# Preserving Newspapers: When and How To

by **Kathy Ludwig** with **Bryan Johnson**

Most people discard and recycle their papers, but some editions that are considered special may be worth preserving and retaining. Preserving the newspapers of today presents a challenge, however, because they are printed on paper that is inherently unstable.

### *Historical Background*

Prior to the mid-1800s, most newspapers were published on paper made from cotton rags. Many of these surviving papers are in excellent condition today, and show little sign of discoloration or brittleness. But producing paper from rags was expensive and, as the century progressed, the supply became insufficient to meet increasing demands. Around the time of the Civil War, wood was introduced as an alternative fiber. Trees were in great abundance. The wood pulp industry grew quickly, which produced a less expensive paper that was also smooth and absorbent—desirable properties for the high speed printing presses that were growing in popularity.

### *Chemical Problems with Newsprint*

Newsprint is not a permanent-quality paper because of the wood impurities that remain in the paper after processing. These include *resins, tannins* and *lignins*. Lignin represents the largest percentage of impurities, 16-35 percent, depending on the type of tree. Lignin is an amorphous substance found in and around the cell walls of the fiber and may be thought of as the cement that glues the plant fibers together.

Lignin itself is not an acid, but when exposed to light, high humidity, and atmospheric pollutants, it promotes acidic reactions in the paper. Acidity causes the fibers to weaken and break, and is the major culprit in causing paper to deteriorate and become discolored and brittle.

Lignin can be extracted if the paper pulp is processed chemically and fully bleached. But most modern newsprint contains a mixture of wood pulp from chemical and mechanical processes. The mechanical process involves grinding the wood to form a pulp, but it does not remove lignin from the fibers.

### *Saving Information in Newspapers*

When newspapers or clippings are valued most for the information they contain, and not as artifacts, reformatting the information on to a more permanent quality medium may be the best preservation option. Archivally processed microfilm will work. (Hundreds of Minnesota newspapers are published daily, many of which are preserved in microform at the MHS.)

Certain kinds of photocopies also will work. Photocopies generated onto a permanent-quality paper—that meets the ANSI Z39.48-1992 Permanence Standard—should last for 300 or more years if stored under normal conditions. (The

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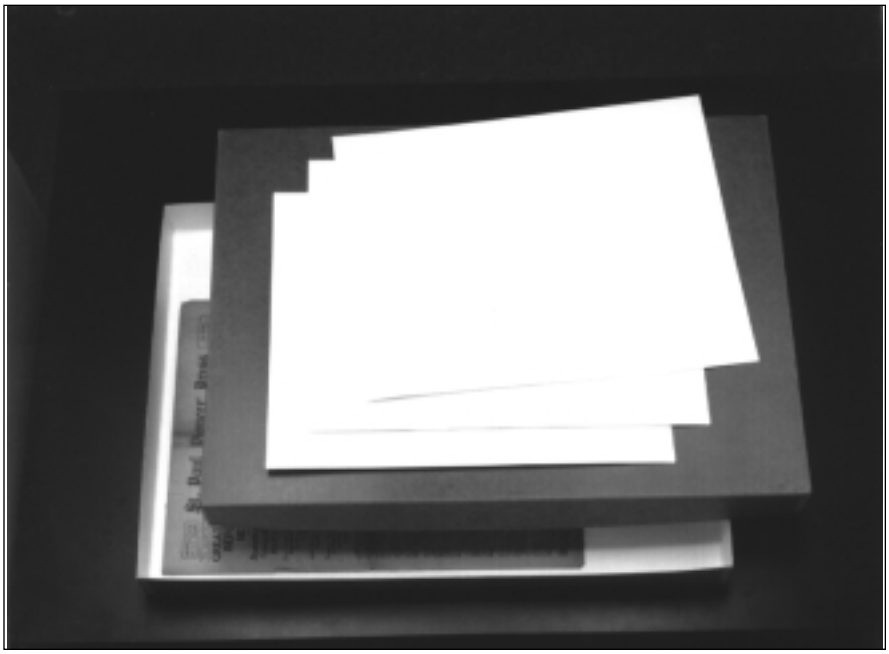

*Minnesota Historical Society photo by Eric Mortenson.*

*This is a lignin-free storage box used in the newspaper collections at the Minnesota Historical Society. On the top are sheets of permanent quality paper used for interleaving newsprint pages.*

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permanence standard specifies that paper materials be formulated without acidic components, and that an alkaline compound be added to the paper or board to absorb acids as they are generated.)

When papers are valued as artifacts, however, preservation requires a stable environment and non-damaging storage materials.

## *Saving Newspapers: Environment and Storage*

Storing the papers in a dark, stable environment of 60-70° F and 40-50 percent relative humidity will slow the rate of deterioration. A central location in one's home is usually recommended for storage, not the attic nor basement or garage. An attic can become quite hot and basements and garages are often damp. Excessive dampness or humidity—above 65 percent—is conducive to mold growth.

*Minnesota Historical Society photo by Eric Mortenson.*

*3M double-stick tape is being applied to the polyester film (Mylar D or Melinex #516), leaving a 1/4" margin from the document. Gloves help prevent fingerprints from marking the film. Note that a weight has been placed on a clean sheet to hold the document in place.*

It is also important to store papers flat and in contact with materials that will not contribute to further damage. A chemical transfer called "acid migration" can occur in papers in contact with one another: The more acidic sheets transfer acids to less acidic sheets. To prevent this damage, the quality of cardboard boxes or paper storage folders should meet the permanence specification, and materials within the enclosure should be interleaved with permanent quality paper.

