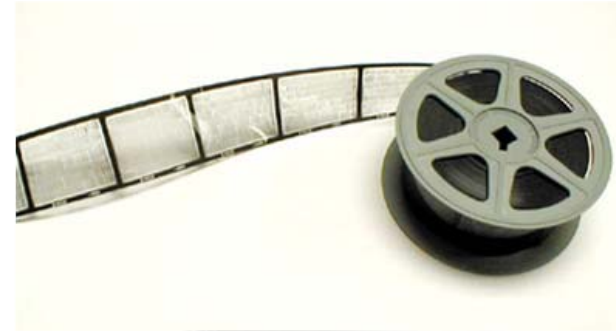


Assessing the Potential for Disaster & Quiet Catastrophes

- Overview
- Descriptions
- Risks to collections

Barbara B. Eden
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Microfilm: A Trusted Reformatting Option

- In the 1920s microfilm began to be used in a commercial setting (filming of Bank Checks)
- Libraries began filming programs in the late 1920s
- In 1935, Kodak's Recordak division began filming and publishing *The New York Times* on reels of 35 millimeter microfilm, ushering in the era of newspaper preservation on film
- This method of information storage received the sanction of the American Library Association in 1936, when it officially endorsed microforms



Microfilm: an old friend

- Large Collections of film/fiche at most institutions
- Microfilm is the product of a tested technology that is governed by carefully crafted national standards
- Microforms (i.e., microfilm and microfiche) can be read by the naked eye using only light and magnification



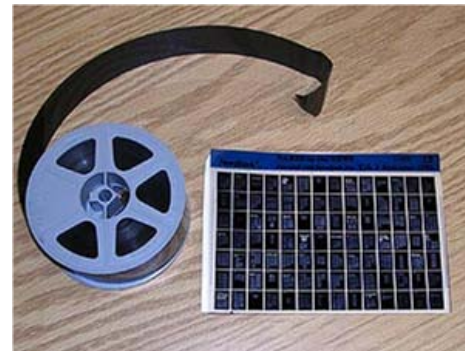
Preservation Microfilming Guidelines

- **Developed by the Research Libraries Group in the mid-1980s**
- **Intent is for longevity of microfilm and meets preservation standards**
- **Requires careful production and examination, film type, cataloging, controlled storage and handling conditions**
- **If stored properly will last at least 500+ years**



Advantages of Film

- It enables libraries to greatly expand access to collections without putting rare, fragile, or valuable items at risk of theft or damage
- It is compact, with far smaller storage costs than paper documents.
- It is easily replaced and inexpensive



Advantages

- **Since it is analog it is easy to view. The format requires no software. It is instantly comprehensible to persons literate in the language; the only equipment that is needed is a simple magnifying glass.**
- **It is virtually impossible to mutilate. Users cannot tear pages from or deface microforms.**
- **It has low intrinsic value and does not attract thieves. Few heavily-used microform collections suffer any losses due to theft.**
- **Prints from microfilm are accepted in legal proceedings as substitutes for original documents.**



Disadvantages

- **Image is (usually) too small to read with the naked eye. Libraries must use special readers that project full-size images**
- **Reading microfilms on a machine for some time may cause headache and/or eyestrain**
- **Reader machines used to view microfilm are often difficult to use, requiring users to carefully wind and rewind until they have arrived at the point where the data they are looking for is stored. Photographic illustrations reproduce poorly in microform format, with loss of clarity and halftones.**





Disadvantages: Storage Issues

- When stored in the high density drawers, it is easy to misfile a fiche. Use labeled envelope pockets for each card.



Threats: Film Stock

- **Through the years, microforms have appeared on various film bases, including cellulose nitrate, cellulose acetate, and polyester.**
- **Cellulose nitrate-based microforms, like other cellulose nitrate films, are highly flammable, prone to releasing hazardous gases over time, and subject to natural decomposition. By the early 1950s, commercial production of all formats of cellulose nitrate film had permanently ceased.**



Threats: Storage Environments

- **Temperature and Relative Humidity**

In general, microform requirements resemble those of other photographic materials. Year-round relative humidity lower than 50% is recommended for all film types. An upper limit of 40% is recommended for silver-gelatin films to minimize the likelihood of microscopic blemishes from silver oxidation (sometimes called "measles"). Temperature should not exceed 70°F; cooler temperatures are preferable.



