounds when loaded.

3. Wrap each book in one piece of unprinted newsprint; this will prevent colors bleeding into one another. Pre-cut sizes to save time.

4. Pack books SPINE SIDE DOWN IN A SINGLE ROW ON THE BOTTOM OF THE BOX. THIS ARRANGEMENT IS VERY IMPORTANT! DO NOT STACK BOOKS OR OTHER MATERIALS ON TOP. WATER DAMAGED MATERIALS WILL SAG OR DISTORT.

5. Seal box with packing tape and label contents with marker on all four sides as well as the top.

6. If there are more than 20 boxes: Stack 24-30 boxes (heaviest on the bottom, lightest on the top) on a shipping pallet. Shrink wrap entire pallet. Try to wrap same classification materials together.

7. Keep a record of what books are drying where: Use labels, take photos, make lists.

8. Follow instruction for air drying books as outlined above

9. Some books will dry distorted. This can be greatly reduced AFTER completely drying by placing volumes under light pressure or, in extreme cases, rebinding.

SUPPLIES:
Clean Unprinted Paper Towels
Pens
Fans
Dehumidifiers
Packing Supplies:
Markers For Labeling
Record Storage Boxes, 200lb Tested
Unprinted Newsprint
Clean Shipping Pallets & Shrink Wrap
RECOVERY PROCEDURES FOR WET BOOKS

WET BOOKS (as opposed to DAMP BOOKS) are defined as books that are dripping water. Books and paper are extremely fragile when wet and must be handled carefully as pages can easily fall out and covers can separate from the text block.

WET BOOKS should be frozen with the exception of books bound in animal skins (i.e. leather and parchment).

Large scale incidents: If more than 25 books are wet the volumes will need to be sent to a professional vendor for vacuum freeze drying. See Appendix B). Vacuum freeze drying dries the material with the least distortion as the water goes directly from the liquid to gaseous state (vapor) without passing through the solid state, i.e. ice never forms.

Smaller incidents: If there are less than 25 wet books they can be frozen in a commercial freezer, such as the freezer in the Preservation Department. Freezer Selection: Select a freezer that does not have an auto-defrost function to avoid continual freezing and thawing of materials. Meat freezers and household freezers allow ice to form slowly, producing large ice crystals and consequently should not be used for wet books.

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory).

CAUTION:

- Control the environment. Warm humid air encourages mold and mildew growth which can be more damaging than the original emergency. Try to keep the temperature below 70° Fahrenheit and the relative humidity below 55%. Use fans and dehumidifiers if needed. Keep the air in the area circulating.

- Identify the types of books to determine action and priorities. Leather and vellum bindings are extremely fragile and should be prioritized for air-drying. Glossy paper (like magazine paper, art books, etc.) is not salvageable after 5-6 hours in water the pages become irrevocably stuck together.

- NEVER try to reshape or force wet books open as this will cause harmful distortion or further mechanical damage. Do not remove damaged covers; books can be rebound or treated AFTER they are dry.

- Wait until after drying to brush off any dirt or debris.

- DO NOT OVER PACK BOXES as over packed boxes will be too heavy to move and the freezing process works well only if it is slow and uniform and books must have room to swell during freezing.

- Minimize handling of wet books. Paper and bindings are very fragile when wet.

Updated June 10, 2016 LMc
PROCEDURES:
Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory).

1) Keep a written record of what volumes are in which box (by floor, range and call number) and remember to clearly label each box.

2) Use record carton 200 test lb. cardboard boxes to pack and ship books to the freezer or vendor’s facility. A record carton box will hold about 15 volumes and weighs about 50 pounds when loaded with water-logged books.

3) Wrap each book in one piece of unprinted newsprint; this will prevent colors from bleeding into one another and books from freezing together. Precut sizes to save time.

4) Pack books **SPINE SIDE DOWN IN A SINGLE ROW ON THE BOTTOM OF THE BOX. THIS ARRANGEMENT IS VERY IMPORTANT! DO NOT STACK BOOKS OR OTHER MATERIALS ON TOP. WATER DAMAGED MATERIALS WILL SAG OR DISTORT**

5) Seal box with packing tape and label contents with a marker on all four sides as well as the top.

6) If there are more than 20 boxes: Stack 24-30 boxes (heaviest on the bottom, lightest on the top) on a shipping pallet. Shrink wrap entire pallet. Try to wrap same classification materials together.

