



Preservation Microfilming— Glossary and combined index

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Introduction

This glossary is intended as an introduction to a number of the key terms that are used in the preservation microfilming training modules.



Most of the definitions have been adapted from the sources that are listed below. This glossary is not intended as a substitute for using these more extensive resources and other scientific and technical dictionaries.

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Glossary

Terms highlighted in **bold** have separate entries or references.

acetate base

Film with a base composed principally of cellulose acetate or triacetate is unsuitable for long term preservation. Deterioration of acetate-base film generally occurs as a result of **vinegar syndrome**. See also **AD strips**.

acid-free

An imprecise term referring to a substance having a **pH** value of 7.0 or greater.

AD strips

Used to measure the rate of deterioration in **acetate** film base. Measurement may be carried out as part of a **collection survey**.

Deterioration in acetate film generally occurs as a result of the **vinegar syndrome**. AD strips are produced by the Image Permanence Institute.

adhesive tape

Paper, fabric or other material in roll or sheet form with an adhesive layer. The adhesive is generally activated by pressure, heat or water. Pressure-sensitive or sticky tapes should not be used for material intended for long-term preservation, since the adhesive degrades and yellows.

aperture cards

A data processing card with a rectangular hole prepared for mounting one or two frames of 35mm film. Aperture cards are frequently used to copy images of engineering drawings and maps.

archival quality

A broad term relating to the ability of an item to retain its original characteristics permanently, or the ability to resist deterioration. In United States standards the use of this term is no longer encouraged. The more precise term, **life expectancy**, is preferred.

background

The part of a document or microform that does not contain print, line work or other information.

background density see density

base see film base

base fog density

The density of the unexposed area of the film (the clear film). See also **density**.

bibliographic see **bibliography**

bibliographic integrity see **collating**

bibliography

A systematic list of information which helps to identify publications and other resources, e.g. author, title, date, publisher, volume. The term, **bibliographic** relates to the systematic description of items.

bleed-through

An effect caused when ink or paint has migrated from the surface of one side of a sheet of paper to the other side. This is generally due to the porous nature of the paper. See also **show-through**.

blip

A mark used to locate an image on a microform.

blunder traps

Traps that assist in identifying insects in the collection. Most blunder traps have a piece of sticky cardboard that traps insects. By checking these traps on a regular basis, it is possible to get an idea about the presence of specific insects within the monitored area.

blurring

A lack of image clarity which is not sharp or distinct.

book cradle

A device that supports bound volumes for microfilming in a position so that the pages open flat with minimal gutter shadow.

brittle

A property or condition that causes failure of a material when it is flexed or folded. Paper is said to be brittle when a corner will not withstand two complete double folds.

calibrate

To adjust a piece of equipment, such as a densitometer, to a standard setting.

cartridge film

A container enclosing processed microforms, designed to be inserted into readers, reader printers etc. It is used with a **single core** for roll film. Cartridges are convenient and give protection to the microfilm during handling.

cellulose acetate see **acetate**

cellulose nitrate see **nitrate**

cine mode

An orientation of the image so that the text runs at right angles to the edge of the film. See also **image orientation**.

collating

Checking for missing pages and issues and determining that the pages are in the correct order. Frequently referred to as *inspecting for bibliographic integrity*.

collection surveys

Collection surveys (or condition surveys) are a snapshot in time of the condition of the collection. This is valuable information for setting up a program to deal with the problems.

colour microfilm

Microfilm that provides a record of, and displays with reasonable accuracy, the colours (in addition to black and white) in the original document.

COM

Computer output microfilm which contains data produced by a recorder from computer-generated electrical signals.

comic mode

An orientation of the image so that the text runs parallel with the edge of the film. See also **image orientation**.

conservation

A term commonly applied to the specific treatment of individual items, such as making physical or chemical changes to extend their longevity. See also **preservation**.

contact printing

One of the most common ways of duplicating microfilm. During this process the master film and the unexposed duplicating film stock are brought into direct contact with one another.

contingencies

In project management the term is usually applied to possible events or factors which may—or may not—happen. It can be helpful to factor in an additional *contingencies margin* to a project time frame and budget.

contrast

An expression of the relationship between the high and low brightness of a subject, or the high and low density of a photographic image. A photographic image has a high contrast if the difference between the maximum and minimum density is great. See also **density**.

control strips

Used to monitor processing. They contain a pre-exposed (latent) image of successive steps of increasing exposure. These become steps of increasing **density** after processing.

copyboard

The resting surface or platform for supporting or holding material as it is filmed.