Threats: Storage Environments

- If low temperatures are maintained for the storage of collections, and if readers are located outside of the storage areas, a conditioning period is required to allow gradual warming of cold films before they are read.
- Rapid transfer from a cold to a warm space may cause water condensation on the surface of the films.



Threats: Pollution

- **Particulate air pollutants are an obvious source of scratches and abrasions for microfilm. Silver-gelatin films are particularly vulnerable to such damage. House cleaning, including regular vacuuming, is important in storage and use areas.**



Threats: Pollution

- **Gaseous air contaminants, e.g., oxides of sulfur and nitrogen, paint fumes, ammonia, peroxides, ozone, and formaldehyde, damage film bases and emulsions. These contaminants may produce oxidizing or reducing effects that cause microblemishes on silver-gelatin films; precautions must therefore be taken to reduce the risk of exposure. Microforms should not be stored near photocopiers, which may be a source of ozone. Also, microforms should be removed from any area to be painted; good air circulation should be provided by fans and open windows, and paint should be allowed to cure for three months before films are returned to the space. Wooden shelving or cabinets should not be used in areas where microforms of long-term value are stored.**



Threats: Film Care

- **Diazo, vesicular, and silver-gelatin films should not be rolled on the same spools, sleeved in the same enclosures, or (ideally) stored in the same containers. Space and access problems usually make separate cabinets for different film types impracticable, but separate spools and fiche sleeves should always be used. In addition, older vesicular films may be a source of acidic deterioration products. They should be physically separated from other films and systematically replaced.**



Three Generations of Film=Protection

- **Master Negative**

The first generation film (or master negative) should be a silver-gelatin negative produced from the original artifact and processed according to standards given in ANSI/AIIM MS23-1998. This is the archival copy, which is used to produce a duplicate negative for the generation of use copies. The master negative should be stored in a different location from secondary copies and under conditions as close as possible to the ideal. There are a number of repositories that rent space for the archival storage of microfilm. These are recommended, but the user should be sure the storage conditions at the chosen facility meet ANSI standards outlined in ANSI/NAPM IT9.11-1993. The only subsequent use of the master negative should be the reproduction of a duplicate negative lost to damage or disaster.



Print Master and Use Copy

- **This copy is almost always silver-gelatin. The duplicate negative is used to generate use copies for the collection. It should be stored under the best available conditions, since it serves as a working master, to protect the master negative. Ideally, it should be physically separated from use copies**
- **Use Copies (or Service Copies)**
Any of the available media or formats may be acceptable, and images may be positive or negative. Good storage and handling will extend the life of use copies, thus protecting previous generations of microforms.



Storage

- **NO Rubber bands**
- **Archival Storage Boxes with Paper Bands around the film**
- **Steel filing cabinets are most desirable for microform storage, but inert plastic containers are acceptable for library shelf use. Microfiche enclosures should fit without buckling into drawers. Dividers and placement guides should be made of pH neutral materials. Do not compress fiche in filing, and use space dividers to prevent curling. As noted, different types of film should be stored in different containers to prevent chemical interactions. Filing systems should be designed to minimize handling, and storage cabinets should facilitate the location and retrieval of information. Wear is inevitable in used collections, but its speed and severity can be controlled with good planning.**



Threats: Water Disaster and Film

- **Microforms are highly susceptible to water damage. They must be protected from flooding or burst pipes. Once wet, this material must not be allowed to dry in rolls or enclosures as it will stick to itself and to the enclosures. Wet microforms must be removed from their enclosures. Rolled film must be unrolled for drying.**
- **Air drying is acceptable, but it is most efficient to locate, in advance, a local film processing lab that can provide this service in the event of an emergency. Microfiche can be dried flat, emulsion side up, in single layers or clipped to a clothes line by an edge that bears no image.**



