A Self-Preservation Guide for Film/Video-Makers

by Bill Brand with Toni Treadway[1]

Most artists and filmmakers are better at making art than keeping track of the art they make—especially films and videos. Even if we know we *should* take better care of our work, we are stopped in our tracks by what we think is too enormous, too time-consuming and too costly an effort. We feel we must make a choice between producing new works and preserving old ones. But doing only a little, or a little at a time, can go a long way toward preserving our work and can actually help set the conditions for completing new projects. With only a little effort we can make it a lot easier for others to preserve our work in the future.

We may not want to think about it, but left unattended, our work is likely to become irreparably damaged or decayed, lost or ignored. We all need to pay attention and take action, whether our work currently has no public recognition or even if it's been exhibited widely and is represented by a gallery, distributor or agent.

With this in mind, here is a simple guide written for artists with the goal of encouraging us to take whatever steps we can to preserve our work. Excellent and detailed guides are available on the Internet[2] and we encourage you to consult them in conjunction with this guide for a more thorough understanding of the subject. However, while most of these guides are written for archives and libraries, this one is written especially for artists and filmmakers.

It is certainly best to have your work professionally archived. But there is much you can do on your own, without relying on the limited resources and vision of major institutions. Moving image preservation is a new and constantly evolving field and advice, even from the top experts, is constantly subject to revision. But once you understand some of the basic principles, applying common sense will give the best results.

This guide is divided into 5 sections:

- **Locate, List and Remove From Harm**
- **Inspect, Label and Improve Containers**
- **Annotate and Place**
- **Distribute and Imagine**
- **A Case Study**

It is better to do something than nothing. If you can only do one thing, start with the easiest or the most urgent task. Do some of this for only some of your work, some of this for all your work, or if you can, all of this for all of your work. But do what you can even if only a little bit at a time.[3] Take care of the most urgent needs first.[4]

Start with these immediate tasks:

Locate, List and Remove From Harm

1. Locate your films. Do you know where they are? Make a list of the general locations where originals, prints and other materials and documents can be found (e.g., bedroom closet on Chestnut Street, ex-husband's garage in Rochester, Film Lab in Minneapolis, Art Storage in Fort Lee, NJ, Museum of Modern Art).

2. Move originals, prints and other materials to a relatively cool and dry location from especially unsafe places such as basements, garages, attics, under sinks, on window sills, near radiators or heaters. For magnetic materials—such as video tapes, audio tapes, magnetic tracks and computer disks—move them away from magnetic fields such as those produced by heavy-duty electrical cables, stereo speakers, electrical equipment and transformers.

3. Retrieve originals or printing masters from laboratories. When labs go out of business or change ownership they often throw out or lose the films in their vaults.

4. If your work is stored at a commercial storage facility, check on it regularly to make sure the facility is still in business or is maintaining the standards you expected when you placed your work there.

5. Make a list of your films, installations and video works, if you don't already have one. Look through old program notes, résumés, exhibition calendars and reviews in order to remember what projects you've done.

6. Identify someone who will care about your work should you leave it behind when you move or die. Let that person know where your films are kept and give that person a copy of your list of works.

7. Find a friend, intern or archivist graduate student to help you with these tasks.[5] It may give you a headache to even think about doing this work, but others actually relish the opportunity to dive into and make order out of dusty boxes.

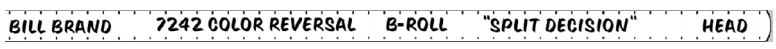
If you can do more, here are the next steps to take:

