The Care of Motion Picture Film

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THE preservation and care of Air Force historical motion picture film—or any other motion picture film—presents many problems. In the period when most of the films which are now considered historical were shot, the medium used was a nitrate base film, highly flammable, and very similar to guncotton chemically. It required special containers to carry it and special vaults for storage. In addition, nitrate film decomposed slowly but continuously during its lifetime. If allowed to decompose completely, it would end partly or entirely as a brownish acrid powder. Along with decomposition there was a steady rate of shrinkage until the perforations would no longer fit the sprockets of the printing machines. The only solution for this was reproduction on a triacetate or safety base film, even though this process was attended with some danger, in that degradation of the subject image was possible due to carelessness or accidents in printing and processing. At this time we are in the happy position of seeing our historical films on a base that does not burn so easily as paper. Accelerated aging tests made by the film manufacturers promise that there will be no appreciable shrinkage for the next 50 years. Tests that have been run continuously for the last six years in the USAF Motion Picture Film Depository bear this out.

If reproduction on safety film were the only consideration, there would be no problem in the preservation of film for an indefinite period. Nothing, however, has ever been invented that will protect film against physical damage. No matter how topical the subject, how beautiful the color, how unique the photography, a roll of film is practically worthless with a big scratch running down the middle. Motion picture film is fragile and subject to permanent injury in a great many ways. The preservation of film in its pristine state is the concern of everyone involved—not only

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those who actually handle it but everyone who is interested in a clean, clear film presentation.

It might be of interest to examine the film and see what it is made of. Modern motion picture film consists of a plastic base or support on which is coated a thin adhesive layer and one or more emulsion layers. The base, approximately one five-thousandth of an inch thick, is usually made from cotton or wood cellulose and treated with chemicals to produce a plastic. The emulsion consists of a suspension of silver salts and certain dyes in extremely pure hardened gelatin. This gelatin is obtained from clippings from calves' ears, cheeks, and head. In their quest for as nearly absolute purity as possible, the manufacturers consider even the calves' dietary habits. It is believed that if the calves eat certain substances, such as wild mustard, the sensitivity of the manufactured film will be adversely affected. The emulsion is flowed onto the base in an incredibly thin, even layer. Most black-and-white films have only one layer of emulsion; but a color internegative being used in still photographic work by photofinishers has 13 separate coatings. Despite hardening of the gelatin and protective coatings, it is easy to see why defects can creep into motion picture film. These defects seem endless. They include scratches, gouges, rubs, cinch marks, and tears. Errors in developing and processing can produce stains, dichroic fog, and ferrotyping. Some of the causes of damage to processed film are:

1. *Holding film improperly with the fingers during inspection on a rewind.* Bending the edges together with the emulsion side out may cause the film to split down the center, especially under low humidity conditions.
2. *Handling without the use of gloves.* Film is an excellent medium for recording fingerprints but hardly one for displaying them.
3. *Poor winding.* If the film is not wound in a smooth roll, the protruding edges will be damaged.
4. *Defective reels and containers.* Reels with sharp edges or bent flanges and cases or cans that are bent or rusty may result in film damage.
5. *Abrasion.* If film is allowed to rub on a rough surface or if it is cinched by pulling the end of a loose roll, abrasion or scratching will occur.
6. *Poor splicing.* Stiff, buckled, or weak splices frequently cause film breaks and damage to adjacent footage.

Abrasions and scratches are among the most frequent causes of film damage. Continual handling, accidental cinching, and repeated passing through printers produce fine surface scratches and sometimes deeper, more penetrating scratches. The mechanics of handling film, as in projecting, putting the film in cans, and packing it for shipment, can often be a source of damage that the operator is unaware of. Though most people are aware of the

pitfalls of projection, not many know that putting a loosely wound roll in a can for shipment can sometimes cause the outer convolutions of the roll to be wedged under the rest of the roll, thereby developing a crease that eventually starts to split. Finally, packaging film without proper care can subject the film to the same damage that any other fragile material is likely to receive in shipment.

Only the utmost care in all phases of film handling will preserve valuable motion pictures for future historical research.

Charonites

Upon this [the burning by the people of the conspirators' houses], Brutus and his whole party left the city, and Cæsar's friends joined themselves to Antony. Calpurnia, Cæsar's wife, lodged with him the best part of the property, to the value of four thousand talents; he got also into his hands all Cæsar's papers wherein were contained journals of all he had done, and draughts of what he designed to do, which Antony made good use of; for by this means he appointed what magistrates he pleased, brought whom he would into the senate, recalled some from exile, freed others out of prison, and all this as ordered so by Cæsar. The Romans, in mockery, gave those who were thus benefited the name of Charonites, since, if put to prove their patents, they must have recourse to the papers of the dead.

—PLUTARCH, "Antony," in *Plutarch's Lives; the Translation Called Dryden's*, corrected and revised by A. H. Clough, 5:66 (New York, A. L. Burt, ca. 1900).

Suspension of Belief

Supreme Court Justice Felix Frankfurter let it be known at witful length yesterday that suspension of belief is a pretty good thing to practice when you're reading political diaries. . . .

You take a man who likes words, phrases, sentences, things like that, and has some imagination, Frankfurter said, and you're likely to get a "fusion of fact and fancy" that misses truth with lively frequency.

On the other hand, President James K. Polk, whom Frankfurter termed "a bookkeeper" in the Presidency, was a "dull man" and he wrote a reliable diary, he said.

"My conclusion is," said the jurist, "that the most reliable diaries are those that come from the dullest men."

—PHIL CASEY, staff reporter, in the *Washington Post*, Oct. 28, 1960.