OUT OF THE ARCHIVES How to house your photographs like an archivist

PEOPLE OFTEN ASK ME, "Is this [Tupperware/album/ binder/shoe box etc.] a safe place to keep my photos?" Everybody from long-time professional contacts to my Great Uncle Steve (he asked about the shoebox) wants to know whether they're doing right by the images in their care. My response usually starts with, "It *depends on...*," which is understandably frustrating for a lot of folks. Why am I vague about this particular subject? A strict set of standards based on years of preservation research and testing guide the housing selections of archivists and other collections professionals. These standards are not always within the reach of individual collectors, family archives, or personal archiving projects.

ARTICLE

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PHOTOGRAPHS

Collection of the Center

Archival supply catalogs and websites typically label products that have passed the Photographic Activity Test (PAT). This logo is from Gaylord Archival's website



Intent (how long do you need your photographs to last?) and budget (how much can you spend?) will ultimately dictate the level of preservation you wish to pursue. Also, keep in mind that the long-term preservation of photographic materials depends on several factors (not just housing), which include the photographic formats in your collection, their age and level of deterioration, and the environmental conditions (temperature and relative humidity) of their storage space. However, understanding the existing best practices surrounding long-term housing is still worthwhile. It is a great step toward making an intentional preservation plan for your collection. Plus, it is important to know which types of housing to avoid-some materials are damaging to photographs over time. So buckle up, Uncle Steve; you may want to rethink that shoebox!

Standards

Photographic storage enclosures and containers are available in several different formats including boxes, sleeves, envelopes, folders, albums, and binders. Many product descriptions mention the word "archival," but do not always include evidence to back up that claim. To identify preservation-grade products, I first check whether the material under consideration meets International Organization for Standardization (ISO) specifications for photo-safe storage—specifically ISO 18902 and ISO 18916.

These standards provide specifications on photosafe album, storage, and framing supplies and require that all products pass the Photographic Activity Test (PAT). This article deals with many aspects of the ISO specs, so I will not discuss them all in detail here, but I do want to take a moment to consider the PAT. In essence, the PAT is an accelerated aging test that screens various storage and display products for their potential chemical reactivity with photographic processes including silver-gelatin, chromogenic, inkjet (dye and pigment), dye-diffusion transfer, electrophotography (dry and liquid toner), and diazo. Archival and photographic supply catalogs typically indicate whether materials have passed the PAT, so they're usually pretty easy to identify. If the PAT is not mentioned in a product's specifications, inquire with the vendor or manufacturer before purchasing.

Storage materials: paper versus plastic

Archivists typically prefer to house photographic materials individually within an enclosure (a sleeve, page, envelope, or folder) and then store multiple enclosures in a larger container (usually a box, case, binder, or cabinet). Note that while I will focus on enclosures here, the same considerations regarding material composition also apply to containers. Housing for photographic materials should be composed of chemically inert, stable plastic or archival-quality paper. Your choice of enclosure will depend on how you are using your collection. There are advantages and disadvantages to both plastic and paper.

Plastic

Plastic enclosures (such as PrintFile pages for slides and negatives or polyester encapsulation for prints) are a popular storage option, especially for collections that are browsed frequently. Plastic's transparency makes it easy to visually inspect collections without having to touch original materials with your bare hands (perspiration can permanently damage photographic emulsions). In general, plastic enclosures should be chemically stable, pass the PAT, and made of polyester, polypropylene, or polyethylene. Of these three, polyester is the most supportive and chemically inert, however, it is also the most expensive. Also, I should note that polyvinylchloride (PVC or vinyl) products are not acceptable for long-term storage. They are chemically unstable, and as they age, they emit byproducts that damage photographs.

When choosing between plastic storage options, one should avoid abrasive-coated sleeves or enclosures that contain additives. These substances can migrate to the surface of the enclosure and the photographs stored within it. It is difficult to visually identify plastics with additives or surface coatings; however, a reputable archival vendor should be able to steer you toward the appropriate enclosure.





Above: Southern Railway steam locomotive 4501 leads the Circus World Museum's Circus Train across the Wisconsin River on the Chicago & North Western at Merrimac, Wisconsin, on June 29, 1973. Photograph by John Gruber, Gruber-05S-31-09

Left: Slides from the Glenn Oestreich Collection stored in archival plastic pages inside a three-ring box binder. While plastic enclosures are convenient, they come with a few drawbacks. Some plastics, especially polyester, facilitate the build-up of static electricity, which attracts dirt or dust that can damage the surfaces of prints and negatives. Static can also cause further image loss to photographs with lifting or flaking emulsions. Plus, moisture is a potential issue for plastic enclosures. If your space floods or is subjected to high levels of humidity, plastic enclosures can trap moisture and may alter the surfaces of images as they dry. Plastic enclosures are not recommended for older safety films (cellulose acetate based films) and cellulose nitrate based films as they trap off-gassing acids, accelerating these materials' rates of decomposition.