Threats: Film Stock

- **Cellulose acetate film, touted as safety base film and non-flammable, will still naturally degrade over time. This degradation process is accelerated when acetate film is not properly stored. Although a great deal of acetate microfilm exists, acetate film is not acceptable as a preservation medium for microforms.**
- **Polyester is the only film base currently recommended for preservation microfilming. Both stable and durable, black-and-white polyester film has a life expectancy of 500+ years under proper storage conditions.**



Questions????



We are all in love with Computers and the Digital World

- Quick Access to information
- Searchable
- Images are fully rendered
- Eliminates the need for large runs of print serials
- Fast and easy communication
- What else?????



There are Many Threats to Digital Files

- Information created and stored digitally is at risk for loss in two important ways: obsolescence and physical damage.
- Obsolescence can affect all facets of the archival storage function, including hardware, software, and even the arrangement of the data in a stored file. The damaging effects of obsolescence can occur in an alarmingly fast pace.
- Digital information is also vulnerable to physical threats. Like obsolescence, physical damage can occur to multiple components required to create, store, and access digital information, namely hardware and media.



Important Issues

- A file format may be superseded by newer versions, which may no longer be supported by the current vendor or relevant standards body— such as PCFile, Lotus Notes
- Storage medium may be superseded by newer and denser versions of that medium, or by new types of media—smaller, denser, faster, and easier to read



Threats: Obsolescence

- The device needed to read a storage medium may no longer be manufactured. Old computers and disc players
- Software used to create, manage, or access digital content may be superseded by newer versions or newer generations with more capabilities using the most current technologies.

Let's check the Chamber of Horrors

- <http://www.icpsr.umich.edu/dpm/dpm-ng/oldmedia/chamber.html>



Threats: The Digital World is Accelerating

- **Computers of every size and scale are continually replaced by faster and more powerful machines that can store and process more and more content.**
- **Computer components and media can physically fail due to human error, natural events, and even just the passing of time.**
- **How many computers have you used since 1990**



VIRUSES!!!! Watch Out



- What is a computer virus?
- Think of a biological virus – the kind that makes you sick. It's persistently nasty, keeps you from functioning normally and often requires something powerful to get rid of it. A computer virus is very similar. Designed to relentlessly replicate, computer viruses infect your programs and files, alter the way your computer operates or stop it from working altogether. Tens of thousands of computer viruses now operate over the Internet, and new computer viruses are discovered every day.
- A recent virus
- <http://www.reuters.com/article/2011/05/04/us-binladen-computer-virus-idUSTRE7437EM20110504>



How does a virus find my files

- **Even if you're careful you can pick up computer viruses through normal Web activities**
- **Sharing music, files or photos with other users**
- **Visiting an infected Web site**
- **Opening spam email or an email attachment**
- **Downloading free games, toolbars, media players and other system utilities**



What does a computer virus do?

- **Some computer viruses are programmed to harm your computer by damaging programs, deleting files, or reformatting the hard drive**
- **Others simply replicate themselves or flood a network with traffic, making it impossible to perform any internet activity**
- **Even less harmful computer viruses can significantly disrupt your system's performance, sapping computer memory and causing frequent computer crashes**



What are the symptoms of a computer virus?