copyright

The exclusive right to distribute or control something original, such as the publication of a book.

curator

Person in charge of a collection, especially in a museum or cultural institution.

darkroom

A room used for loading and unloading film and for developing exposed photographic film or paper. *Darkroom conditions* mean that the room is light-proof. Ideally, the darkroom should also have **safelights**. These are lights with filters that provide a controlled light source that has little or no effect on exposed photographic materials.

debinding

Debinding or disbinding refers to the removal of a book from its case, either partially or completely.

deep-tank processors

Deep-tank processors allow very precise control of the processing and drying temperatures and the rate at which chemicals move through the tanks. See also **table-top processors**.

densitometer

An instrument used to determine the density of an image or film base. It is used during quality inspection and duplication.

density

The degree of darkening of the film emulsion. The aim is to obtain as much contrast as possible between the background and image areas of the film. Density is measured numerically as maximum (Dmax) and minimum (Dmin) levels, e.g. Dmax 1.3. Density is influenced by the type of film, the exposure levels and how the film is processed. See also **base fog density** and **contrast**.

depth of field

The distance between the points nearest and furthest from the camera which are acceptably sharp, at a given lens setting.

develop

A step in film processing when chemicals are used to convert a **latent** (invisible) **image** to a visible image. See also **processing**.

diazo film

This type of film contains sensitised layers of diazonium salts and dyes which are exposed to ultraviolet light and developed with heat and ammonia to form an image. It is **image-maintaining** (positive from positive, negative from negative) and is used for third generation service copies. Like **vesicular film** it has a limited life expectancy as it fades with exposure to heat and light.

digital scanning see scanning

digitisation

A process by which a document is captured through scanning and converted to an electronic form.

disaster management

The whole process of planning and equipping for a disaster. It includes

- *Prevention*—checking out the hazards
- *preparing*—storing items securely etc.
- *responding*—knowing how to respond quickly and effectively
- *recovery*—knowing what to do to recover damaged items
- having a *disaster plan* to plan how all of these steps are put into practice.

disbinding see debinding

Dmax, Dmin see density

duplicate copy see generations of microfilm

duplicating

To create additional copies of microfilm after the master has been produced. This enables the master copies to be preserved for the future. The duplicate copies are created as:

- printing masters (second generation) from the master film, or
- use (service) copies (third generation) from the printing masters.

One of the most common ways of duplicating is through **contact printing**. During this process, the master film and the unexposed duplicating film stock are brought into direct emulsion-to-emulsion contact with one another.

electromagnetic radiation

Energy resulting from the acceleration of electric charge and the associated electric and magnetic fields. The energy can be regarded as waves propagated through space. See also **electromagnetic spectrum**.

electromagnetic spectrum

The total range of wavelengths or frequencies of electromagnetic radiation, extending from the longest radio waves to the shortest known cosmic waves. See also **ultraviolet radiation** and **infrared radiation**.

emulsion

A coating, consisting of light-sensitive materials in a medium that is carried as a thin layer on a film base. An *emulsion layer* is the image layer of the film. The *emulsion side* is the side of the film on which the light-sensitive materials are coated. In silver halide film, it is typically the dull side.

ergonomics

An applied science of equipment design which takes into account whether equipment is comfortable and easy to use by operators. By reducing operator fatigue and discomfort, overall effectiveness is increased.

expiry date

The date placed by the manufacturer on packaged microfilm or chemicals to limit the time that they are warranted to produce normal results, if stored under recommended conditions.

exposure

The act of subjecting sensitised material, such as film, to light.

exposure control

Camera control used by operators to adjust the exposure to variations in the colour and texture of the original materials. On most cameras the exposure is regulated through *light intensity* (by altering the voltage applied to the camera lamps) or *shutter speed* (time of exposure).

eye loupe see loupe

fiche see microfiche

film base

The plastic support onto which the emulsion and backing layers are coated. Only polyester-base film is suitable for preservation microfilming.

film size

Film width, generally expressed in millimetres, e.g. 35mm.

fixer

A mixture of chemicals used in fixing, usually containing sodium thiosulphate or ammonium thiosulphate, with certain acids and/or hardening agents.

fixing

A step in processing that makes the film no longer light-sensitive in order to make the developed image stable.

flag

A thin sheet or strip of paper inserted into a volume, set of documents or placed on the shelf. Flags generally alert the camera operator to problems or a specific action, or alert staff that an item has been withdrawn from the collection for microfilming.

