

Conservation Book Repair: A Training Manual

by
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VII. MAINTAINING A LIBRARY COLLECTION

All library materials need proper handling and treatment to remain in good condition and available to patrons. Using these simple techniques and practices will prolong the life of the books in a library collection.

A. CLEAR PLASTIC TAPE

See page 18 for a complete discussion of the dangers of clear plastic tape.

B. POST-IT NOTES

Post-It Notes are commonly used as book marks in library materials. This practice is damaging to books and should be stopped whenever possible. Really, a Post-it Note is no different than putting a piece of plastic tape in a book. While the Post-it Note is easy to remove, some of the adhesive from the Post-it Note remains on the page long after the Note is removed. It attracts dirt and can cause pages to discolor or stick together.

C. THE PHOTOCOPY MACHINE

Photocopiers are wonderful, time saving devices that unfortunately can cause a lot of damage to library books.

The spine area of many books is not always flexible. The glue used in constructing modern books dries rigid and brittle. Books that have been oversewn at a library bindery can have tight spines. When books like these are put on the photocopier, the spine is usually pressed down on the photocopier glass with a great deal of pressure which causes damage.

Heavy books are especially susceptible to damage while photocopying. The book must be picked up and turned over for each copy made. This puts a lot of stress on the hinge areas of the book, as well as on the spine of the text block. The book might be dropped or pages accidentally torn.

CONSERVATION BOOK REPAIR

If a book is to survive to be photocopied by successive patrons, it must be handled properly. Guidelines for photocopier use should be established to protect library materials.

- Watch patrons and staff using the photocopier. If people put too much pressure on the spine area, explain the dangers of this practice. Most people don't want to damage books.
- Books that are fragile or in danger of being damaged should not be photocopied. This is especially important if the book is a permanent part of a library collection.
- When it's time to purchase a new photocopier, consider buying one with special features for copying books. These photocopiers are built in such a way that the book is supported without being forced to open entirely so there is less pressure on the spine area.

D. SHELVING TECHNIQUES

Books often receive a lot of abuse before they even leave the library. They are yanked off the shelf by the top of the spine, forced back on the shelf between tightly packed books, and shelved on their fore edges when they are too tall. Often the bookends used in a library are not strong enough to support the weight of a shelf of books so the books lean at precarious angles.

1. REMOVING BOOKS FROM THE SHELF

Books should **not** be removed from the shelf by pulling on the spine of the book. The book cloth in that area can be weak and tear, especially when the book is old.

The best way to remove a book from the shelf is also the most time consuming. First, loosen the bookend and push the books around the desired book toward the back of the shelf. Grasp the desired book and pull it straight off the shelf, then reach to the back of the pushed back books and slide them forward. Finally, tighten the bookend.

A second, perhaps more practical, method involves paying attention as a book is removed from the shelf and using one special technique. If the book

seems wedged tightly between other books, stop and loosen the bookend. Instead of pulling the book off the shelf by the top of the spine, the cover's weak point, put an index finger on about 1" of the top of the text block. Pull the book off the shelf with that finger.

The most important thing to remember is not to force the book off the shelf.

2. RESHELVING BOOKS

When reshelving, don't force a book back into a tight shelf. Loosen the bookend if necessary and carefully slide the adjacent books out of the way. Shelve the book then tighten the bookend pressure. Never force a book onto the shelf.

Bookends can be dangerous for books. Many bookends are very thin and it is easy to shelve a book right into them. Pay attention as books are being retrieved or shelved.

3. LEANING BOOKS

Keep books well supported on the shelf with proper bookends. Poorly supported books tend to lean at precarious angles, putting a great deal of stress on the front and back hinges.

4. SHELVING BOOKS ON THEIR FORE EDGES

Oversize books are often shelved on their fore edges so that they will fit on a standard height shelf. This practice is deadly for books. As explained in **BOOK STRUCTURE AND CONSTRUCTION** (page 7), most modern text blocks are only held into their cases by a small amount of crash and glue. When a book is shelved on its fore edges, gravity is constantly working on the text block, forcing it to separate from the cover. If a book is too tall for the shelf, consider creating an Oversize Section (see below).

5. OVERSIZE BOOKS

Shelving oversize books can be a challenge to libraries. The best way to shelve them is lying flat on the shelf. Many libraries designate a special Oversize Section where books can be shelved flat in call number order. Other libraries designate the bottom shelf of a range of bookcases as the Oversize Shelf, again shelving flat.

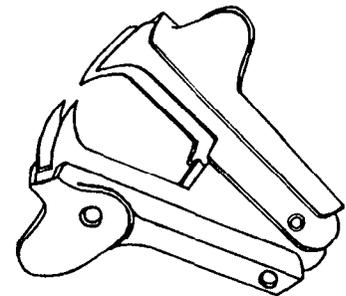
Books shelved flat can be tricky to manipulate. If a patron wants the book on the bottom, the tendency is to just pull it out, sometimes bringing all the books out with it. Leave an empty shelf to use as a staging area so books on top of the desired book can be placed on that shelf, then returned once the desired book is in hand. Library workers will also appreciate the work space when re-shelving oversize books.

E. REMOVING STAPLES AND PAPER CLIPS

Staples and paper clips need to be removed when they are rusty, when pages are photocopied or sewn into a pamphlet binder, and when the fasteners are damaging the materials. Removing staples and paper clips without damaging the paper can be fast and easy when the right tools are used.

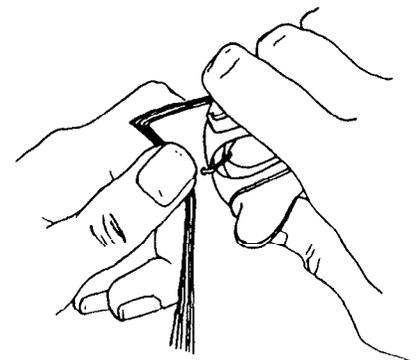
1. REMOVING STAPLES

The traditional double-jawed staple remover can be extremely damaging to paper materials.

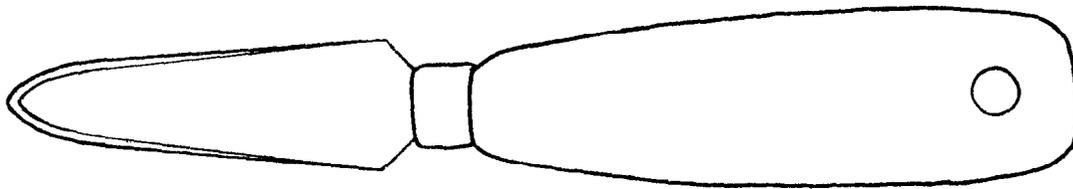


The staple remover grips the bridge of the staple and forcibly pulls the legs out of the paper.

If the paper is thin or weak, it often tears before the staple is open. When the stapled papers are thick or strong, they will resist the force of the staple remover until the legs



of the staple are partially open. The great force exerted to force the staple partially open can damage the paper as can removing a partially open staple.

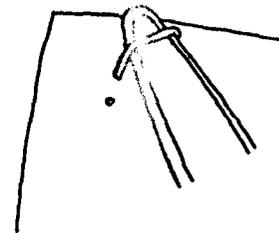


Using a specially beveled tool called a staple extractor or a common oyster knife, staples are easy to remove without damaging the paper.

Working from the back side of the staple, slip the beveled edge of the staple extractor under each leg of a closed staple and lift each leg up gently.



Turn the materials over and slip the beveled point of the staple extractor under the bridge of the staple. Lift the staple straight out of the paper.



Staple extractors can be purchased from most book repair supply houses and less expensive oyster knives are available where kitchen utensils are sold.

2. REMOVING PAPER CLIPS

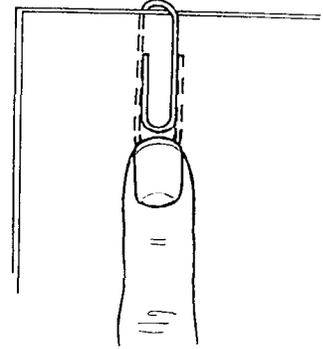
Paper clips are not always the best way to attach a group of pages to one another. They can rust or bend the paper when left in place for long periods of time. When a paper clip is removed, the blunt end of the clip can catch on the paper and tear it.

CONSERVATION BOOK REPAIR

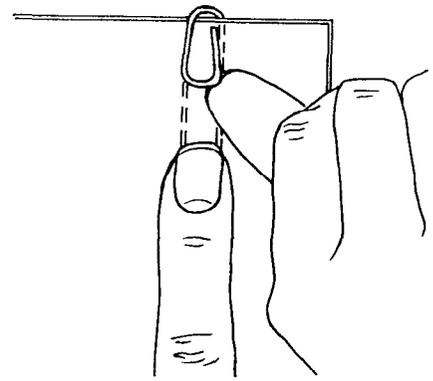
The best way to remove a paper clip without damaging the paper is to gently pry it open.

Lay the clipped materials on a work table with the short side of the clip facing up.

Through the paper, press the long side of the clip firmly against the table with one finger.



Gently pull up on the short side with the thumbnail of the other hand. A microspatula or staple remover can also be used to lift up the short leg of the paper clip.



When a paper clip is rusty, gently insert a small piece of Mylar between the clip and paper on both sides of the paper clip then repeat the instructions above.

F. PAPERBACK BOOKS AND SPIRAL BOUND BOOKS

A great deal of current information or literature is only available in paperback and spiral bound books. These structures need special care to remain in the collection and available to patrons.

1. PAPERBACK BOOKS

Many libraries have an abundance of paperback (PB) books. Unfortunately, many PB books are not well constructed so they are often in need of repair. It can be a poor use of staff time, as well as extremely frustrating, to attempt to repair a PB book that was not constructed to be repaired.

PB books that are constructed in single pages glued together can pose quite a problem for repair. Unlike the techniques used by library binders (double-fan binding with flexible glue) mass produced PB books are not constructed for multiple use. They are not usually fan bound, and the glues that are used in their construction tend to be with fast drying, brittle glue.