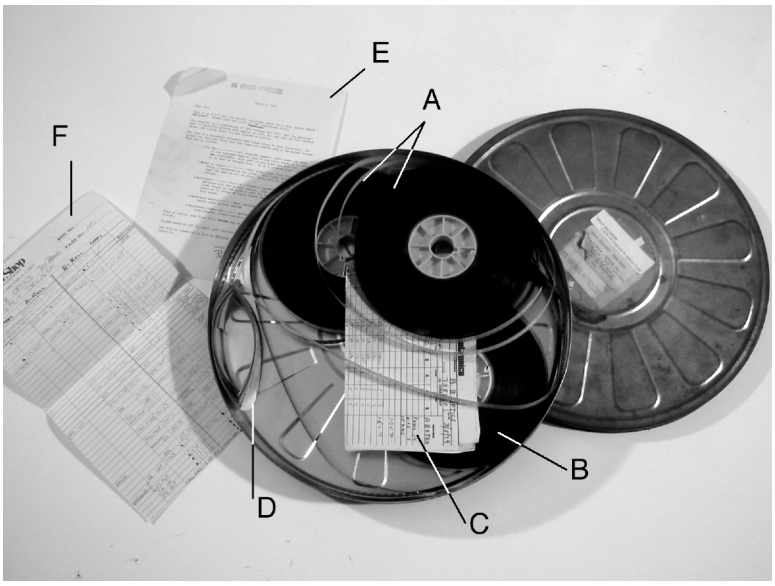
Inspect, Label and Improve Containers

8. Open the boxes, cans or drawers and inspect the materials. Identify each item and confirm that the labeling on the can or box conforms to what's inside. Include obvious information like title, artist name, date, gauge (e.g.,16mm film), reversal or negative, original or print, a-wind or b-wind.

8.1. If the identifying label is on tape or gummed paper, copy the information directly onto the container with a permanent marker. Gummed labels and tapes dry up and fall off. We've seen boxes of films with nothing but a pile of detached labels on the bottom.

8.2. Identify the reel by labeling the head leader. A permanent marker, such as a Sharpie, is good but even better is an indelible ink pen, such as a Staedtler. (See below).





Lab can with 16mm original reels and papers. Plastic bags removed.
A: A&B rolls, B: Optical negative track, C: Film timer's cue sheet, D: Printer light control punch tape, E: Notes to timer from filmmaker, F: Chart of fades and dissolves for timer

8.3. If there is no identifying label and you can't figure out what the item is by looking at it, then label it "unknown" with a note about where you found it and the current date (e.g., "unknown–1/17/06 found in box with 'My Big Movie' outtakes").

9. Replace the containers that are dented or rusted. (See 12 for further discussion about containers.)

10. Remove the plastic or paper laboratory bags around your films. Harm can come to film sealed in a container, including a plastic bag. It does protect it from dust, but it also prevents the escape of acetic acid and this can accelerate acetate deterioration, sometimes called "vinegar syndrome" (see following page). Some archivists think you should also remove from the container any paper items such as notes to the lab, timer and printer notes or paper timing tapes since these are most likely acidic. But since it is also very important to keep the paper records associated with the film because they contain vital clues for future duplication, printing or archiving, we are recommending that you DON'T remove the paper trail. Keep them with the film.

11. Separate magnetic tracks from picture materials because these are especially susceptible to "vinegar syndrome" and may accelerate the acetate deterioration of the other reels in the container.

12. Replace ordinary cardboard boxes or sealed containers with vented cans or acid free boxes. Be sure to transfer any labeling information from the old containers to the new ones.

Acetate Decomposition: Vinegar Syndrome

Acetate base film is subject to the so-called vinegar syndrome. The term 'vinegar syndrome' is taken from the distinct odor that is given off by deteriorating acetate film. Vinegar syndrome results from a chemical reaction that takes place at the molecular level that can cause serious and irreparable damage to film. When combined with moisture, heat, and acids, the plastic support in the film begins to release acetic acid. The process is an autocatalytic one, meaning that once the degradation begins it starts to 'feed upon itself' and the deterioration process begins to snowball. When film reaches its autocatalytic point the acetic acid released by the film grows exponentially, and with it the potential problems for the film. Climate is an important determining factor in the deterioration because humidity affects the amount of water absorbed by the film and heat supplies energy for the chemical reactions. Even more important is the "micro-environment," a term used to describe the conditions inside the film can. Vinegar syndrome appears to be contagious, so any film suffering from it should be stored apart from "healthy" reels.

The vinegar smell is the most obvious indicator of decaying acetate film, but it is by no means the only one. The condition of the film can be evaluated by using acid detector strips (e.g., IPI's A-D Strips); this approach provides an objective way to determine the state of preservation of the materials and their needs to be further stabilized. White powder on the edges of the film may indicate plasticizers loss. Because of the molecular breakdown of the plastic base, in advanced stages of deterioration the film becomes brittle and shrunken. Films with shrinkage of more than 1% could be damaged by projector mechanisms, so should not be projected. There are techniques for re-dimensioning film (restoring it to a less-shrunken state), but these are temporary measures that can permanently damage the film and should only be done in a lab situation as a last-ditch method to enable a new negative or print to be made.