flat bed cameras see planetary cameras

focus

1. To adjust the relative positions of a lens and film to obtain the sharpest possible image.
2. The plane in which rays of light reflected from a subject converge (come together) to form a sharp image after passing through different parts of a lens.

fog

A defect in film caused by stray light during exposure or processing, or by incorrect levels of processing chemicals or by using film or chemicals beyond their recommended **expiry date**.

foxing

The discolouration of paper, usually in the form of rust-coloured spots. Foxing is believed to be caused by fungus or mould, impurities in manufacture, high humidity or dampness, and airborne acids.

frame

The area of microfilm on which light can fall in a camera during a single exposure.

generations of microfilm

Every copy of a microform is known as a generation. When microforms are used for preservation purposes, three generations are produced. The first generation preservation master is given secure long-term storage. The second generation printing master or duplicate is used to produce third generation copies. The third generation or service/use copy is the one that is used by readers.

gutter

The portion of an open volume where the pages are bound together. The gutter is formed by adjacent margins of any two pages of an open volume.

half tone

The reproduction of an image in which the gradation of the tone is reproduced by various size dots and white spaces.

hermetic sealing

A system for storing master negative microfilms in hermetically sealed aluminium foil pouches. Nitrogen is injected to replace the air before the pouch is sealed.

hybrid camera

A camera with a capacity to digitise and microfilm.

hygroscopic

The ability to attract and retain water molecules. Hygroscopic materials expand and contract as moisture levels rise and fall.

hygrothermograph see **thermohygrograph**

image-maintaining film

When processed, image-maintaining film will retain the polarity of the previous generation, e.g. positive from positive, negative from negative.

image mode see **image orientation**

image orientation

Image orientation or *mode* refers to the arrangement of images on a film. Images can be arranged in four different ways, either arranged as *single* or *double* pages per frame. They can also be orientated in **cine** or **comic** mode. In comic orientation, the text runs parallel with the edge of the film. In cine mode, the text runs at right angles to the edge of the film.

image-reversing film

When processed, image-reserving film will reverse the polarity of the previous generation, e.g. positive from negative, negative from positive.

increments

Increasing in small steps, e.g. in a step test, increasing the exposure levels at each stage of the test.

infrared radiation

Electromagnetic radiation with wavelengths longer than that of red light, but shorter than that of radio waves. See also **electromagnetic radiation**, **electromagnetic spectrum** and **ultraviolet radiation**.

in-house

Within an organisation—applied to microfilming done within an organisation, as distinct from work done by an external organisation.

inspecting for bibliographic integrity see **collating**

integrated pest management programs (IPM)

Programs designed to reduce the occurrence of insect and pest infestation and damage by making the collection environment unattractive to insects and pests. There are five stages in an IPM program avoid, block, detect, respond, and recover.

integrity

Integrity has two aspects in the preservation context—physical and intellectual. **Physical integrity** relates to the item as an artifact and usually takes place in a conservation department, using skilled techniques to protect historical evidence of past use and treatments. The other aspect of integrity is the authenticity or truthfulness of the intellectual content of an item. **Intellectual integrity** is maintained through keeping records of ownership, as well as through the work of scholars and experts who can make judgments as to whether the original is an authentic version.

IPM see **integrated pest management programs**

jacketer see **microfilm jacketer**

jackets see **microfilm jackets**

latent image

The invisible image produced by the action of light on photosensitive material. The latent image only becomes visible when the film is developed.

latent image fade

The change in the effects of light on photosensitive material that occurs between the time of exposure and the time of developing. The amount and rate of change depends upon time, temperature, humidity, storage conditions and type of emulsion.

LE see **life expectancy**

leader

A length of non-image bearing film that is used at the beginning of a reel for protection and for threading into microfilm equipment. See also **trailer**.

lens

The optical instrument designed to collect and distribute light rays in the formation of an image.

life expectancy (LE)

The length of time that information is retrievable. The LE rating is the minimum life expectancy in years during which information can be retrieved without significant loss when properly stored, e.g. LE 100 is a life expectancy of 100 years. See also **archival quality**.

light box

A device used for inspecting film. It spreads diffused light evenly over the viewing area.

light meter

An instrument that measures light intensity — incident, reflected or transmitted light. Often used to balance the lights on a microfilm camera. Light is measured in lux.

lignin

A component of the cell walls of woody plants. The presence of lignin in paper is believed to contribute to its chemical deterioration.

loupe

A small magnifying eye glass used for inspecting microfilm.

