

FIAF Technical Commission Preservation Best Practice

Preserving motion picture film is a complex operation, involving both technical and intellectual expertise.

1) Acquisition

In order to ensure that cinematographic works are properly preserved, it is essential that in acquiring film, whether by legal or voluntary deposits, purchases, donations, etc., archives strive to obtain the elements most suitable for preservation and conservation.

What constitutes the most suitable elements will depend on the production process used for each work, but ideally they will include image and sound negatives, analogue or digital sound elements, first generation duplicates, digital master files, and, if possible, a presentation copy (i.e. a print or digital cinema package).

Film archives should have a written acquisition and de-accession policy.

2) Conservation

Conservation means the safeguarding and protection of original materials from damage, decay and loss.

The primary task of film preservation is the conservation of the original elements. Ideally these elements will include the earliest generation elements which survive, as well as an original presentation copy. In no circumstances should the original elements ever be cut or in any other way altered.

The single most important factor in the preservation of film is the maintenance of a cold and dry storage environment. Film can be preserved for a very long time if stored and handled properly. New film has an estimated life expectancy of around 500 years at 5°Celsius and 35% Relative Humidity.

Film should be stored in appropriate containers, flat on shelves, and the recommended conditioning time observed when moving between different environments. Correct physical handling of film is essential in avoiding damage.

Archives are responsible for setting up comprehensive policies and procedures for collection management, to include such factors as:

- the use of modern information science tools (catalogues, databases, etc.) based on international standards
- the regular inspection of the materials in the collections
- collection handling procedures to ensure the safety of both staff and the collections
- control of analogue and digital access to guarantee the security of the collections, particularly in regard to copyrighted materials.

Archives must also set up policies and procedures that strictly regulate the de-accessioning of materials in the collections. Original elements should not be de-accessioned unless their instability becomes a danger to the rest of the collection; this is because improvements in preservation and restoration techniques may lead to better results in the future.

3) Preservation

Preservation means the duplication, copying, or migration of analogue and digital film to a new support or format, typically in cases where the life expectancy of the original elements is limited or unpredictable.

Any duplication of analogue material will inevitably create a new element which is different from the original. However, the process should attempt to create a duplicate that adheres as faithfully as possible to the original. It is of the utmost importance that newly created elements retain the originals' authenticity. Maintaining authenticity is not only an issue of image quality, but also of frame ratio, aspect ratio, etc.

It must be recognised that:

- Preservation is a demanding and complex process, requiring specialised staff and equipment, and is not routine work.
- Preservation must be entrusted to specialised laboratories within or outside the archive, with a proven record of handling archival film to the highest possible standards of quality, safety and security. Archives are responsible for identifying the laboratories that best meet these standards.
- No loss of quality in preservation duplicates is acceptable beyond what is unavoidable in analogue duplication. For example, image characteristics such as aspect ratio, format, etc. must be maintained to the limit of available techniques, the original gauge and format should be retained whenever possible, and reductions (such as duplication from 35mm to 16mm) avoided. Similarly, when migration or reformatting are performed as part of digital preservation, the original quality of the content must be maintained: lossy compression, reduction of resolution or bit-depth are to be discouraged.
- Because the ultimate goal of preservation is to extend the life expectancy of the original work, and to allow for future access, the use of the best available techniques and materials (e.g. polyester base films vs. acetate, well-established films stocks and equipment) is essential.

4) Restoration

Restoration is a complex term which can mean the faithful duplication of an original element using techniques to remove or disguise damage and deterioration, or it can mean the recreation of an original cinematographic work from surviving elements which may be incomplete or from different versions.

Restoration will inevitably involve subjective decisions, both on technical matters and on the question of content, such as the choice of version, soundtrack, titles, etc. These decisions must be informed by as much knowledge of film production at the time of production as possible, and by historical information about the specific work. Because a restoration involves the manipulation of each element that contributed to it, it is imperative that all restoration projects are fully documented and that this documentation is accessible.

It must be recognised that:

- Restoration projects must be based on a sound and coherent theoretical and historical approach and be entrusted to highly specialized and expert staff.
- The long term conservation of all original elements used in the restoration must be ensured, so that future restorations may be undertaken should improved techniques or new elements become available.
- Any restoration process should be reversible: this implies that no modification is allowed to the original elements on which the restoration is based.
- The condition of the original elements and the requirements of the restoration process will determine whether analogue or digital technologies are used; however, any restoration process should result in a new set of elements suitable for long term preservation.
- Any restoration process should be documented as precisely as possible; such documentation should be retained by the archive and made accessible along with the elements derived from the restoration.

5) Access

Access is the ultimate goal of the archive: the purpose of conservation, preservation and restoration is to achieve this objective.

Access must be regulated in order to limit any danger to the elements in the collection, and therefore archives must define access policies and procedures to protect their collections, while not restricting accessibility for legitimate uses.

In order to achieve this:

- Archives must identify which elements in their collections are ‘master elements’ and which are ‘access elements’. Master elements are irreplaceable (or replaceable only at high cost, or at the expense of a loss of quality). Access elements, on the other hand, can be handled without endangering the existence and the quality of the work.
- Archives will implement policies and procedures which clearly define how master and access elements may be used.
- In devising these, archives must take into consideration the obsolescence of many film processes (e.g. colour processes, sound systems, etc.). A release print, for example, can become the only reference to the way a film looked and sounded, and it may therefore be necessary to designate it as a master.
- Whenever film elements are accessed, they should be carefully checked to ascertain their condition, both before and after use.
- Access will be provided only in environments (laboratories, theatres, etc.) controlled or approved by the archive.
- Access to master elements in particular must be closely regulated to ensure their safety, especially when this is for processes which require significant handling, such as digitisation or the production of new prints. Consequently, archives must set up procedures to ensure that:
 - o Any such processes will take place under the strict supervision of the archive, preferably within its premises; whenever this is not possible, the master elements will only be entrusted to laboratories considered by the archive to meet the highest standards
 - o Masters and printing elements will not be endangered by excessive use. The number of times a master element is exposed to such processes should be strictly regulated, for example by limiting the number of prints that can be made from an original element before the mandatory production of a duplicate.

6) Presentation

In order to ensure the presentation of an authentic image, the projection, or delivery system, should be capable of handling the motion picture element properly. Presentation should adhere to the same principles of authenticity that inform the other stages of motion picture preservation. The film should be shown with the original frame and aspect ratio, and with other features of the original experience. However, since changes in technology do not always allow the exact reproduction of original presentation systems, some degree of “translation” into modern presentation platforms is accepted. Such modern translations should always aspire to the principles of authenticity.