Higher quality PB books are constructed with sewn signatures (Smythe sewn) that can be repaired just as hard cover books with signatures.

There are several options for libraries with large collections of PB books.

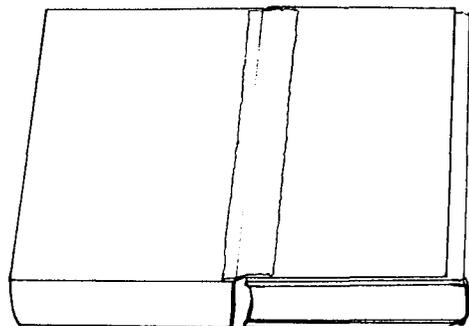
- Small, thin PB can be housed in pamphlet binders (page 144).
- If a PB book is considered part of a permanent collection, such as a reference book, reinforce it in-house before shelving it or send it to a library binder before use.
- If a PB book is projected to have a great deal of immediate use, but is not seen as part of the long-term permanent collection, give it minimal reinforcement and repair as possible. When the book has been repaired once or twice, either discard it or buy a replacement copy and reinforce or bind it for use. Do not attempt to continually repair a book that is not constructed so that it can be repaired.
- If a PB book is projected to have minimal use, give it minimal reinforcement and repair if possible.

Reinforcing Paperback Books With Board and Japanese Tissue

Open the book cover to its natural fold line and crease with a folder.

Photocopy any information on the inside of the front or back covers. Trim the photocopies and tip (page 58) onto the text block.

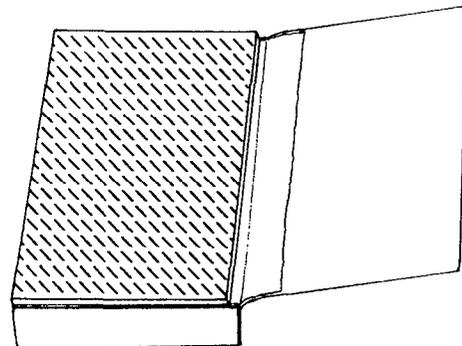
Reinforce the cover hinge fold with a 1" strip of Japanese tissue. 1/4" of the tissue should extend onto the text with 3/4" on the cover. Dry with the covers open under weight.



CONSERVATION BOOK REPAIR

Cut two pieces of thin board. The boards should be the exact height of the cover and the width should be the width of the cover minus 1/4"

Apply PVA to one piece of board and lay it onto the text block **GLUE SIDE UP**. Line up the board with the top, bottom and fore edge and carefully close the cover. The board will be 1/4" less wide than the text block so it will not sit flush with the cover hinge.



Use a folder or a book press to press the board onto the cover.

Repeat on the second cover and dry under weight.

Reinforcing Paperback With Clear Plastic

Many library supply companies sell self-adhesive clear plastic cover protectors to protect and reinforce PB books. These plastic cover protectors may be a good solution for maintaining a PB collection.

Remember that these covers are basically large pieces of plastic tape and should not be used on materials that are part of a permanent collection or cannot be replaced. The book cover cannot be bound into the volume at a library bindery once a plastic protector has been applied.

Look for cover protectors that are very flexible. This is very important as the added stiffness of the cover can put a great deal of stress on the glue between the spine and the text block. Too much stress at the hinge can cause the cover to separate from the text block.

Many of these manufactured covers come with special tape used to reinforce the attachment of the cover to the text block. Again, any material used to reinforce the cover hinge needs to be very flexible. If this tape is not flexible, the first page of the book will not turn freely. If that page doesn't turn freely, the page will crease along the edge of the tape and fall out.

Spiral Bindings

Spiral bindings can be reinforced for longer life. This technique was developed at the University of Michigan Library and uses a special product called Tyvek. Tyvek is strong, lightweight polyester "paper" that will not tear. Tyvek and PVA have a similar chemical makeup and bond very tightly.

Tyvek can be purchased through library or art supply sources or can be recycled from Tyvek mail envelopes sold at the post office. When using recycled Tyvek, glue the print side down.

Photocopy any information on the inside of the front or back covers. Trim the photocopies and hinge (page 61) onto the text block.

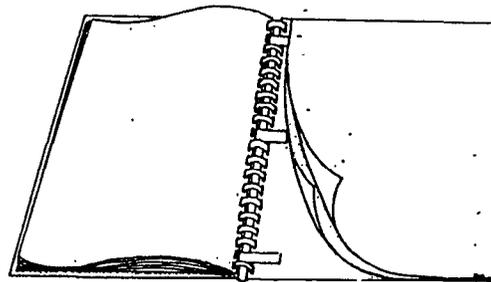
Cut two pieces of 60 point board:

Height = exact height of the cover

Width = distance from the spirals to the fore edge minus 1/4"

Use a pair of utility scissors to slip three or more rings from the spiral binding: top, middle and bottom. The number depends on the size and weight of the book.

Cut three strips of Tyvek a little narrower than the space left by the cut spirals, apply PVA, and thread the strips into the book.



Apply PVA to both pieces of board, and attach to the inside of the front and back covers. Line up the board with the top, bottom and fore edge of each cover.

A pastedown endpaper can be added to the board if desired. Cut the endpaper the same dimension as the board and glue to the board.

Dry under weight.

G. PAMPHLET BINDERS

Pamphlet binders are commonly used to protect small, thin booklets or pages in a library collection. Most pamphlet binders are constructed of two thin boards joined with a cloth hinge. The cloth hinge can have a single fold for thin materials or two parallel folds to accommodate a wider spine.

Library materials can be attached to pamphlet binders in several ways. One common method of attachment is to use a strip of gummed tape that is moistened with water and attached to the front and back covers of the material. Another method is to sew or staple the booklet into the pamphlet binder.

Pamphlet binders that use the gummed tape method of attachment cause problems for library materials in several ways:

- The adhesive used is not necessarily stable so it can discolor and cause permanent staining.
- The adhesive and tape tend to dry stiff and can often hinder the pamphlet from opening easily. Over time, the covers of the materials can begin to fold against the edge of the tape and eventually break off along that edge.
- The library materials are only attached to the pamphlet binder by the front and back covers, which leaves the contents of the booklet totally unsupported. Patron use or simple gravity causes the contents of the booklet to fall out of the binder while the covers stay attached to the pamphlet binder. When the contents separate from the cover, both parts can be lost or damaged.
- Thicker materials are usually side-sewn, side-stapled or glued together. Even without the pamphlet binder, they can be difficult to open flat, which has become more important in this age of photocopiers. These materials can be even harder to open once they are put in a pamphlet binder because many binders have hinges that are too narrow to allow easy and complete opening.

If pamphlet binders are an important aspect of a collection maintenance program, there are several options for using them successfully.

- Small (one, two or three signature) materials can be center-stapled or center-sewn directly into pamphlet binders so the entire item is supported, not just the cover. Simply ignore or remove the gummed adhesive strips and use the **THREE or FIVE HOLE PAMPHLET STITCH** (page 149 & 151) or staples to attach the material to the binder.
- Side-stapled, side-sewn or glued materials up to 3/8" thick can be side-sewn or side-stapled into a pamphlet binder if the binder has a wide enough flexible hinge area. This will support the entire contents, not just the covers. Again, see the **THREE and FIVE HOLE PAMPHLET STITCH** (page 149 & 151) for sewing instructions or use staples.
- Small or fragile materials can be housed in an envelope or a modified four-flap wrapper (page 163) which is glued into the binder.

Take care not to damage materials when removing the original staples. **Removing Staples** is discussed on page 138.

Library supply catalogs offer special various sized, non-rust staples and staplers to accommodate center stapling or thick items.

If the gummed adhesive is used to attach the booklet to the binder, align the bottom of the booklet with the bottom edge of the pamphlet binder. The shelf will support the entire book and binder, and the book will be less apt to fall out.

Always check the attachment of library materials to binders when they are checked out or returned. If the contents are in danger of separating, the item can be repaired before it is lost or damaged.

Improved Pamphlet Binders

New and improved pamphlet binders have come onto the market in the past few years and many older pamphlet binder suppliers have improved their products as well.

Companies such as Gaylord or Demco have introduced binders with archival boards that offer a more stable adhesive to attach the booklet to the binder.

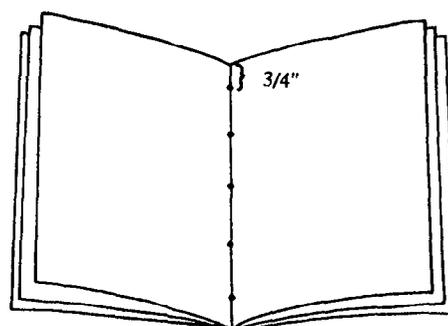
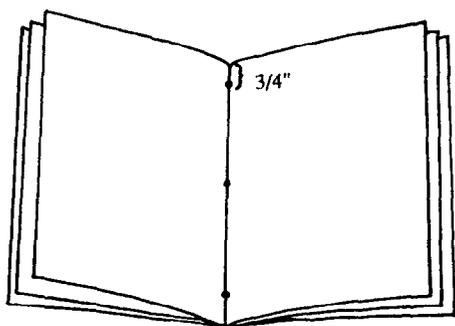
Archival Products manufactures a binder constructed of a tough, archival back board coated with acrylic and a clear stable polyester front board which allows the contents to be visible so a title label is not necessary. Materials are sewn or stapled into the binder and the hinge is 1 1/2" wide so it is very flexible, opening easily and fully for reading or photocopying.

1. THREE AND FIVE HOLE PAMPHLET STITCH

Pamphlets or booklets are unbound material 1/2" or thinner in spine width. These materials can be individual sheets or single or multiple signatures and can be sewn or stapled into a pamphlet binder.

The three or five hole pamphlet stitch is used to sew individual sheets or signatures into a pamphlet binder. Either sewing stitch works well on most center sewn or stapled materials and on side-sewn or stapled items up to 3/8" thick.