maintenance contact

A contract between the equipment user and a specialist equipment supplier or technical firm to maintain the equipment in **optimum** condition. The contract may involve payment of a fee for services such as labour and parts, and should stipulate such things as response time and extent and regularity of servicing.

mask

An opaque material or device in a microfilming camera that protects specific areas of film from exposure and produces a border around the image.

mask size

The measurement of the adjustable mask that determines the height and width of each frame.

master see **generations of microfilm**

Material Safety Data Sheets (MSDS)

Provide specific information about aspects of chemicals such as: identification, physical description and properties, health hazards, stability and reactivity, first aid information, precautions for use, safe handling and storage, disposal, spillage and prevention of fire and explosion. They are available from the chemical manufacturers.

maximum density see **density**

medium/media

The material on which information is recorded. Sometimes also refers to the actual material used to record the image.

methylene blue test

A preferred method of measuring residual thiosulfate levels in microfilm masters following processing.

microfiche

A flat sheet of film, normally 105mm x 148mm, containing multiple micro-images in a grid pattern. Microfiche can be computer generated (**COM**). They can also be created from **jackets**.

microfilm jacketer

A machine which transports microfilm into the channels of jackets to create microfiche. Sometimes called a *reader-filler*.

microfilm jackets

Flat transparent holders containing channels into which strips of 16 or 35mm roll film are inserted. Jackets can be updated by adding or removing individual microfilm images. They are often used to create additional **microfiche** copies.

microform

A broad term used to cover all formats of microfilm, microfiche etc.

minimum density see **density**

mode see **image orientation**

mould

Causes staining and weakening of most library material. The spores of fungi that become mould or mildew are always present in the air and objects. They only need the proper conditions of temperature and humidity to grow.

negative

Image in which the **polarity** is opposite to that of the original.

nitrate film

Used as a **film base** from 1890, but because of its flammability it has not been manufactured since 1951. Cellulose nitrate film should be handled with great care.

OCR

Optical Character Recognition is the process that converts the text of a printed page to a digital file. This is accomplished by using an OCR software package to process a digital image of the printed page. OCR generally does not deal effectively with manuscripts or certain type faces.

optimum

The best. Optimising is making the best image.

organic

Materials originating from living things, such as plants and animals.

overexpose

To allow too much exposure of a photographic copy. This may be caused by factors such as the light being too brilliant, an aperture being too large, or the exposure time being too long.

pH

The degree of acidity or alkalinity. pH is measured on a scale of 0 to 14, with 0 being highly acidic and 14 being totally alkaline and 7 being neutral. Archival-standard paper has a pH of 7 or higher.

pH pens

Special pens which measure the pH level. With a pH greater than 7 (i.e. alkaline) the pH pen mark will be purple. With a pH less than 7 (i.e. acidic) the pH pen mark will be yellow.

planetary cameras

Planetary cameras or *flat bed* cameras are the main cameras used in preservation microfilming. The items to be filmed are placed on a flat **copyboard** and remain still throughout the exposure. See also **rotary cameras** and **step and repeat cameras**.

polarity

The change or retention of the light to dark relationship of an image. For example, a change from first generation negative to a second generation negative means the polarity is *retained*. A change from a first generation negative to a second generation positive means a *change* in the polarity.

polyethylene

A chemically inert, stable, flexible, thermoplastic material. It is fungi-resistant and used in preservation as a protective liner or enclosure.

polymer

A large organic compound made up of a number of smaller repeating units joined together by chemical bonds in a regular pattern. The molecular size of the polymer helps to determine the mechanical properties of the plastic material.

polypropylene

A plastic that is commonly used in conservation to make protective covers and boxes for storing materials.

positive

Image in which the **polarity** is the same as the original.

preservation

A broad umbrella term that includes all activities that prolong the life of materials, or their information content. Preservation includes a whole range of factors from handling items carefully, to appropriate housing and storage, to preservation reformatting and disaster planning. See also **conservation**.

preservation reformatting

The copying of information from one form to another for preservation purposes.

preventative maintenance

The upkeep of equipment on a regular basis. This is intended to prevent downtime and to ensure trouble-free operation.

preventative preservation

The actions undertaken to prevent the deterioration of cultural materials and collections.

printing master see generations of microfilm

polysulfide treatment

A process in which silver compounds are used to convert the silver (in silver gelatin microfilm) into silver sulfide. The silver sulfide resists oxidation caused by high temperature, high humidity and atmospheric pollutants. This oxidation can result in reddish or orange coloured spots or rings known as redox blemishes. Polysulfide treatment may be applied during film processing or as a post-processing step.

processing

The series of steps involved in treating exposed microfilm, to make the latent (invisible) images visible. In preservation microfilming the film should be processed to give the highest results and maximum life expectancy. With silver halide film, the microfilm is developed in a processor that runs the film through a series of steps. These steps are typically developing, stop bath or rinsing, fixing, washing, drying.