## *Saving Newspapers: Encapsulation (Not Lamination)*

Newsprint may also be protected by polyester film *encapsulation* or in plastic sleeves. Encapsulation was developed and tested by the Library of Congress to protect fragile and brittle papers. This process involves placing the sheet of newsprint between two clear sheets of a polyester film and sealing the film to itself, not to the paper. The film is sealed around the edge with a double-stick tape, or by machines designed to bond the film.

Encapsulation is preferred to lamination, which melts plastic into the paper and is difficult or impossible to reverse. In addition, often we do not know the long-term aging effects of the plastics or adhesives used in lamination. The encapsulation process allows one to reverse the procedure without damage to the paper.

Safe plastics for paper storage include pure polyester, polypropylene and polyethylene. These materials have no additives or surface coatings that can adversely affect the paper over time. Permanent-quality paper boxes and folders, plastic sleeves and encapsulation materials can be purchased from the conservation suppliers listed in the box on page 4.

However, even papers that are encapsulated or placed in plastic sleeves will generate acidic gases that are trapped inside the envelope and cause deterioration. These gases need to be neutralized; there is an additional procedure that can chemically stabilize the acidic gases.

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*Chemical Stabilization of Acids in Paper*

This procedure, called *deacidification,* is designed to neutralize the paper's acidity and leave an alkaline salt behind to absorb future acids. This chemical treatment does not stop future deterioration or restore the paper's original color or strength, but it will slow the rate of deterioration, and extend the useful life of the paper three-to-five times.

Deacidification is recommended for all papers that are encapsulated or placed in plastic sleeves. If deacidification is not possible for a sheet that requires physical protection, it will be beneficial to place a sheet of permanent-quality paper inside the capsule or sleeve. Deacidification is best performed by a conservator who can assess the paper's condition and provide the most appropriate treatment.

A list of conservation service vendors, who provide both encapsulation and deacidification services, is available from the MHS Conservation Department, (612) 297-5664.

**Kathy Ludwig** is archives conservator and **Bryan Johnson** is conservation assistant in the Harold and Ebba Hoffman Book/Paper Conservation Lab of the Minnesota Historical Society, located in the Minnesota History Center.

## Some Useful Publications

*Preserving Newspapers* was published in 1995 by The Preservation Directorate, an office in the Library of Congress, Washington, D.C. 20540-4500; phone (202) 707-5213; fax (202) 707-3434.

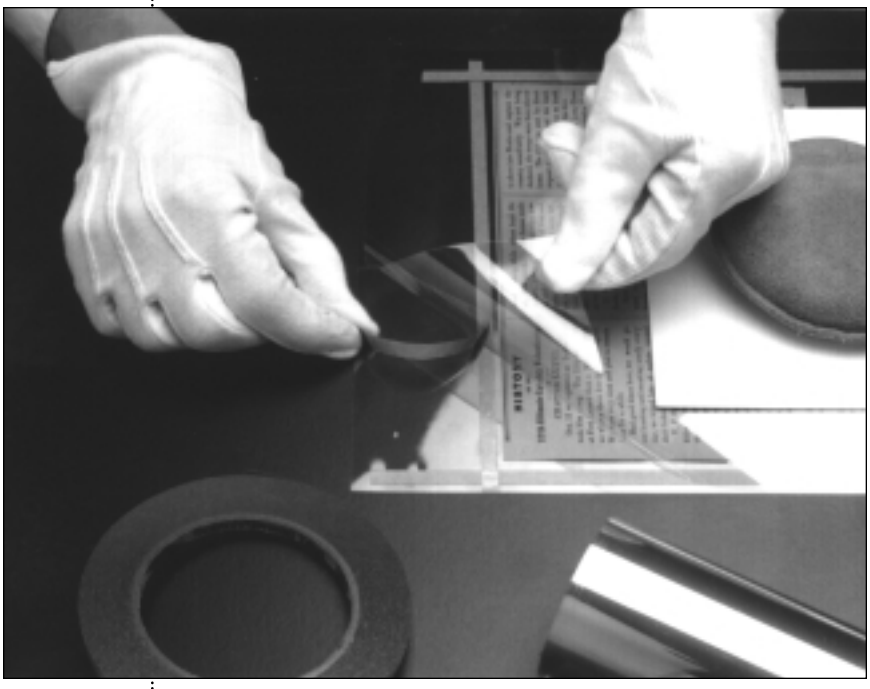
A Technical Leaflet titled *Encapsulation in Polyester Film Using Double-sided Tape* was published in 1992 by the Northeast Document Conservation Center, 100 Brickstone Square, Andover, Mass. 01810-1494; phone (508) 470-1010; fax (508) 475-6021.

**Free catalogs may be obtained by contacting the following vendors:**

Gaylord Bros. Partnership Services, P.O. Box 4901, Syracuse, NY 13221-4901. Call 1-800-448-6160 or fax 1-800-272-3412.

Light Impressions, 439 Monroe Ave., P.O. Box 940, Rochester, NY 14603-0940. Call 1-800-828-6216 or fax 1-800-828-5539.

University Products, Inc., 517 Main Street, P.O. Box 101, Holyoke, MA 01041-0101. Call 1-800-762-1165 or fax 1-800-532-9281.



*To seal the encapsulation, remove the silicon release paper from the double-stick tape. To ensure a good bond, wipe the taped film with a lint-free cloth or rub it with a paper folder Minnesota Historical Society photo by Eric Mortenson..*

## Keep Those Publicity Fliers and Brochures Coming

The Minnesota History Center's large brochure rack on the first level is a well-used source of information about programs and places of interest. It is a good place to display your brochures and/or promotional materials. Please send up to 500 standard-size brochures to: Merry van den Honert, Minnesota History Center, 345 Kellogg Boulevard West, St. Paul, MN 55102-1906.