Choose the three hole stitch for fairly thin materials less than 7" tall. A taller, heavier booklet should be sewn with the five-hole stitch. When in doubt, it's better to use the five-hole pamphlet stitch.



Regardless of which stitch is chosen or the size of the pamphlet, the first and last sewing stations (1 & 3 or 1 & 5) should be no more than 3/4" from the top or bottom edge of the booklet and the center sewing station (2 or 3) should be in the center of the booklet.

This placement of sewing stations gives the most support to the entire booklet.

Use the technique on page 138 for REMOVING STAPLES and use the original staples holes for sewing if possible so as not to punch additional holes in the fold of the booklet.

a. Punching Sewing Holes in Pamphlet Materials

Center Folded Materials

For items that are center folded, a punching jig (page 30) and signature cradle (page 31) can be used.

If a sewing cradle is not being used or if the material is loose pages, Binder or Bulldog clips can be used to hold the punching jig in place when the holes are punched.

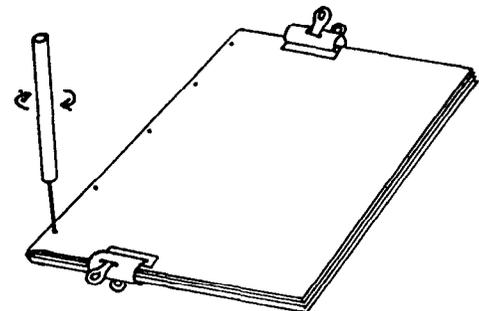
To punch the sewing stations in a booklet and a pamphlet binder at the same time, position the booklet inside the binder and hold both in place with Binder or Bulldog clips.

Side-Stapled or Individual Sheets of Paper

NOTE: Pamphlet materials can be constructed of folded signatures, then side-stapled through the folds. It can be advantageous to remove the staples and sew the signatures together using the **link stitch** (page 121) so they will open completely flat.

To punch sewing holes in individual sheets of paper or side-stapled materials, position the booklet in the binder and hold it in place with Binder or Bulldog clips.

Using a needle-in-a-stick or awl, punch the holes as close to the spine edge as possible making sure there is enough margin to hold the booklet securely in the pamphlet binder.



CONSERVATION BOOK REPAIR

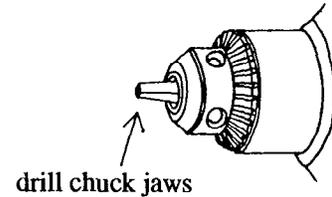
If the needle or awl will not punch the materials easily, try twisting while pressing down. Too much pressure can bend or break the tool.

When punching by hand, it can be convenient to punch into a piece of 1" Styrofoam, available in most craft stores.

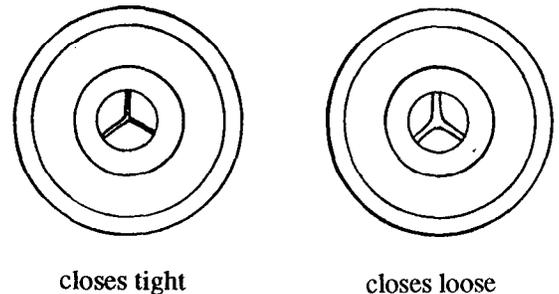
If the material is too thick to punch by hand, drilling is a possibility. Remember to protect the work surface with a sheet of wood when drilling.

When drilling materials, use a small drill bit, about the same size as the sewing needle. Small drill bits are available in hardware, hobby or jewelry supply stores.

The drill chuck jaws of a standard drill may not hold small drill bits.

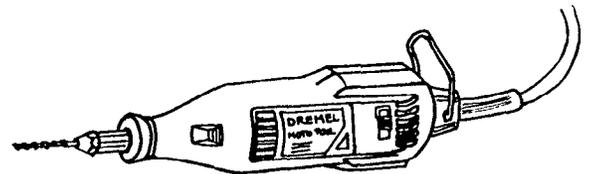


Check the jaws of the drill chuck to see if all three jaws meet when it is completely closed. If they do not, the drill will not hold the smaller drill bits.

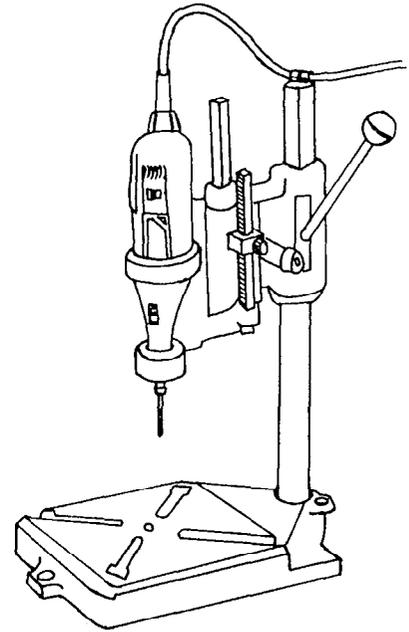


The Dremel Company (see **SUPPLIERS**) markets a Moto-Tool with a very small drill chuck to hold small drill bits.

There are several models of Moto-Tools including one speed and multi-speed models. Model 275, a single speed drill, can be attached to a variable speed foot control (similar to a sewing machine foot control) so the operation and speed of the drill is regulated by the foot control and both hands are free to maneuver the tool.



Dremel also sells a drill press for its Moto-Tool which holds the drill press in place. The Dremel is raised and lowered with a pressure arm. Remember to read and follow all the safety instructions.



b. THE THREE HOLE PAMPHLET STITCH

Choose the three hole stitch for fairly thin materials that is less than 7" tall. A taller, heavier booklet should be sewn with the five-hole stitch.

The illustrations for the three hole pamphlet stitch show a one signature pamphlet. The same sewing pattern can be used for items published as individual sheets or side stapled.

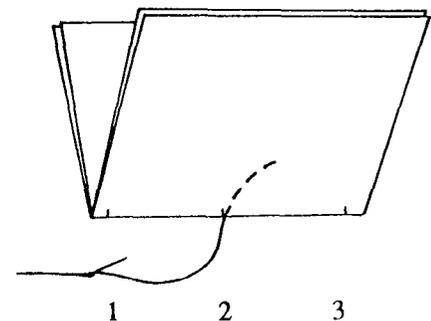
Sewing multiple signature materials into pamphlet binders is discussed on page 153.

Detailed instructions for placing and punching sewing holes begins on page 146 .

Measure a length of thread that is two times the height of the book plus 4 - 6". Choosing, waxing and locking thread onto a needle is discussed on page 22.

Starting on the inside of the pamphlet, insert the needle into sewing station 2.

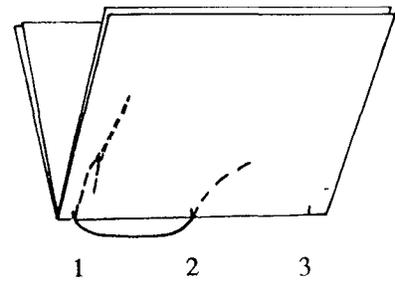
Pull the thread to the outside of the pamphlet, leaving a 2" tail inside the pamphlet.



CONSERVATION BOOK REPAIR

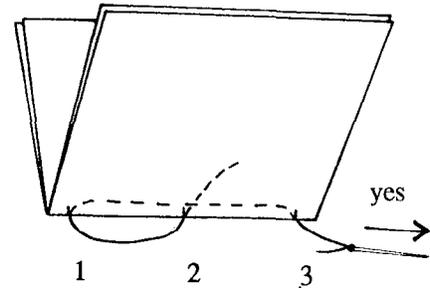
On the outside of the pamphlet, insert the needle into station number 1.

Pull the thread through sewing station 1, being careful not to pull the tail out of the pamphlet at station 2.



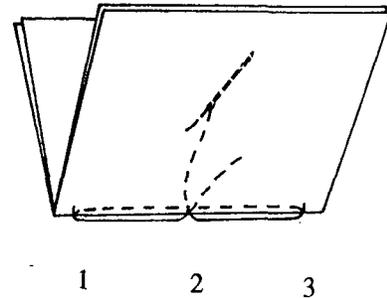
On the inside of the pamphlet, proceed to sewing station number 3, going past sewing station number 2.

Insert the needle into sewing station 3 and pull the thread to the outside of the pamphlet.

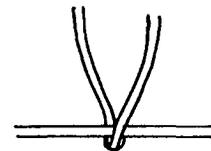


Gently pull the thread snug being careful to pull in the direction of the sewing so as not to tear the paper.

Return to station 2 on the outside of the pamphlet. Insert the needle into sewing station 2.



The two ends of sewing thread should straddle the sewing thread that runs the height of the booklet.



Be careful not to pierce the thread already in sewing station number 2. If the center thread is pierced, it will be difficult or impossible to tighten the threads when the sewing is complete.

Pulling in the direction of sewing, take up any slack in the sewing thread and tie off the two loose ends with a square knot (page 26). Clip the threads to about 1/2".

C. THE FIVE HOLE PAMPHLET STITCH

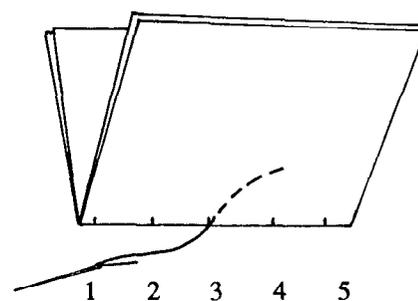
The illustrations for the five hole pamphlet stitch show a one signature pamphlet. The same sewing pattern can be used for items published as individual sheets of folded paper.

Sewing multiple signature materials into pamphlet binders is discussed on page 153.

Detailed instructions for placing and punching sewing holes are given on page 146.

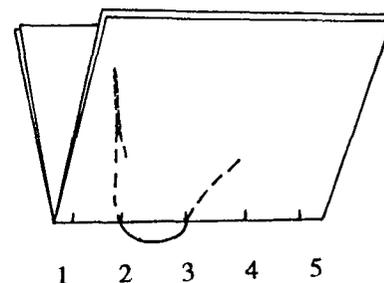
Measure a length of thread that is two times the height of the book plus 4 - 6". Choosing, waxing and locking thread onto a needle is discussed on page 22.