PVC (polyvinyl chloride)

A plastic which is commonly used in sleeves, folders or albums and will damage original items. This plastic is not chemically stable and produces hydrochloric acid as it deteriorates. A safer alternative is **polypropylene** which is available in a range of storage sheets for photographs and boxes.

QI see Quality Index

qualitative

Relates to the characteristics or the nature of something, a distinguishing property, or a level of excellence.

quantitative

Relates to quantity—an amount or size which can be measured.

quarantine

To separate or isolate items to prevent the spread of a pest or an infection.

Quality Index (QI)

A system designed to take into account the level of detail in the original. It goes a stage beyond specifying a resolution level. The Quality Index adds to the resolution measurement a measurement of type size in millimetres of the lower case letter 'e' in the original document. The measurement is then multiplied by the smallest resolution pattern that is resolved on the film. This number is then used as the quality index.

reader-filler see **jacketer**

redox blemishes

Reddish or orange coloured spots or rings in microfilm. They are caused by a combination of exposure to high temperature, high humidity and atmospheric pollutants. Redox blemishes may be prevented by polysulfide treatment.

reduction ratio

Expresses the relationship between the size of the original document and the corresponding microform image. It is a linear measurement that refers to the number of times the original is reduced on film. For example, a 1:24 reduction ratio means that any line on a microform image is 1/24 the size of the corresponding line on the original. The actual image area is reduced 24 x 24, which means that for a 1:24 reduction ratio, the area is reduced 576 times.

reel

A holder into which film is wound, also known as a **spool**.

reel programming

The task of determining which volumes, documents etc. will be filmed together on the same reel of microfilm.

relative humidity (RH)

A measure of the amount of water vapour contained in the air at a particular temperature. This is compared with the total amount of water vapour that the air can contain at that temperature. It is expressed as a percentage.

replenishment units

Many processors have replenishment units that steadily regulate the supply of chemicals according to the length of film being processed.

resolution

The degree to which fine details can be distinguished and a major factor in film legibility. The higher the resolution, the finer the detail that will be reproduced.

resolution test target

A standard test target is used to measure resolution. This is one of the technical targets that forms part of the early target sequence. The resolution target has five charts one in the centre and four in the corners, so that they correspond to the corners of the largest documents being photographed. This provides information on the resolution value out in the corners where the lenses begin to get a little fuzzy.

restrainers

Used to control or prevent microfilm from unwinding in boxes.

retakes

The refilming of sections of a film, usually because of an error or problem. These are then **spliced** into the master.

retrieval systems

Help to locate individual images on a roll of microfilm. An automated method involves placing **blips** or marks below the image on the roll. Retrieval systems have the capacity to count the blips, stop at a specified frame and display the image.

rewinds see **winder**

RH see **relative humidity**

roll film

Both 16mm and 35mm roll film are most convenient where there are large volumes of records. The 35mm sized roll film is used for larger documents such as newspapers, maps, plans and large manuscripts.

rotary cameras

Used for general microfilming where the emphasis is on speed, e.g. filming business accounts. Documents are fed into the camera past a series of rollers and are photographed as they move through the camera. See also **planetary cameras** and **step and repeat cameras**.

safelights

Lights with filters that are used in **darkrooms**. They provide a controlled light source that has little or no effect on exposed photographic materials.

scanning

A technique for converting human-readable images, e.g. from paper or microform, into digital form.

second generation microfilm see **generations of microfilm**

self-threader

A special leader that prevents jamming during processing.

service copy see **generations of microfilm**

show-through

An effect that happens with translucent paper where the text from an underlying sheet (or the verso of the same sheet) can be seen through the sheet. See also **bleed-through**.

skew

A defect in which the edges or angles on a document are not strictly aligned parallel or are not at right angles to the edges of the film.

silver halide film

A long-lasting film on a polyester base that, if processed and stored correctly, has an estimated life expectancy (LE) rating of up to 500 years. The emulsion layer consists of silver crystals suspended on gelatin. Silver halide is generally used for first and second generation microforms.

splice

A join made by attaching two pieces of film together so that they will function as a single piece. Only ultrasonic splices are acceptable for preservation microfilming. These should be made only on the camera master, and the number of splices per reel is limited to six splices (three retakes) per roll.