7) Ship books to vacuum freeze dry facility (see Appendix C) in refrigerated or freezer trucks to prevent mold growth. Keep careful records of shipment contents and dates.

SUPPLIES:
- Clean Unprinted Paper Towels
- Pens
- Fans
- Dehumidifiers
- Packing Supplies:
- Markers For Labeling
- Record Storage Boxes, 200lb Tested
- Unprinted Newsprint
- Clean Shipping Pallets & Shrink Wrap
CHAPTER 4 RECOVERY PROCEDURES

RECOVERY PROCEDURES FOR PHOTOGRAPHIC PRINTS

PROCEDURES:

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory).

1) Retain all bibliographic information and labeling.

2) Try to separate photographs from one another ONLY if the emulsion layer (image sides) are not sticking to each other.

3) If a damaged photograph is in a frame, attempt to remove it ONLY if the emulsion layer (image side) is not sticking to the glazing or mount. Otherwise leave frame in place and contact a photograph conservator (see Appendix D).

4) Place photograph IMAGE SIDE UP on a ridged support like Plexiglas, or still cardboard.

5) Tilt the photograph (on the support) to allow excess water to run off.

6) Spread the photographs out face up on clean blotting paper or paper towels to air dry in a clean dry area. Some photographs will curl when drying. Consult a photograph conservator to flatten them after they are dry (see Appendix D).

SUPPLIES:

Pens
Note Paper
Large Plastic Containers
Clean Water Source
White Cotton Gloves Or Nitrile Gloves
Sponges
Plexiglas Sheets
Blotting Paper Or Paper Towels
White Cotton Gloves
CHAPTER 4 RECOVERY PROCEDURES

RECOVERY PROCEDURES FOR PHOTOGRAPHIC FILMS

Photographic Film includes:

- **rolled film**: microfilm, rolls of photographic negative (i.e. 35mm), and moving image film (i.e. 35mm, 16mm, or 8mm/Super8)

- **sheet film**: microfiche, photographic negatives, and transparencies (i.e. 35mm slides)

In most cases of fire, the extreme heat of the flames will damage film beyond repair: it will melt. Smoke and water damaged materials, however, can be salvaged. For major and minor emergencies, follow the instructions below. In extreme cases, the instructions below will stabilize the material until professional help is available. Microfilm and moving image film are difficult to handle and are best treated by a media preservation specialist and/or a photographic film reprocessing company (see Appendix D).

**CAUTION:**

- *Handle wet photographic films very carefully with nitrile gloves, touching only the edge of the film. Do not attempt to unroll a film to determine its content. When wet, the emulsion layer of photographic films can soften. Films will be fragile and can easily be damaged.*

- *Handle dry photographic films with white cotton gloves or nitrile gloves.*

- *If a film is wet, keep it wet until a media preservation specialist can treat it. However, do not submerge dry films in water.*

**PROCEDURES:**

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory)

Rolled films:

1) Remove rolled film from its container. Retain labeling/cataloguing information for identification purposes. If labels are damaged, consider photographing container information or transcribing it for future identification. Ensure that the reels can be matched with the appropriate cataloguing information in the future.

2) If wet, transfer film into a plastic container (not metal as the chemicals in the film will react to metal) filled with cold clean water, preferably running water. If running water is not available, agitate water periodically. If available, use distilled water; otherwise, tap water can be used. Change the water when it becomes warm or dirty.
SUPPLIES:

- Pens & Note Paper
- Plastic Containers
- Clean Water Source
- White Cotton Gloves Or Nitrile Gloves

Sheet film:

1. Remove wet film from enclosure. Retain labeling/cataloguing information for identification purposes later. If the film cannot be separated from an enclosure, or is adhered to an adjacent film, contact conservator for assistance.
2. Set film ‘emulsion side up’ on to a clean unprinted lint-free paper towel and air-dry in a dust-free area.
3. Once the film is completely dry, rehouse in a new envelope.
4. Dry dirt or debris can be brush off after drying with a soft brush. If a soft brush is not effective contact a photo conservator for assistance.