Acetate Decomposition—Advanced Stages of Decay

The typical pattern for acetate decay is:

1. Vinegar odor
2. Shrinkage
3. Cupping: the film retains a curve. It will not lie flat, but instead appears wavy.
4. Crazing: the emulsion cracks and the image appears as a crazy mosaic.
5. Appearance of white powder on edges (from binder deterioration, this is the plasticizer separating from the film).
6. Film becomes square on reel.
7. Film is no longer flexible and the emulsion flakes off from the base.

From *Film Forever: The Home Film Preservation Guide*

Cleaning film: run the film between the folded cloth with professional film cleaner, holding it firmly with your fingers. Wind slowly through the film so the film cleaner has evaporated before it is wound onto the take-up reel.

CLEANING

(Only after a full inspection)

If the film is dirty or moldy, it can be cleaned gently by hand using a lint-free cotton cloth and professional motion picture film cleaner. Don't use this method if there is perforation damage. Put the film cleaner on the cloth and run the film between the folded cloth, holding it firmly with your fingers. Wind slowly through the film so the film cleaner has evaporated before it is wound onto the take-up reel. It is important not to use water or any other fluid on film, as they could remove the emulsion. Use the film cleaner cautiously: wear clean rubber (not latex) gloves (dishwasher style, not powdered medical gloves), and clean the film in a well-ventilated area. Use only a clean soft cotton cloth that will not scratch the film. Replace the cloth as soon as there is a noticeable build-up of dirt on it.

From *Film Forever: The Home Film Preservation Guide*

13. Consolidate "outtake" reels into larger containers to save shelf space. Be sure to transfer any labeling information from the old containers to each consolidated item.

14. Isolate materials that are moldy or smell like vinegar when held at arms length by placing them in a separate area at least 20 feet from other film, video or audio materials. "Vinegar syndrome" is the common name for acetate decomposition and it is caused by chemical changes that take place in the acetate base of film. This can irreparably deteriorate the film. Heat, moisture and a sealed container work to concentrate the acetic acid released by the deteriorating acetate, accelerating the process. Just opening the can to let in new air can help. A bit of vinegar smell may not mean the immediate demise of your work, but it should move up on your priority list. However, you should deal right away with a film that has a strong vinegar odor. (See "Acetate Decompositon: Vinegar Syndrome" in box on page 88 for dealing with mold and vinegar syndrome.)

15. Build or purchase inexpensive sturdy shelves from a building supply store and set them up in a cool, dry location. If necessary install a dehumidifier. Purchase acid free boxes, or "Rubber Ware" style plastic containers and drill vent holes on two opposite sides. Group your films or tapes in these containers by title, chronology, genre or medium and place them on the shelves.

Still ready for more? Do this:

Annotate and Place

16. Expand your list of works to include notes about each title or project.

- **16.1.** Title, color or b/w, sound or silent, format (e.g., 8mm, 16mm, Hi8 video), total running time, collaborators or important cast, crew or artistic contributors.
- **16.2.** Original gauge, film stock or video format and sound elements and what laboratory was used for making prints (e.g., "16mm, Ektachrome 7242 color reversal, shot at 18 fps but projected at 24 fps, printed to Kodachrome print stock at Filmtronics Lab, NYC, 1976").
- **16.3.** Printing masters, if any (e.g., internegative or reversal).
- **16.4.** Video transfers or masters when done, what lab, what element the transfer was made from (e.g., "Transferred to ¾-inch U-Matic video master in 1980 at Tapehouse, NYC from Kodachrome answer print. 10 VHS dubs made from video master").
- **16.5.** Location of original and master materials including video masters.
- **16.6.** Location of prints or copies.
- **16.7.** Notes about artistic intent, production history or context, especially any non-standard aspects such as intentionally visible splices, color or exposure, long sections of black or white leader, unusual instabilities or features of the image that might get "fixed" by someone in the future who doesn't know your intent.[6]
- **16.8.** Ideas about future use. Suggest if the work must be shown intact or if it is okay to excerpt it in another work, update it or remake it. If you place it with an institution you can specify use.

16.9. Description that might be used in a catalog, program notes or show announcement.

16.10. Exhibition history—where and when was it screened publicly.

16.11. Bibliography—books, catalogs, reviews and articles that discuss or mention the work.

17. One of the most important factors in storing films and videos is maintaining proper temperature and humidity (40°-54° F and 30%-50% relative humidity). Since few of us on our own can meet this standard, the closer we can get the better. A room that is fairly dry and stays at room temperature is a huge improvement over a humid basement or a hot attic. A simple way to monitor the physical environment where your work is stored is to purchase an inexpensive temperature and humidity gauge and watch it. You can get one at most hardware stores for only a few dollars. Even if you *can* store your work in a controlled environment, it may be in danger if that environment places the work where no one can find it, or where no one knows or cares about it. It is just as important to consider accessibility and the appropriateness of placement as it is to consider environmental controls.