Starting on the inside of the pamphlet, insert the needle in sewing station number 3 and pull the thread to the outside of the pamphlet, leaving a 2" tail inside the pamphlet.

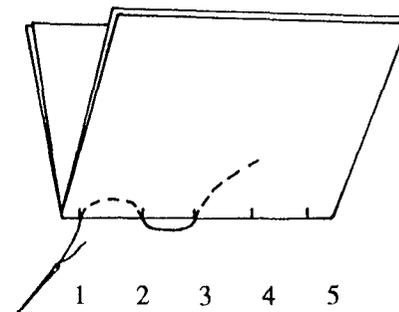


Proceed to sewing station number 2 on the outside of the pamphlet, and insert the needle into sewing station 2.

Pull the thread to the inside of the pamphlet at sewing station 2. Be careful not to pull the tail out of the pamphlet at station 3.

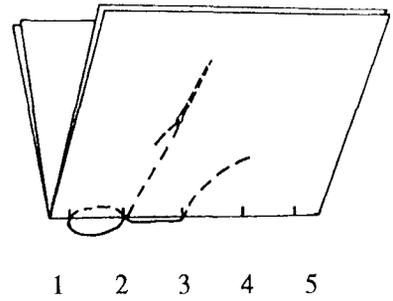


On the inside of the pamphlet, insert the needle at sewing station 1, and pull the thread to the outside. Be careful to pull the thread in the direction of sewing so it will not tear the paper.



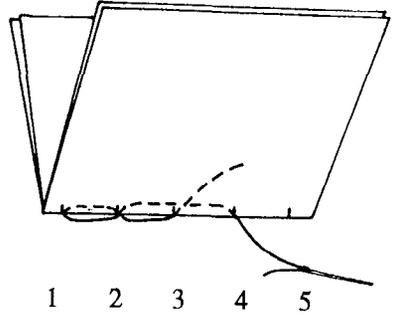
CONSERVATION BOOK REPAIR

On the outside of the pamphlet, insert the needle in sewing station number 2, and pull the thread to the inside of the pamphlet.



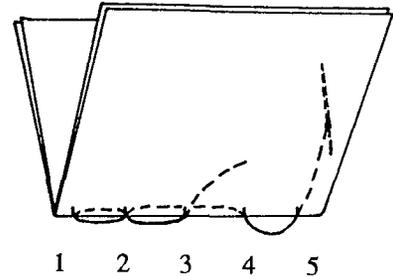
Go past sewing station 3 to sewing station 4 on the inside of the pamphlet.

Insert the needle in sewing station 4, and pull the thread to the outside of the pamphlet.

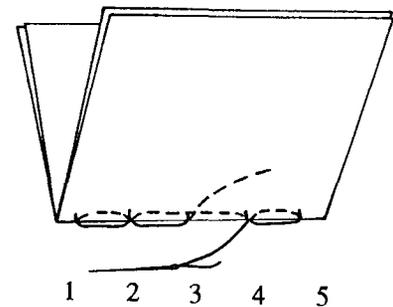


Proceed to sewing station 5 on the outside of the pamphlet.

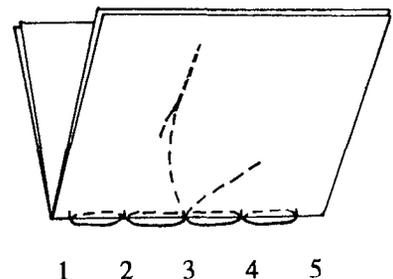
Insert the needle into station 5, and pull the thread to the inside of the pamphlet. Gently tighten the thread by pulling the thread in the direction of sewing.



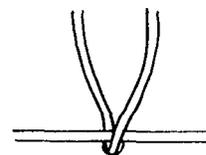
On the inside of the pamphlet, insert the needle in sewing station number 4, and pull the thread to the outside of the pamphlet.



Return to station 3 on the outside of the pamphlet, and insert the needle into sewing station 3.



Be careful not to pierce the thread already in sewing station number 3. The two loose ends of sewing thread should straddle the thread in the fold of the pamphlet.



If the sewing thread has been pierced, as the pamphlet is sewn, it will be difficult or impossible to tighten the threads before tying the knot.

Tighten the sewing thread in the direction of sewing to remove any slack, and tie off the two loose ends with a square knot (page 26). Clip the threads to about 1/2".

d. Sewing Multiple Signature Pamphlets Into Binders

A multiple-signature pamphlet that is side sewn or side stapled can be punched or drilled (page 147) and sewn into a binder using the 3 or 5 hole pamphlet stitch above. Also, the staples can be removed and the signatures sewn individually.

Multiple signature pamphlets that are sewn through the fold may be attached to a pamphlet binder with a secondary sewing to retain the ability of the pamphlet to open flat.

Check the original sewing to make sure it is sound. If the sewing needs to be repaired or the signatures are loose, follow the directions for sewing THE LINK STITCH on page 121 prior to attaching the pamphlet to the binder.

Attach the sewn multiple-signature pamphlet into a binder using THE THREE HOLE PAMPHLET STITCH on page 149 or THE FIVE HOLE PAMPHLET STITCH on page 151. Sew and knot each sewn signature separately so the sewing threads will be tight.

2 Signature Pamphlet: punch and sew each signature to the binder.

3 - 4 Signature Pamphlet: punch and sew the 1st and 3rd signatures to the binder.

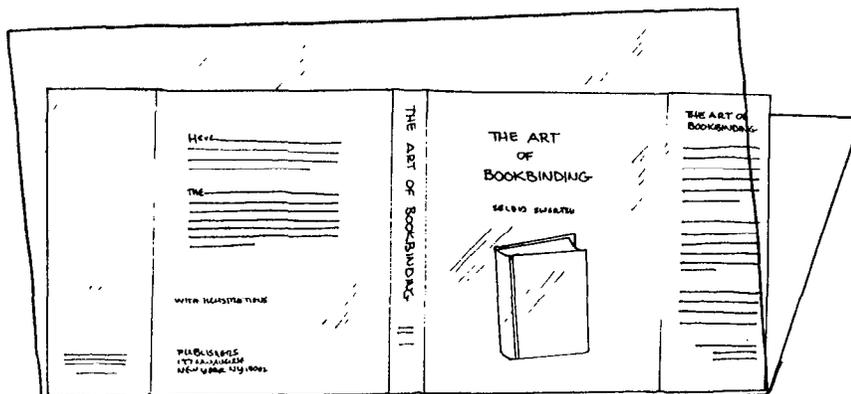
5 Signature Pamphlet: punch and sew the 1st, 3rd and 5th signatures to the binder.

H. PLASTIC BOOK JACKET AND MYLAR COVERS

Used carefully, clear plastic book jacket or Mylar covers are a very good way to protect library books.

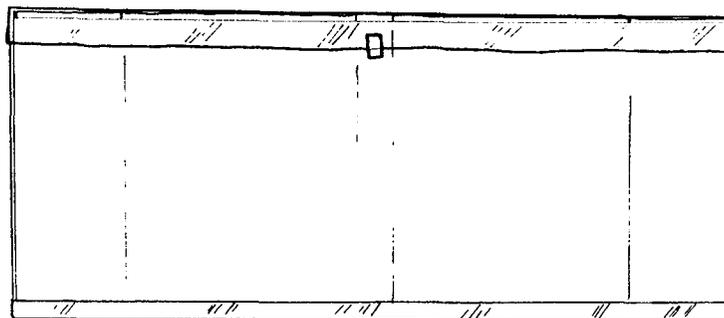
1. PLASTIC BOOK JACKETS

Replacing damaged or soiled plastic book jacket covers is a fast way to make books look new and inviting so they circulate more.



The best kind of plastic book jacket covers to use is the type with two parts: a clear, plastic front and a white paper backing.

Choose a size of plastic book jacket that is long enough to cover the entire length of the book jacket. Slide the book jacket in between the plastic front and the white paper backing.



Turn the book jacket over and fold the clear plastic front over the white backing paper. Tape the plastic front to the backing paper. Do not put tape on the book jacket itself.

Since the tape does not touch the book jacket, it cannot stain or discolor. The book jacket remains safe and clean. When the plastic jacket is soiled or torn, simply replace it and the book jacket will look new again.

Warning! Some plastic book jackets do not have a paper backing. The plastic is taped directly to the paper book jacket. Unfortunately, the adhesive in the tape can migrate to the paper jacket and cause stains. In addition, the paper cover is often torn when the plastic cover is removed. All in all, it is best to avoid this type of plastic jacket.

Some book companies will offer to apply plastic covers for the library. This may seem like a time saving offer but consider it carefully. These companies often apply the plastic book covers in such a way that makes them difficult or impossible to remove without tearing the original book dust covers. Ask about this service before purchasing it. Make sure the plastic book covers can be easily replaced without damaging the original paper book jacket.

Attaching Plastic Jackets to Library Books

The most common way to attach plastic jackets to a book is to tape them down. Be careful about the type and amount of attaching tape used and where it is placed.