- Your computer may be infected if you recognize any of these malware symptoms:
- Slow computer performance
- Erratic computer behavior
- Unexplained data loss
- Frequent computer crashes



How to Protect Yourself from Viruses

- **Make sure that you have the best security software products installed on your computer**
- **Use antivirus protection and a firewall**
- **Get antispymware software**
- **Always keep your antivirus protection and antispymware software up-to-date**
- **Update your operating system regularly**
- **Increase your browser security settings**
- **Avoid questionable Web sites**
- **Only download software from sites you trust. Carefully evaluate free software and file-sharing applications before downloading them.**



Barbara B. Eden - Outlook Web Access - Windows Internet Explorer

https://exchange.cornell.edu/owa/

File Edit View Favorites Tools Help

Barbara B. Eden - Outlook Web Access

Microsoft Office Outlook Web Access
Connected to Microsoft Exchange

Mail

- Barbara B. Eden
- Calendar
- Contacts
- Deleted Items (12)
- Drafts
- Inbox (416)
- Junk E-Mail [858]
- Notes
- Outbox
- RSS Feeds
- Sent Items (1)
- Suggested Contacts
- Sync Issues
- Tasks
- Search Folders

Symantec Endpoint Protection

Status

Your computer is protected.
No problems detected.

Help and Support

Scan for threats
Change settings
View quarantine
View logs

LiveUpdate

Protection Technologies
The following Symantec protection technologies are installed and active.

- Antivirus and Anti-Malware**
Protects against viruses, trojans, spyware, and malware.
Definitions: Updated
- Proactive Threat Prevention**
Provides zero-day protection against unknown threats.
Definitions: Updated
- Network Threat Prevention**
Protects against network-based threats.
Definitions: Updated

Detectable Risk List

Symantec Endpoint Protection can detect the following risks with the current set of virus definitions.

Risk Name	Type	Category
007AntiSpyware		Other
1000Years.791	File	Malware
10_Past_3_748	File	Malware
12 Tricks Trojan	File	Malware
1stAntiVirus		Other
2AntiSpyware		Other
2up.6000	File	Malware
3APA3A.A	Boot sector	Malware
3APA3A.A (2)	Boot sector	Malware
3APA3A.B	Boot sector	Malware
3APA3A.B (2)	Boot sector	Malware
3b Trojan	File	Malware
3Nop Boot (1)	Boot sector	Malware
3Nop Boot (2)	Boot sector	Malware
3wPlayer		Other
3Y	File	Malware
4.DFS	File	Malware

Definition version: 5/5/2011 rev. 39 Total risks: 75,458

Yo... Your total ... Thu 11:14 AM
Ga... RE: Rotobit... Thu 11:14 AM

Items 1 to 50 of 4254

Columbia's Damon Ja Gladys Kriebel Delma
<<http://www.2cul.org/sites/default/files/2CUL%20Supporting%20Humanities%20Doctoral%20Student%20Success%20Report.pdf>>

Internet 100%

start assessing th epot... Barbara B. Eden - ... Symantec Endpoi... Search Desktop 12:22 PM