18. Imagine that tomorrow you get squished by a bus. What would happen to your work? Here are some suggestions for helping those you leave behind care for the products of your creative life.

18.1. Make a will that specifically mentions your films and videos. You can specify your wishes for each individual work or in general for all of it together.

18.2. If there is someone or an institution you would like to be in charge of your work after you're gone, let them know while you're alive.

18.3. Leave enough notes, labels, workbooks and artistic directions to enable your designated person to find, understand, catalog, preserve and disseminate copies of your films. An archivist can never have too many notes, reviews, programs, technical sheets, stills, interviews and other background on a film if they have to preserve it.

19. You may be able to place your work in an archive or museum that has better storage conditions than you can provide for yourself. Here are some questions to ask yourself as you consider placing your work. We've got no answers here, just questions.

19.1. Is it more important for your work to be with the collection most appropriate to the kind of work you make, or it is better to place it with the institution most likely to survive economic difficulties, changes in cultural fashions or technology?

19.2. Should we be grateful if a museum or archive wants to accept our work for safekeeping? Should we be expecting to sell our work to these cultural institutions for financial gain or for the benefit of our heirs? Even if we're not selling it, what conditions or commitment can we expect that the work will be maintained, preserved, distributed or exhibited?

19.3. Do we have relatives (parents, spouses, partners, siblings or children) that we hope will benefit from our work in the future, even if it has no market value now? Or conversely, do we have relatives who might be negligent, uncaring or greedy? Or finally, do we want to protect our loved ones from having to deal with the work we've made and the people who may make a claim on it one way or the other?

NYU Moving Image Archiving and Preservation graduate students visit the National Archives and Records Administration in 2005. Photo by Howard Besser

19.4. Should we keep all the work together in one place or is it better to disseminate it to the institution most appropriate for each particular work? Will spreading it around serve as insurance against the decline of any one institution?

Get the work seen:
Distribute and Imagine

20. In conclusion, a work is not preserved if it sits on a shelf and no one ever sees it. While you are logging, inspecting, repackaging or relocating your films, think about what you can do to get them seen by placing them with distributors, suggesting curators exhibit them, or by transferring them to a contemporary format like DVD. The more they are seen the more likely they are to be remembered and preserved. Even if the work is best seen as a projection in its original format (e.g., 8mm or 16mm), making it available on video, DVD or online streaming can help generate interest in seeing it in its proper form. Furthermore, if your work is distributed, it is less vulnerable to a catastrophic event, such as a fire or flood.

21. Whether you've taken only the first urgent steps or have completed a more thorough reorganization of your archives, you should sit back a moment and think about your work as a collection. Try to imagine it well organized, safely housed, carefully labeled and appreciatively placed, restored and exhibited. Try to imagine someone helping with the tasks outlined in this guide. Picture your work being appreciated and viewed by audiences you may not currently have. Even baby steps in thinking and acting now can make all the difference in saving your work and making it possible for others to preserve and enjoy it in the future.

A Case Study

22. As a case study, let's say someone has offered to purchase a new print of an old film. Imagine that even if they aren't offering to preserve it, you want to do all you can on your own even though it could cost you more than you'll earn from the sale of the print. Let's say you have a 16mm color reversal film with an optical sound track. You have one print at home and one print with a distributor. You have located the original A&B rolls and the optical negative track. You have even found the workprint and several cans of outtakes. The film was shown a few times in group shows when it was completed decades ago but it has not been exhibited since. You can't just make a new print from the A&B rolls because reversal print stocks are no longer manufactured. So here are the steps to take:

22.1. Locate and identify originals, masters, outtakes and originating materials such as mattes, drawings, scores, production stills, notes to labs and letters to collaborators.

22.2. Inspect originals, masters, outtakes and originating materials to identify variations or versions and evaluate the condition of each element.

22.3. Create an inspection log with digital photographs of the "before" condition and evaluations for "vinegar syndrome," shrinkage, splices, etc. Also copy into the log any information from the can and leader.