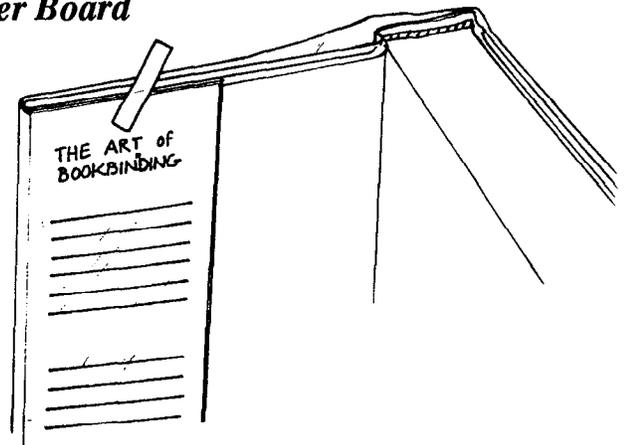
- Try to use a tape that is pH neutral and stable. Since the adhesives used in many plastic tapes are not stable, they can stain the cover cloth on a book or the adhesive can transfer to the cover of the book so that the cover remains sticky even after the tape is removed.
- Use as small a piece of tape as possible, and try to put the new tape in the same place each time it is replaced. CLEAR PLASTIC TAPE, page 18, discusses the dangers of using tape.
- When a plastic book cover is taped onto a book, pay special attention to the endpapers. If there is no special information on the endpapers, tape the turn-ins of the plastic jacket down to the book cover as in *Method 1*.

If a map or chart is printed on the endpapers and the turn-ins of a plastic book cover are taped over it, a library patron will undoubtedly tear the tape or cover to have access to the image. To prevent this, attach the plastic book jacket to the book so that it opens to show the entire end sheet following the instruction in *Method 2*.

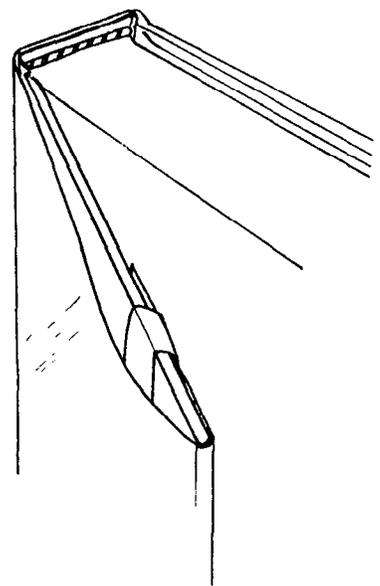
- When due date slips or pockets are placed at the front of the book and will cover important information, check the end sheet at the back of the book. Often the information is repeated on the back cover so the front turn-in can be attached with Method 1 and the back turn-in with Method 2. Pencil a note to patrons on the due date pocket letting them know the map or illustration is visible at the back end sheet.

Method 1: Taping Jacket Turn-in To The Cover Board

Use a piece of tape approximately 1 1/2 - 2" long. Attach one half of the tape on the turn-in area of the plastic cover. Try to place it so that no information is covered.

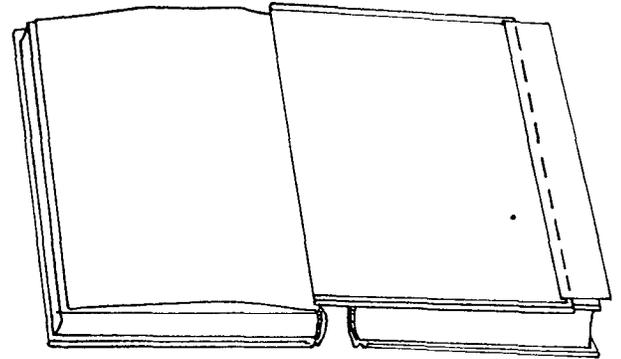


Fold the tape over the book cover and press it in place. The tape can be attached to the outside of the plastic cover or to the front of the book cover. Tape each turn-in at the top and bottom.

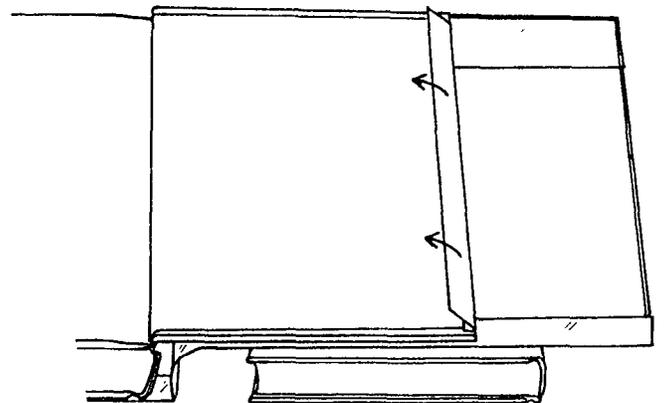


Method 2: Attaching the Plastic Jacket So That the Turn-In Opens

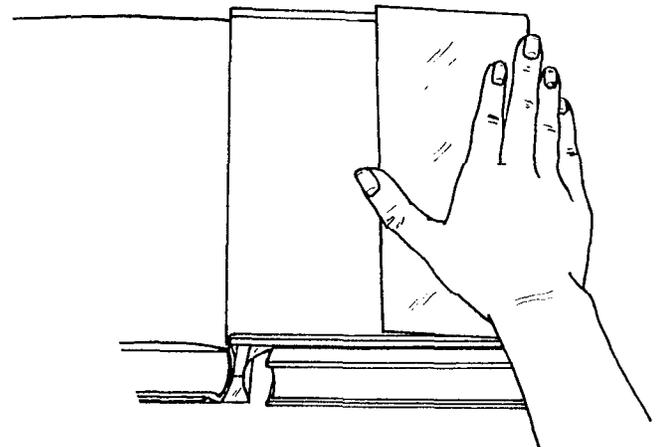
Use a piece of paper tape the height of the book and attach it to the very front edge of the book cover. Try to apply the tape so it covers as little of the end paper as possible.



Carefully fold the tape back onto itself. Position the plastic cover on the book.



Gently fold the turn-in over so that it is in contact with the tape. Press the tape to the book jacket. Repeat for the other turn-in.



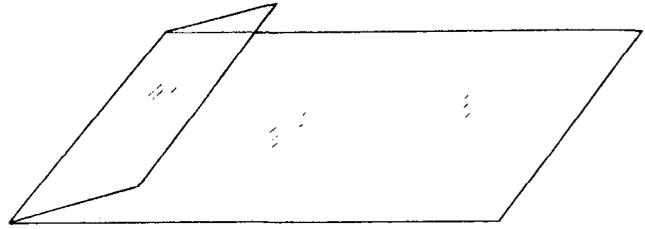
2. MYLAR BOOK JACKETS

Mylar book covers can be used to protect books that do not have book jackets. For instance, it might be faster and cheaper to use a Mylar jacket on a reference book with a torn spine.

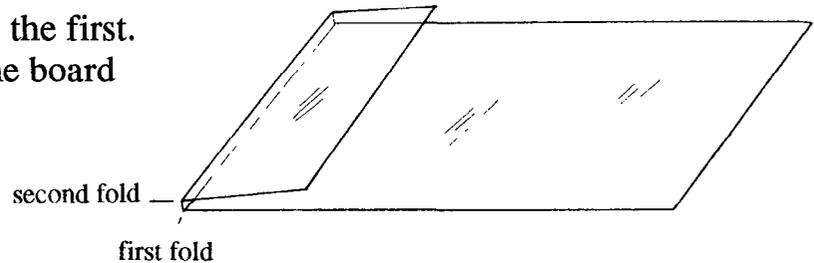
CONSERVATION BOOK REPAIR

Cut a piece of Mylar 1/4" taller than the book and 6" longer than the length of the two covers and the spine.

Make a fold 3" wide at one end of the Mylar.



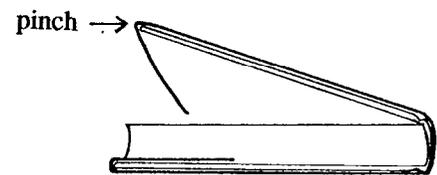
Make a second fold next to the first. The two folds should be one board thickness apart.



Lay the book with the front cover inside the folded flap. Fold the Mylar around the book. Fold the loose edge of the Mylar around the back cover.



Pinch the Mylar to mark the fold. The Mylar should fit around the cover, but not so tight that it puts stress on the cover hinges.



Remove the book from the Mylar cover and make a creased fold at the pinch.

Make a second fold one board thickness outside the pinched fold.

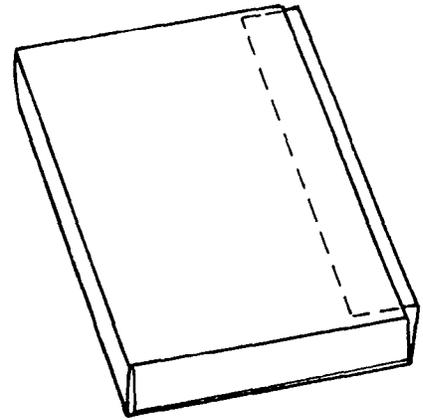
Put the Mylar jacket on the book. Because of the box fold, the jacket will usually stay on the book by itself or the flap can be taped to the cover.

I. WRAPPERS AND BOXES

Wrappers and boxes are other ways to protect books on the shelf. In a general library collection, they might be used to protect Reference books that cannot be repaired or replaced. Some libraries use wrappers or boxes for circulating materials as well. A modified four-flap wrapper (page 163) can be used to house fragile items or loose pages inside a binder.

1. FOUR-FLAP WRAPPER

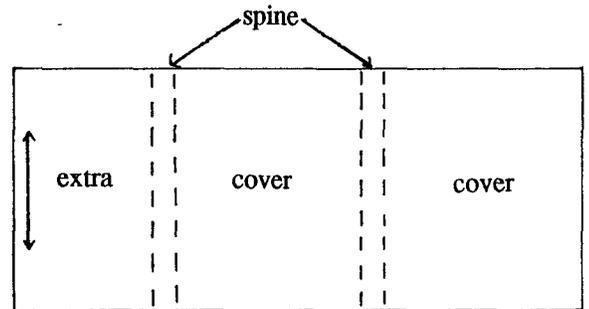
The four-flap wrapper is constructed from two pieces of folder stock which can be ordered from several book supply sources.



Use the technique of measuring with a piece of paper explained on page 37 to measure the height (A), width (B) and thickness (C) of the book or papers. Label each measurement.