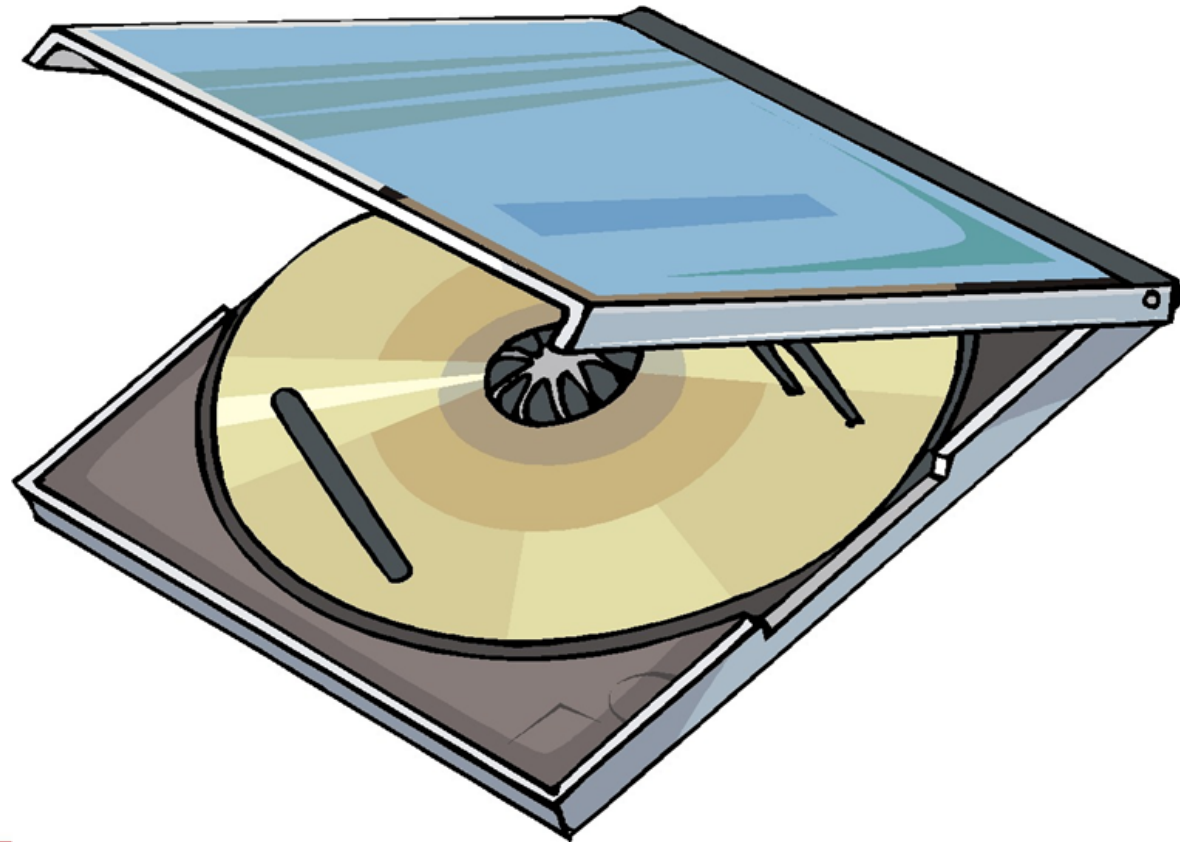
More Tips on Protection

- Practice safe email
- Don't open messages from unknown senders
- Immediately delete messages you suspect to be spam
- Use a junk/spam filter
- An unprotected computer is like an open door for computer viruses. Firewalls monitor Internet traffic in and out of your computer and hide your PC from online scammers looking for easy targets.



Physical Threats

- Digital storage media and hardware are subject to numerous internal and external forces that can damage or destroy their readability.



Physical Threats to Digital Media

- **Material instability**
- **improper storage environment (temperature, humidity, light, dust)**
- **overuse (mainly for physical contact media)**
- **natural disaster (fire, flood, earthquake)**
- **infrastructure failure (plumbing, electrical, climate control)**



Physical Threats to Digital Media

- inadequate hardware maintenance
- hardware malfunction
- human error (including improper handling)
- sabotage (theft, vandalism)



Storage Issues

- Improper storage may be the most common reason for premature media failure



Actions You Can Take

- **Maintain consistent temperature ~ 20 deg C (68 deg F) (see the IPI Media Storage Quick Reference for specific guidelines)**
- **<https://www.imagepermanenceinstitute.org/resources/publications>**
- **Avoid large and rapid fluctuations in temperature/humidity.**
- **Control dust**



Actions You Can Take

- **Avoid exposure to fumes.**
- **Establish a no food, drink, or smoking policy in media storage areas**
- **Store media in closed metal cabinets**
- **Shelve media vertically (not stacked)**
- **Store media in their original cases**
- **Minimize exposure to sunlight and UV from light fixtures**
- **Allow media to acclimate to new temperature and humidity before using**
- **Return to controlled storage immediately after use**



Threats: Improper Handling

- Though many digital media give the impression of sturdiness and durability, they can be damaged by too casual an approach to use



Recommended Handling of Media

- **Clean and dry hands before handling media.**
- **Don't touch exposed media surfaces (e.g., handle CDs at edges).**
- **Keep media in their cases except when in use**
- **CDs should be labeled only on the top surface with approved markers**
- **Avoid flexing CDs and DVDs**



Questions??

Contact

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