spindle

A shaft that fits into a hole in a film reel or spool. Reels are mounted on spindles and locked during the transport of one reel or spool of film to another.

spool see **reel**

stakeholders

All the organisations or individual people who have an interest in a particular issue or event.

standards

Microfilming standards are specifications that cover strict requirements of all aspects of microfilming from preparation through to filming, processing and storage. Standards provide guidelines against which products can be assessed and because their conditions are very specific, they reduce misunderstandings between clients and suppliers and promote uniformity throughout the industry. Standards are produced by many different countries and also internationally by the ISO (International Organisation for Standardisation). A list of international microfilming standards is provided in the **Learning Guide**.

step and repeat cameras

Essentially **planetary cameras** that have been specially engineered to produce 105mm microfiche. They are designed to position image frames in standard rows and columns on microfiche.

step tests

Used to check for the best exposure levels. During the step test, selected items are filmed consecutively at different exposure levels, e. g. **increments** beginning at the lowest level, and moving to the highest.

table-top processors

Table-top processors use high temperatures to make up for their lack of tank capacity. In table-top models, processing involves short immersions in hot solutions for development, fixing and washing, followed by high temperature drying. Table-top processors do not allow operators to vary development times and the contrast of the film cannot be as readily controlled as with deep-tank processors. See also **deep-tank processors**.

take-up reel/spool

Any reel or spool onto which film is wound.

targets

The equivalent of a book's title pages. They provide technical details about the filming (e.g. the reduction ratio), bibliographic details of the original material (e.g. title, dates, place, publisher), details of who is responsible for the project and any irregularities in the original. See also **technical targets**, **resolution test target**, **uniform density target**.

technical targets

Consist of

- a) the **resolution test target** that is filmed on the frames immediately before and after the text. This enables the resolution level to be checked and the reduction ratio verified.
- b) the **uniform density target** that is used in quality inspection to check how well the camera lamps are balanced. The uniform density target is nothing more than a uniform white sheet of card stock or heavy paper.

template

An outline or a form.

thermohygrograph

A mechanical or electronic instrument which records temperature and relative humidity. Sometimes called a hygrothermograph.

third generation microfilm *see* generations of microfilm

trailer

A length of non-image bearing film that is used at the end of a reel for protection and for threading into microfilm equipment. See also **leader**.

ultrasonic splice

A splice created by internal friction when vibration, created by high speed sound waves, and pressure are applied.

ultraviolet (UV) radiation

Electromagnetic radiation having wavelengths between that of violet light and long X-rays. See also **electromagnetic radiation**, **electromagnetic spectrum** and **infrared radiation**.

underexpose

Insufficient exposure of sensitised material caused by too little illumination, too short an exposure time, too small a lens aperture, or a combination of all of these.

uniform density

One of the **technical targets** that is used in quality inspection to check how well the camera lamps are balanced. The uniform density target is nothing more than a uniform white sheet of card stock or heavy paper.

use copy *see* generations of microfilm

variant

Different, especially in the context of the different editions of newspapers that are issued at the same time, e.g. country edition, metropolitan edition.

verso

The reverse, e.g. in the context of the reverse page.

vesicular film

This type of film is made up of small bubbles within a plastic layer. These bubbles scatter the light and produce visible images. Vesicular film is **image-reversing** (positive from negative, negative from positive). It has good duplicating qualities and is used for third generation service copies. While the longevity of vesicular film has yet to be determined, it is considered to have a limited life expectancy.

vinegar syndrome

The slow chemical decomposition of acetate plastics that results in the formation of acetic acid. The main symptoms are a vinegar-like odour and evidence of the film becoming buckled and brittle.

wash

A step in film processing in which foreign matter and chemicals are removed from the developed film.

winder

A device consisting of a **spindle** geared to a crank, used in pairs to transport film from one reel to another.

Index

The following is a combined index to all ten modules in the preservation microfilming training materials. In addition, each module has an individual index.

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Background

The training materials have been developed by the National Library of Australia, in collaboration with the State Library of South Australia and under the auspices of IFLA PAC, and will be provided to people within the Asia and Pacific regions as a training resource. The materials will also be used within Australia as part of an accredited TAFE training course.

The training materials consist of 10 modules, 6 wall charts, a Log Book, a Learning Guide and a Glossary/Index. We expect that users will both read a printed version of the materials and download them as PDF files from the National Library of Australia's website – www.nla.gov.au