Cover Piece 1

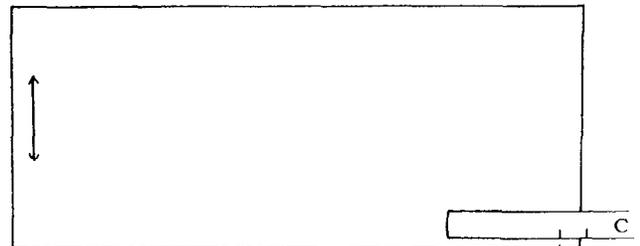
Cut a piece of folder stock the height of the material (measurement A) and about 3 times the width of the material (two covers, two spines and about 4" extra).



cover piece 1

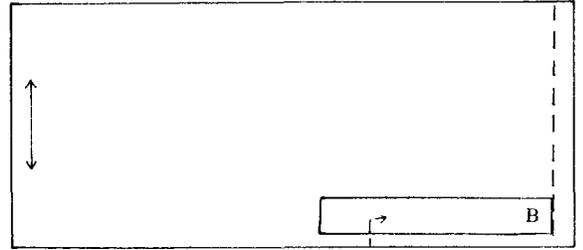
The grain of this piece of folder stock should run parallel to the short side of the folder stock.

Position Measurement C (thickness of the item) on the right edge of Cover Piece 1; then mark, score, and fold.

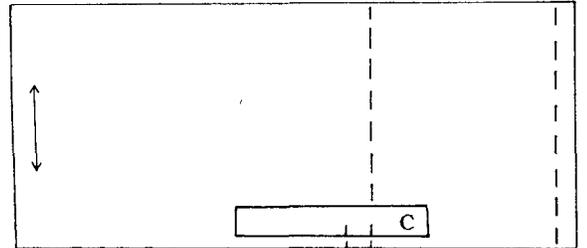


CONSERVATION BOOK REPAIR

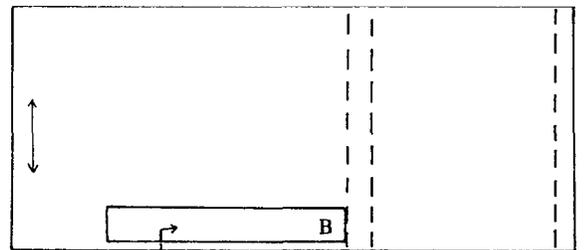
Add Measurement B (the width of the material) to the fold; score and fold.



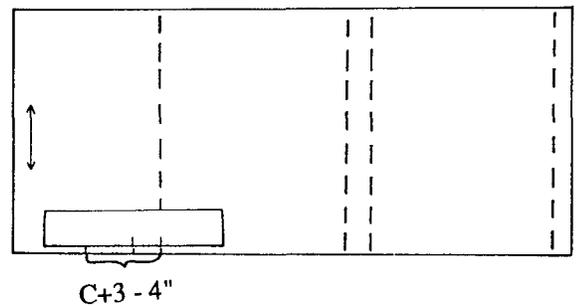
Add Measurement C to the fold; score and fold.



Add Measurement B to the fold; score and fold.



Add Measurement C plus 3 - 4" to the fold and cut.

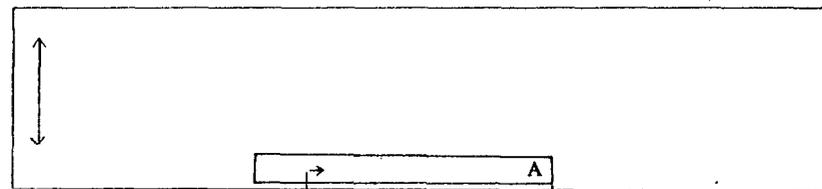


Proceed to cut and score Cover Piece 2.

Cover Piece 2

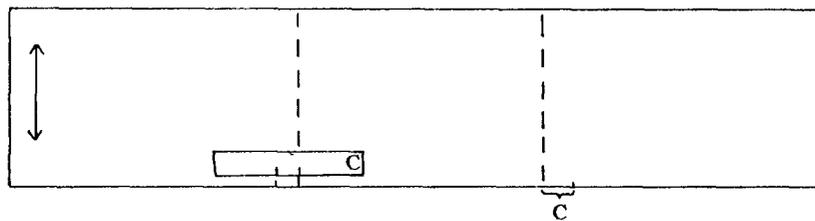
Cut a piece of folder stock the width of the material (measurement B) and about the equivalent of the measurement for the height of three covers and two spines.

The grain of this piece of folder stock should run parallel to the short side of the strip.

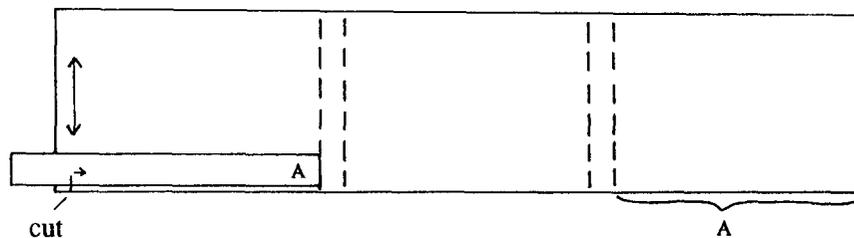


cover piece 2

Center the Measurement A (the height of the book or papers) on Cover Piece 2; mark the height; score and fold.



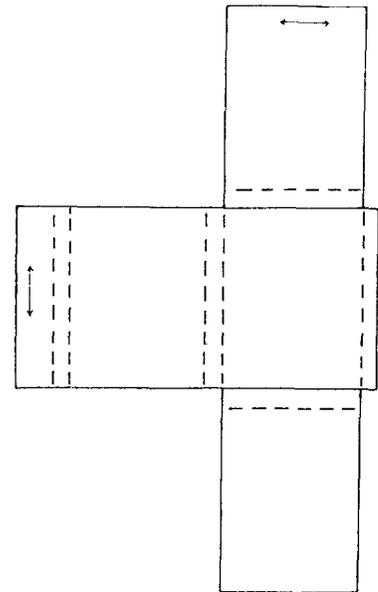
Add Measurement C to each fold; score and fold.



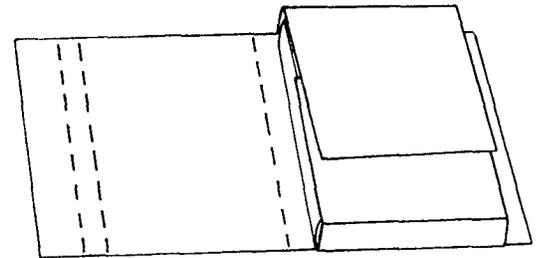
Add Measurement A to each Measurement C. Trim Cover Piece 2 if necessary.

Attaching Cover Piece 1 and Cover Piece 2

Place Cover Piece 1 inside Cover Piece 2 as shown.

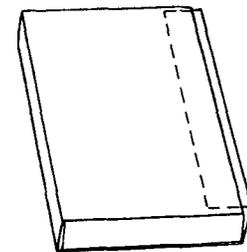


Place the book in position and fold the flaps from Cover Piece 2 over the book. Each flap does not need to cover the entire cover, as long as the two flaps together cover the entire cover.



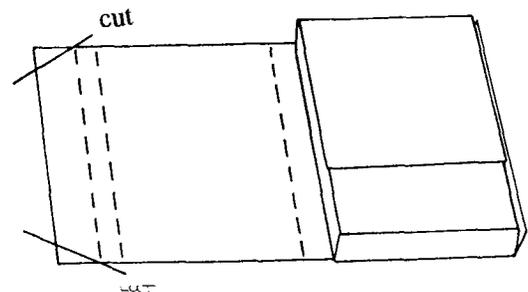
Trim the flaps shorter if necessary.

Wrap Cover Piece 1 around the book. The four-flap wrapper should be a good fit without being too tight or too loose.

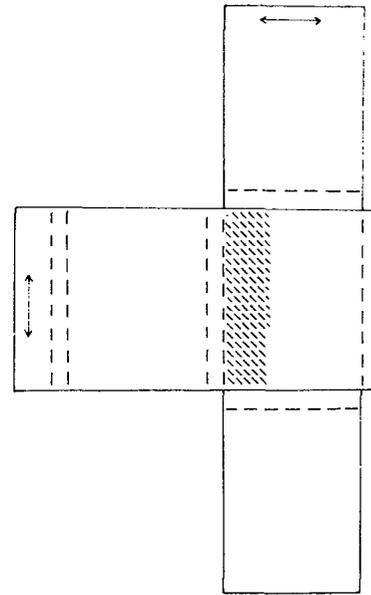


Tuck the last flap (C plus 3 - 4") between Cover Piece 1 and 2 at the right edge. Trim the tuck-in flap shorter if it resists tucking in.

Trim the top and bottom edge of the tuck-in flap diagonally.



Remove the book and separate the Cover Pieces. Apply PVA adhesive to the left quarter of the center A measurement on Cover Piece 2. Replace Cover Piece 1 and dry under weight.



When the glue is dry, put the book into the wrapper, fold over the flaps from Cover Piece 2, then wrap Cover Piece 1 around the book.

Label the spine with the call number, title and author (space permitting). Place on the shelf.

2. MODIFIED FOUR-FLAP WRAPPER

A modified four-flap wrapper can be constructed and glued into a pamphlet binder to protect thin items or loose pages. This wrapper is similar to a four-flap wrapper, but it has a closing tab instead of the flap that tucks into the wrapper to hold the wrapper shut.

The Modified Four-Flap Wrapper can be cut from a single piece of card stock but it will be less wasteful to cut two separate pieces and glue them together.

Use a piece of paper to measure the height (A), width (B) and thickness (C) of the book or materials. Label each measurement.