SUPPLIES:

- Pens & Note Paper
- Unprinted Lint-Free Paper Towels
- White Cotton Gloves Or Nitrile Gloves
- New Photo Enclosures
MAGNETIC TAPE materials include audio and video cassettes, and computer floppy disks. Most magnetic tape material is fairly heat resistant, able to withstand up to one hour in 200° Fahrenheit without severe damage. Prolonged exposure to water, however, is very damaging as it causes leaching of the chemicals that adhere the tape to the film base. It is possible but very difficult to clean a dirty, damaged tape and the quality will be severely sacrificed.

NEVER FREEZE-DRY MAGNETIC MEDIA.

FLOPPY DISKS can be salvaged but as a general rule, the more advanced the technology, the less the chance of recovery.

CAUTION: Never attempt to play a wet tape or disc.

PROCEDURES FOR FIRE- AND HEAT-DAMAGED MAGNETIC TAPES:

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory)

1) Clean dirt, ash, and smoke residue from containers and wraparounds before opening the container.
2) Contact the Preservation Department to determine the extent of further salvage efforts.

PROCEDURES FOR WATER-DAMAGED MAGNETIC TAPES:

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory)

1) Move all tapes out of standing water.
2) Check labels to be sure they are legible. Replace those that are not legible.
3) Quickly open and drain any water that may have entered the tape canisters. Tapes may require rinsing in distilled water (never use tap water) if they were exposed to salt water, sewage, or chlorinated water.
4) Wet tapes must be hand dried and stored for 48 hours in a stable environment before attempting to wind or playback.
5) When dry, tapes should be run against a felt pad (without the tape contacting the heads) to remove dried particles. Re-record as soon as possible. (See Appendix D).
RECOVERY PROCEDURES FOR MAGNETIC TAPE MATERIALS
(cont’d)

PROCEDURES FOR WATER-DAMAGED FLOPPY DISKS:

Contact the Preservation Department before undertaking instructions below. (See pg. 4-1 for Preservation Department Staff Directory)

1) Retain, or replace labeling.

2) Remove the disk from the jacket by cutting it with NON-METALLIC scissors.

3) Rinse disk in cold distilled water.

4) Dry with lint free towels.

SUPPLIES:

Pens
White Cotton Gloves
Wax Crayon
Note Paper
Non-Metallic Scissors
Lint-Free Towels
Distilled Water

*SEE CHAPTER 7 OF THIS BOOK FOR ORDERING INFORMATION AND THE LOCATION OF LOCAL HARDWARE STORES*
RECOVERY PROCEDURES FOR PHONOGRAPh RECORDS

Not much can be done to save fire or water damaged records and LPs. The heat from the fire will melt the plastic quickly and prolonged exposure to water will warp them beyond repair. To a large extent, these materials are considered NOT SALVAGEABLE. However, undamaged records with surface dirt can be carefully cleaned. Cleaning is best when performed by an audio conservator (see Appendix D). If necessary, these procedures may be followed.

CAUTION:

- Always handle phonograph records by the edges and wear white cotton gloves to avoid fingerprints.

PROCEDURES:

Contact the Preservation Department before undertaking instructions below for recovery procedures. (See pg. 4-1 for Preservation Department Staff Directory)

1) Wash record in a 1% solution of non-ionic wetting agent such as Kodak Photoflo. Use a soft brush to dislodge particles.

2) Rinse phonograph record with distilled water.

3) Place on a vertical rack, such as a dish rack, and let dry slowly away from heat.

SUPPLIES:

Soft Brush
Clean Distilled Water
Vertical Drying Rack (i.e. Dish Rack)
Rubber Or Vinyl Gloves

*SEE CHAPTER 7 OF THIS BOOK FOR ORDERING INFORMATION AND THE LOCATION OF LOCAL HARDWARE STORES*
If the building is being evacuated, the following actions should be taken:

PROCEDURES:

1) If time permits, the workstation should be shutdown.

2) If an emergency exists with the workstation itself (smoke emanating from the monitor or PC, flames, etc., pull the power cord from the wall (not the PC), *if possible*. Otherwise, evacuate the area immediately. Note: Computer components release toxic gas when ignited.

3) **In the event of a severe emergency**, if the building must be evacuated without time to shut down servers, throw the Emergency Power Off switch within the Systems Office.

4) In the event of a central system failure or any emergency (electrical, plumbing, etc) that could cause the failure of a central system, contact Security and the Building Manager. It is their responsibility to contact the appropriate staff from the Systems Department.

Bobst Library Security x81313
University Protection Services x82222
Building Manager (David Pinero) x53339