Paper

Depending on your situation, paper or paperboard enclosures can be a great alternative to plastic. Paper enclosures are opaque, which makes them somewhat impractical for heavily-used collections, but also means that they more effective than plastic at protecting photographs from light. Note that seamless (also referred to as "four-flap") paper envelopes rather than seamed envelopes are recommended for collections that require frequent viewing; they help prevent potential mechanical damage from occurring when

Glass plate negatives from the Jim Shaughnessy Collection are stored in four-flap (seamless) paper envelopes.



photographs are removed from their sleeves. It is also important to note that paper's porousness gives it an edge over plastic in many cases; it stops moisture and harmful off-gases from becoming trapped within the enclosure. On a (perhaps) more trivial note, paper is also less expensive than plastic and easier to write on. Note that most archivists recommend using a soft no. 2 pencil to label paper enclosures, because it is easily reversible should you ever need to relabel, and pencil lead is relatively inert.

Paper enclosures used for long-term storage should pass the PAT, have a high alpha cellulose content, contain less than 0.0008% of reducible sulphur, and be free of alum-rosin sizing and unpurified wood pulp. Typical paper products, like envelopes and folders you would find in the school or office supply aisle at the supermarket, are usually composed from groundwood, which contains lignin. Over time, these papers produce deleterious acids after repeated exposure to light and heat. When selecting paper enclosures, opt for products that are described as "acid-free" and "lignin-free" (you will want to doublecheck product specifications to confirm that this is indeed the case). These papers are composed of cotton, linen, or wood fibers that have been chemically treated to remove lignin content. All components of paper enclosures need to be held to archival standards. For example, adhesives (used to seal seamed envelopes) should be acid-free and non-reactive with silver.

When reviewing options for paper enclosures, "buffered" and "unbuffered" are two descriptive terms that you will likely encounter. "Buffered" refers to paper-based enclosures and containers that contain additive calcium carbonate to raise the pH level of the storage material to the alkaline side (7.5 to 9.5) of the scale. This alkaline environment is meant to neutralize highly acidic materials and protect them from acids that can migrate from neighboring boxes and objects. Unbuffered enclosures have a neutral pH (6.5 to 7.5) and do not contain alkaline additives.

Preservation circles have long debated the ideal pH level for various photographic processes. The general consensus is that storage in buffered enclosures can be highly beneficial for most processes, especially cellulose acetate and nitrate film, prints mounted or backed with acidic material, and photographs that have been stored under uncontrolled environmental conditions. Depending on which source you consult, cyanotypes, dye transfer prints, and sometimes albumen prints should be stored in unbuffered housing due to their sensitivity to alkalinity. Some guidelines also include color prints, negatives, and slides in this group, but recent research indicates that buffered enclosures are safe for these materials.

What to avoid

Keeping all of these standards in mind, there are a few paper-based products to avoid. In the past, many photographers chose to store materials in glassine sleeves. However, archivists no longer recommend glassine because it is hygroscopic, meaning it is prone to absorb moisture and contaminants from its storage environment. In high humidity conditions, it can warp and even adhere to photographic materials. In addition, and while it probably goes without saying, Kraft paper envelopes, manila folders, and cardboard materials are also not recommended. It is also safe to assume that most vintage paper-based enclosures are not up to current standards. If you encounter these types of enclosures in your collection, it is best to rehouse your materials.

Containers and physical arrangement

Once you have placed all of your photographic materials in enclosures, you will want to consider what type of container is the best fit for your collection. Archivists often opt for sturdy, standard-compliant paperboard boxes that are sized appropriately for the format they are intended to store. Boxes designed for standard print and negative sizes are readily available from various vendors, although custom boxes may be required for oversized materials. Albums and binders, when constructed from the right material, are also good storage choices for photographic collections. Just make sure to avoid magnetic-page photo albums, which often contain an adhesive that discolors images and makes removing anything from the album extremely difficult after a few years. Metal boxes, drawers, and cabinets composed of noncombustible and noncorrosive material, like steel with a powder-coated finish, may also serve as appropriate containers. Do not use wooden storage furniture (for all of the reasons I mentioned in my earlier discussion of paper enclosures) for the long-term housing of photographic materials.