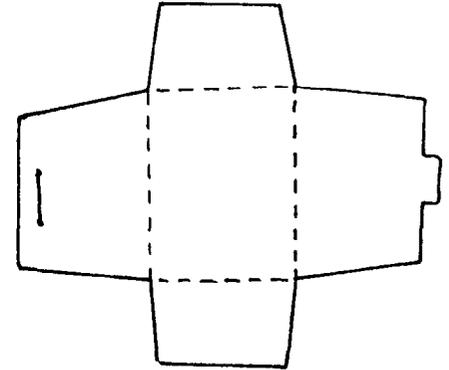
Cut a piece of folder stock the height of the book or papers (measurement A) and about 3 1/2 times the width of the text block (three covers and two spines). The grain of this piece of folder stock should run vertical to the cut stock and parallel to the book spine.

CONSERVATION BOOK REPAIR

Cut a piece of folder stock the width of the book or papers (measurement B) and about 3 1/2 times the height (three covers and two spines). The grain of this piece of folder stock should run horizontal to the stock and perpendicular to the book spine.

Using the same techniques as given for the Four-Flap Wrapper, construct the two cover pieces and glue them together as shown.

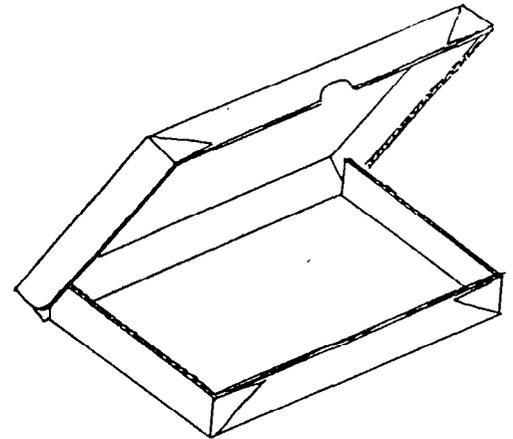
Since the flap does not slip under the cover as in the Four-Flap Wrapper, glue the two pieces completely together where they overlap.



The Modified Four-Flap Wrapper can now be labeled and placed on the shelf or glued into a pamphlet binder.

3. CORRUGATED CLAM SHELL BOXES

A simple corrugated clam shell box can be constructed from a sheet of single wall acid-free corrugated board. These boxes are faster to construct and cheaper than the traditional CLAM SHELL BOX (page 169). They are recommended for books over 1".

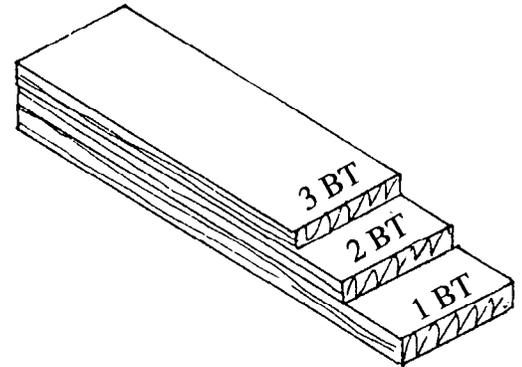


The design for this corrugated box was developed by Andrea Krupp and Lillian Greenberg of the Library Company of Philadelphia and originally printed in *The Abbey Newsletter*, October 1991. Further refinements on the instructions and these illustrations are provided by the staff of the American Philosophical Society.

Like a clam shell from which it derives its name, the corrugated box has a book tray constructed to fit the box and a cover tray that fits over the book tray.

Constructing a Measuring Jig

1. Cut 3 strips of the corrugated board about 12" long.
2. Trim 1 strip to 9" long and trim 1 strip to 6" long.
3. Glue all 3 strips together with one end even. The other end will be stepped.
4. Mark the longest strip 1 BT (board thickness). Mark the middle strip 2 BT and the shortest strip 3 BT.



Measure the Book

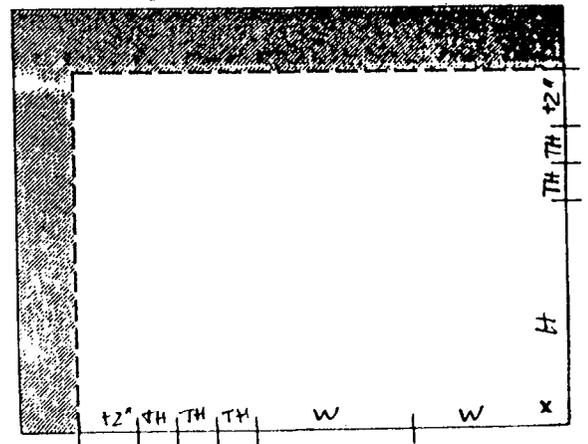
5. Using a piece of paper (page 37), measure the book height (A), width (B) and thickness (C).

NOTE: Not all books are square. Be sure to measure the tallest, widest and thickest part of the book.

Transfer the Measurements and Rough Cut the Corrugated Board

NOTE: The corrugations of the board run parallel to the height of the book.

6. Square a piece of corrugated board on a paper cutter or using a carpenters' square. Mark the square corner with an "X".
7. Starting at the squared corner and working to the left, mark 2 widths (B), plus 3 thickness (C) plus about 2".
8. Again starting at the squared corner and working upward, mark 1 height (A) plus 2 thickness (C) plus 2".



9. Cut the board to size with a paper cutter or sharp utility knife.

Laying Out Cutting and Folding Lines

Vertical Measurements

10. Starting at the bottom left hand corner, mark 1 thickness (C) plus 1 BT. This is the thickness of the cover tray wall.

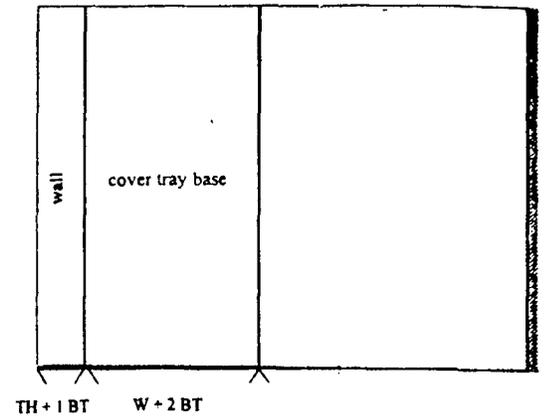
11. Add the width of the book (B) plus 2 BT. This is the width of the cover tray base.

12. Add the thickness of the book (C) plus 2 BT. This is the thickness of the spine.

13. Add the width of the book (B) plus 1 BT. This is the width of the book tray base.

14. Add the thickness of the book (C) plus 1 BT to mark the thickness of the book tray wall.

15. Draw lines using a triangle or carpenters square. Trim off excess board.

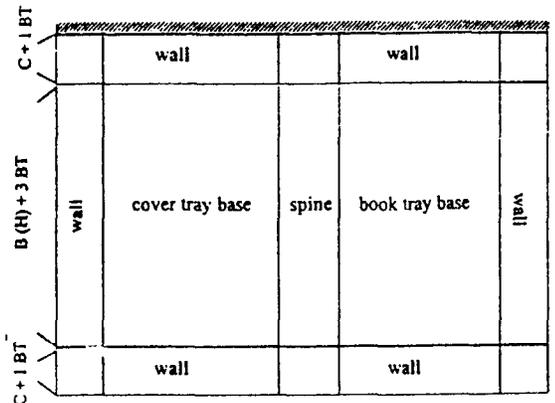
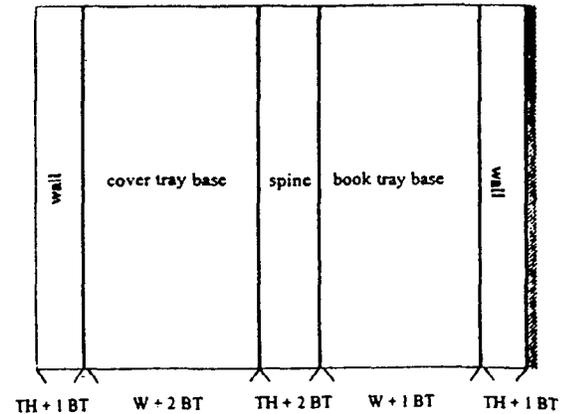


Horizontal Measurement

16. Starting at the bottom left hand corner, mark the thickness of the book (C) plus 1 BT. This is the thickness of the cover tray wall.

17. Add the height of the book (B) plus 3 BT to mark the height of the cover tray base.

18. Add the thickness of the book (C) plus 1 BT. This is the thickness of the cover tray wall.



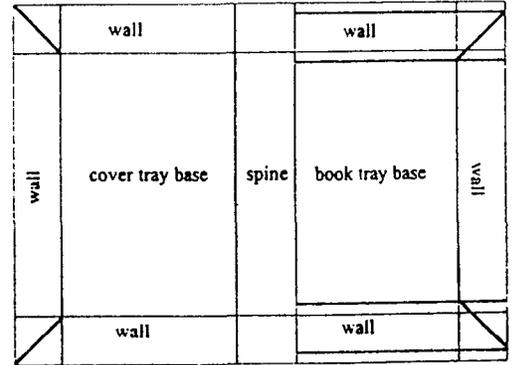
19. Draw lines using a triangle or carpenters square. Trim off excess board.

Decreasing Book Tray and Cutting Excess

The book tray must be smaller than the cover tray so the two trays will nest inside one another when the box is closed.

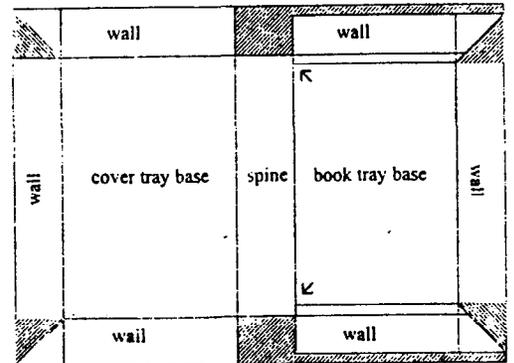
20. Use the BT measuring jig to move the upper and lower book tray walls inward by 1 BT.