22.4. Re-can and label original and master materials, outtakes and prints. Replace shrunken leader or attach new leader if none exists. Save the paper work you find in the can with the A&B rolls including any old notes to the lab, the timer's handwritten or typed timing notes, the paper computer timing tape, and the printer log often taped to the inside lid of the can. These can be crucial clues for making new prints. If the lab that made the old prints still exists, it is possible the lab can still use the old timing numbers. But it is more likely that the old records will only be a guide—although an important onefor creating new prints. This is because new film stocks act differently than the old ones or the lab may need to compensate for fading in the original. You also may want to make the corrections you couldn't manage or afford when you first made the film.

22.5. Create a polyester base preservation optical track and magnetic safety track from the best element. Your lab will help you evaluate which element is best. The most likely element to be considered the best is a 16mm or 35mm magnetic track master or DAT safety track. The next best element will most likely be a positive optical track from a good print. The least likely to be the best element is the optical negative track used with the A&B roll originals.

22.6. Give a lab the original A&B rolls and your best print as a reference for exposure and color timing. If your prints are faded or damaged, the workprint might be the best reference element.

22.7. Make a polyester base color internegative from the A&B rolls, then a positive print from the new internegative and the new optical negative track.[7]

22.8. Inspect and approve the first answer print from the internegative.

22.9. If necessary, recommend corrections.

22.10. If necessary, inspect corrected print.

22.11. Order release prints.

22.12. Make a high quality video master (Digital Betacam or High Definition) from the preservation internegative. Make a DVD master from that and distribution copies from the DVD master.[8]

22.13. If a museum, archive or library is paying for all this work, perhaps through a grant, they will expect to own the internegative. You may want to make a second internegative and optical track and video master for yourself.

22.14. Place and label the master materials and prints in vented archival containers.

22.15. Write a preservation history that describes each step that was taken and the rationale for the decisions that were made.

22.16. Place the internegative and a reference print in an archive or appropriate storage location.

22.17. Exhibit the film. The creation of new preservation negatives and prints can be an occasion for exhibition and critical attention for the work.

Notes

1 The idea for the essay came from years of shared experience with Toni Treadway and from a specific conversation we had at the 2001 conference of the Association of Moving Image Archivists in Portland, Oregon, which focused especially on the problems of small gauge film preservation. Toni was instrumental in organizing that conference.

2 For "preservation basics," see the National Film Preservation Foundation Website at: http://www.filmpreservation.org
see also, The Home Film Preservation Guide at: http://www.filmforever.org
National Film and Sound Archive, Commonwealth of Australia at:
http://www.screensound.gov.au/screensound/screenso.nsf/HeadingPages
Display/PreservationFilm+Preservation+Handbook
Independent Media Arts Preservation (IMAP) "Preservation 101" at:
http://www.imappreserve.org/pres_101/index.html
Keep Moving Images, Preservation information for artists working with the moving image, Lux, UK, at: http://kmi.lux.org.uk/index.html
and Brodsky and Treadway at: http://www.littlefilm.org

3 It is probably more efficient to work in a dedicated period of time such as a solid week or two with a crew of helpers. But rather than wait for an opportunity that may never come, it may be more realistic to do a bit at a time over an extended period.

4 Take care of the most vulnerable materials first, not necessarily the oldest. For example, Ektachrome films from the 1970's–especially those processed at drug stores or small labs –are at particular risk of fading and cupping while older films on Kodachrome in cardboard containers stored at room temperature have proven remarkably stable. Anything with a strong vinegar smell is definitely an urgent matter and should be put at the top of your list. Move it away from other films and consider having it professionally handled and copied.

5 In the US there are several graduate programs for Moving Image Archiving including NYU Moving Image Archiving and Preservation program, the UCLA Moving Image Archiving Studies program and the L. Jeffrey Selznick School of Film Preservation at the George Eastman House. For a more extensive listing of schools, go to:
http://www.loc.gov/film/schools.html

6 If writing this is too complicated or difficult, make an audio or video recording of yourself talking about it. If you can't get someone to transcribe it, keep the video or audio tape with the film elements.

7 If the original was negative instead of reversal, you would make an interpositive and a duplicate negative from that. If the film was black & white the interpositive is sometimes called a fine-grain positive. If the original is regular 8mm or Super 8 you would optically blow it up to a 16mm or 35mm internegative.

8 Digital duplication of film is not currently considered preservation but this is gradually changing. It may soon be possible and desirable to scan film at the original frame rate and store the information as high resolution, uncompressed data. But this is currently a complicated and controversial subject beyond the scope of this essay. However, making a high quality video master at this time is a relatively inexpensive and valuable way of helping preserve a film by making it easier to study and distribute in another form.