When deciding on the physical arrangement of photograph collections, archivists usually attempt to house similar formats and sizes together as much as possible. Different processes may have varying preservation/housing needs, and some formats can



be actively detrimental to each other when stored in close proximity. Whenever possible, archivists house negatives (specifically cellulose acetate and nitrate based film) separately from photographic prints, as the negatives emit harmful gasses as they age. Housing images by size is also considered a best practice. When packed too tightly or too loosely within a container, differently sized photographic materials can distort one another over time.

Generally speaking, prints and negatives may be stored either horizontally or vertically (resting on their longest edge). Small to moderate sized formats Canadian National Railway electric commuter train at a suburban station in Montreal, Quebec, on July 22, 1970. Photograph by Jim Shaughnessy, Shaughnessy-N-CN-1232

Collection	Processing Status
Jim Shaughnessy	In progress, $\sim 22\%$ complete
John Gruber	In progress, ~15% complete
Ron Hill	In progress, $\sim 50\%$ complete
Jim McClellan	In progress, ~30% complete
David Mainey	In progress, $\sim 40\%$ complete
Karl Zimmermann	Next up, estimated start: 2022
John Ilman	Estimated start: 2022~2023
Stan Kistler	Estimated start: 2022~2023



Above: Collections processing status and queue at the Center. We receive many inquiries about the processing status of our various collections and what we will be working on next. We publish updates here and on our website.

Above, right: The Center opted to store large-format negatives from the Jim Shaughnessy Collection in seamed, buffered paper envelopes.

Opposite: Canadian National Railway steam locomotives 6207 and 6258 at Brockville, Ontario, Canada, on the night of August 23, 1958. Photograph by Jim Shaughnessy, Shaughnessy-N-CN-0445 in good condition can be stored upright as long as the container is packed snugly enough to prevent slumping (this can lead to curling). With that said, hanging and suspended filing systems are not recommended for long term storage, because hanging folders tend to eventually lose their shape, leading to unsupported and damaged prints. Flat storage is a less convenient filing system than vertical, but it is optimal to avoid curling. As a rule, most archives house oversized materials (larger than 8x10 inches) horizontally in shallow drawers or boxes. When storing materials horizontally, avoid packing the container too deeply. Pressure on items at the bottom can damage mounted prints or exacerbate the possibility of altering the surfaces of images within plastic sleeves.

Railroad Heritage Visual Archive updates

At our main office in Madison, Archives Associate Natalie Krecek and Intern Wesley Sonheim continue processing film negatives from the Jim Shaughnessy Collection. The negatives are arranged alphabetically by railroad, so we are tracking our progress letter by letter. So far, we've processed about 7,103 negatives and are well into Shaughnessy's Delaware & Hudson series. The D&H was one of Shaughnessy's favorite railroad subjects and accounts for a majority of the remaining unprocessed boxes.

Another top processing priority is the collection of the Center's founder, John Gruber. His collection contains approximately 109,000 images that date from the late 1940s to 2018. We started digitizing and rehousing the collection last autumn; interns Valerie Lines and John Walker have been working in tandem. Valerie is surveying the slides in the collection and making selections for digitization while John is digitizing the negatives to the item level. John will be leaving us for the summer, so you can expect to see a new face on the collections team soon. In addition, volunteer John Kelly has made some great further contributions to their efforts, augmenting our catalog records with additional identification information for each image.

Out at our archival storage facility, Contract Archivist Heather Sonntag is processing the 23,000 color slides that make up the Ron Hill Collection. This work has included surveying and arranging the collection and, recently, digitization. Meanwhile, Contract Archivist Gil Taylor has recently finished surveying the Jim McClellan Collection and is moving on to digitizing and rehousing the materials. Dating from 1958 to 2003, the McClellan Collection contains 25,000 slides (13,000 of which are rail-related) and 134 reels of Super 8 film (sixty are rail-related). Figuring out how to digitize the moving image film has been an interesting aspect of Gil's work with the collection. You can look forward to seeing some results of Gil's efforts on YouTube soon!

Follow us on our website, <u>www.railphoto-art.org</u>, and our many social media channels (@railphotoart on Facebook, Instagram, Flickr, Twitter, and YouTube) to stay up to date on our collections processing work. •





Above: Canadian National Railway steam locomotive 6218 crosses a bridge over Chutes de Sainte-Ursule in Quebec, Canada, on May 16, 1970. Photograph by Jim Shaughnessy, Shaughnessy-N-CN-0105

Right: Illini Railroad Club excursion on the Burlington between Chicago and Galesburg, Illinois, on December 18, 1960. Photograph by John Gruber, Gruber-02-051-107

Opposite: Children hold hands as they inspect Chicago, Burlington & Quincy steam locomotive 5632 during an Illini Railroad Club excursion from Chicago to the Twin Cities on July 1, 1961. Photograph by John Gruber, Gruber-03-025-006

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