21. Draw diagonal lines from the outer corners of the tray bases to the corners of the walls.

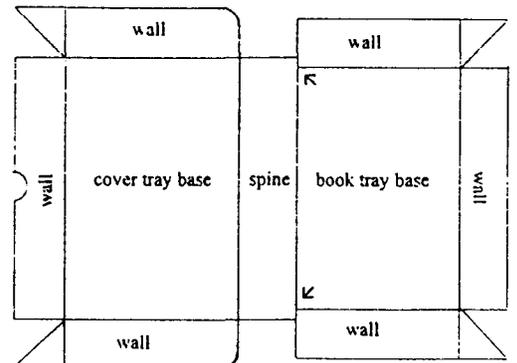


22. Cut away the shaded areas with a mat knife.

Note: Extend the cuts in the new shortened book tray base lines. See the arrows.



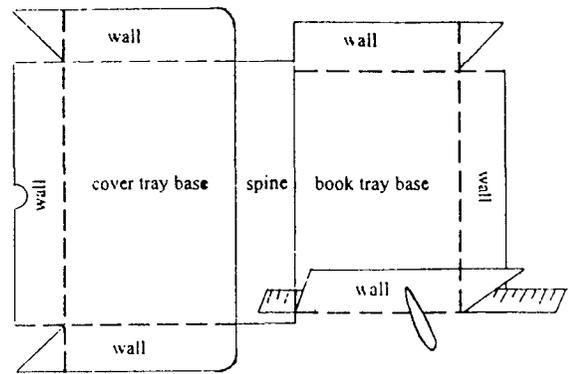
23. Round the corners of the cover tray top and bottom walls and cut a thumb notch on the cover tray fore edge wall. Use a gouge and mallet or scissors.



CONSERVATION BOOK REPAIR

Folding and Creasing Box Lines

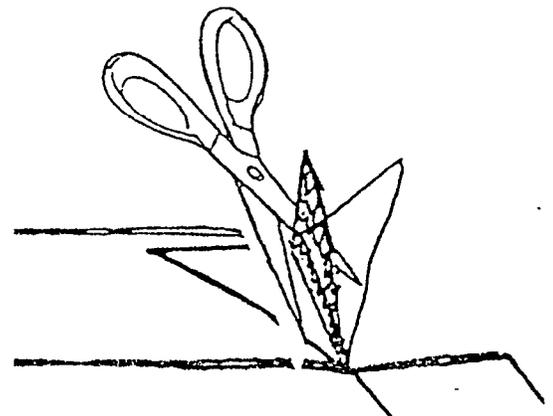
24. Using the rounded end of a folder, score all of the dotted fold lines lightly.
25. Lay a ruler along the scored lines and fold the cardboard against the ruler. Use the folder to sharpen the folds.



Cutting and Attaching the Tabs

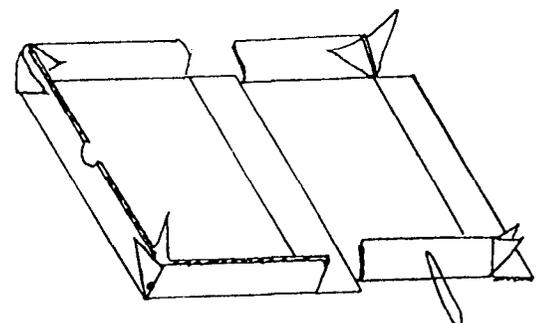
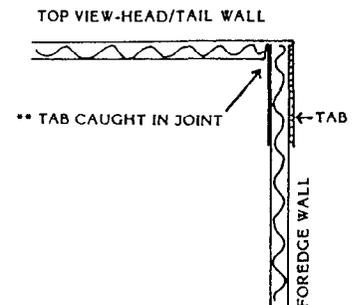
The corrugated board is constructed of two outer layers surrounding a layer of corrugated core.

26. Using the pointed end of a folder, separate the two outer layer from the corrugated core.
27. Fold the outer layers back on the scored line. Use scissors to carefully cut away the corrugated core. **Do not** cut through the corrugated core.



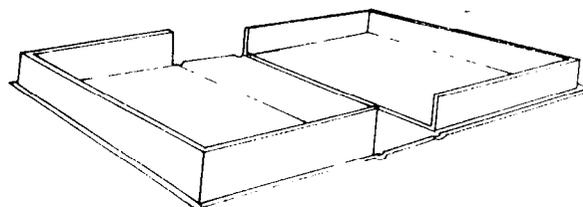
Gluing the Corner Tabs to Construct the Box

28. Use PVA to glue the corner tabs in place. Push the inner tabs well down into the corner joints.
29. Use binders' clips to hold the tabs in place while they dry.
30. Label the spine, place the book in the box and shelve.



4. FULL CLAM SHELL BOXES

Full clam shell boxes are constructed of book board and book cloth. They are usually used as permanent protection for valuable library materials. Constructing a full clam shell box is beyond the scope of this manual. Complete instructions for constructing a variety of boxes are given in *Boxes for the Protection of Rare Books* published by the Library of Congress.



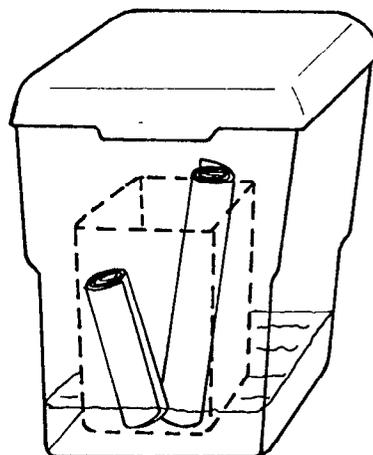
J. FLATTENING ROLLED OR FOLDED MATERIALS

Some materials, such as maps, arrive folded or rolled. These materials are easier to flatten when they are humidified, then dried under pressure.

1. HUMIDIFYING MATERIALS

Humidifying is a process of carefully introducing moisture into paper and then drying it under controlled conditions.

A simple but effective humidifier can be constructed out of two plastic garbage cans. The materials in the humidifier will absorb moisture without ever coming in direct contact with the water.



Place the materials to be flattened in a small garbage can.

Pour about 3 - 4" of water in the large plastic garbage can and place the small plastic garbage can in the water. Hot water will work a little faster than cold.

CONSERVATION BOOK REPAIR

To increase the speed with which the materials absorb the moisture in the humidifier, moisten two pieces of blotter paper and clip them to each side of the small garbage can.

Damp blotters act as a sponge, raising the moisture level inside the container so the paper absorbs the moisture faster.

Remember that the water should NEVER come in direct contact with the materials.

Leave the smaller container uncovered and cover the large container with the lid or a tight fitting plastic bag. Humidifying can take from 1 - 24 hours.

2. FLATTENING MATERIALS

When the materials feel damp and limp, they have absorbed enough water to be flatten.

Place blotters beneath the material, unroll them with the curl towards the table, cover with a layer of Hollytex and/or Mylar. Cover this "sandwich" with glass plates or pieces of board and let dry.

When the materials are not cool to the touch, they are completely dry.

K. MYLAR ENCAPSULATION

Encapsulation is a technique designed to give added support to paper documents and to protect them from physical wear and tear. The paper is enclosed between two sheets of clear polyester film (Mylar) and the edges are sealed with 1/4" double-coated pressure sensitive tape (Scotch #415).

A gridded work surface can be purchased or prepared by taping 1/4" graph paper to the underside of a piece of Plexiglas or glass. This surface will aid in placement and applying tape in a straight line.

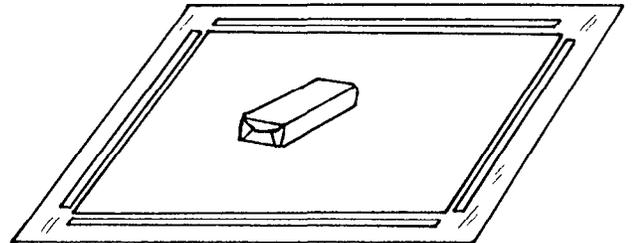
Labels can be attached to the document or on the outside of the finished Mylar encapsulation.

Cut two pieces of Mylar about 2" wider and longer than the document.

Place one sheet of Mylar on a work surface. Wipe the surface of the Mylar with a lint-free cloth to remove dust and create a static electric charge. This charge will cause the document to adhere itself to the Mylar.

Center the document on one piece of Mylar and weight it down.

Apply a strip of Scotch #415 tape along each side of the document. The edge of the tape should be about 1/2" from the edge of the document.

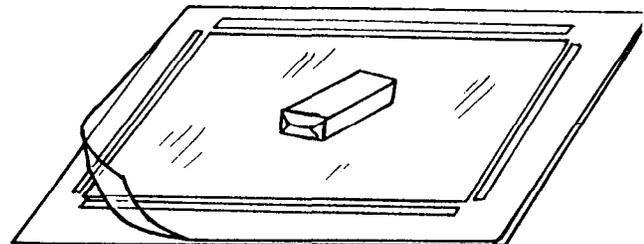


The tape should stop about 1/8" before from each corner so air can escape when the second piece of Mylar is attached.

Wipe the second piece of Mylar with a lint free cloth.

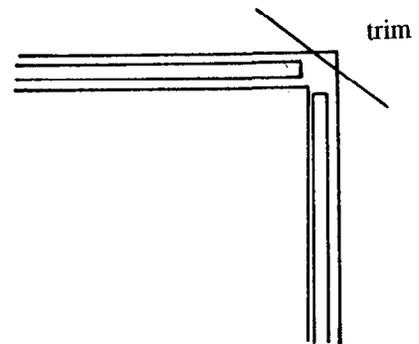
Remove the weight on the document. Position the second piece of Mylar, wiped side down, on top of the document. Replace the weight.

Pick up one corner of the top piece of Mylar. Remove the backing on one piece of tape. Press the Mylar onto the tape.



Repeat this process on the three other sides of the document.

Trim the margins of the Mylar to 1/8" from the tape. Angle cut the corners to prevent injuries to staff or patrons.



L. DISASTER PREPAREDNESS AND RECOVERY

Preparing for disasters is an important part of maintaining a library collection. Several titles listed in the BIBLIOGRAPHY discuss disaster preparedness and recovery in detail.