

# Australian Newspaper Plan

Preserving for Permanent Access

## Environmental conditions for storing print and microfilmed newspapers

### Introduction

The purpose of this paper is to draw together the factors which libraries will need to take into account, within the context of their own requirements, when considering environmental conditions for storing their print and microfilmed newspapers. Under the Australian Newspaper Plan, ANPlan libraries are cooperating to ensure that Australian newspapers are preserved for permanent access. The primary strategy that has been used to achieve this is to preserve the content of printed newspapers by microfilming, and storing the preservation master under suitable conditions for long-term access. To ensure that the printed newspaper remains accessible for as long as possible, the environmental conditions for its storage must also be controlled.

### Preservation strategies

All collection material degrades over time, but the speed of this degradation can be managed by putting in place preservation strategies. In considering the preservation of printed and microfilmed Australian newspapers it is important to evaluate their condition; their inherent stability; additional physical damage which may be caused by handling and use; the environmental conditions the items are stored within; and risks of damage from disaster.

In ensuring permanent access to the nation's printed and microfilmed newspapers ANPlan libraries will use a number of different preservation strategies:

- reformatting of printed newspapers (e.g. production of three generations of microfilm) to ensure the information content is captured and preserved;
- disaster planning;
- ensuring custody arrangements are suitable for long-term access;
- ensuring all newspapers (and reformatted versions) are catalogued on the national bibliographic database;
- controlling the environmental conditions under which newspaper material is stored;  
and

- appropriate packaging of newspaper material, ensuring that it is protected from changes in environmental temperature and humidity, may be moved and handled with limited contact with the object, and is protected from damage in a disaster.

## **Environmental conditions**

Environmental conditions, in combination with other preservation strategies, will ensure long-term access is maintained. Different institutions will have differing capacities to provide storage environments that meet generally acceptable levels for the permanent retention of newspaper collections.

### *Print collections*

Although there are no internationally accepted standards for the storage of paper, there are generally held views that the conditions of  $20\pm 2^{\circ}\text{C}$  and  $50\pm 5\%$ <sup>1</sup> relative humidity are required to maintain paper collections long term. Controlling temperature is fairly simple. Controlling humidity within a storage area is much more difficult and is more costly to achieve. Not all institutions have the equipment, infrastructure or money to maintain environmental storage parameters within these tight limits.

Paper materials react to changes in humidity levels by absorbing and releasing moisture in the air around them. If the air is very dry the paper becomes brittle; if it is too humid then it may become mouldy. Whilst the actual level of humidity in the air is important for these two reasons, the impact that the humidity has on paper is worst when the humidity is changing quickly. Rapid changes in the relative humidity make the paper contract and relax over and over again, weakening the paper. Any media on the paper may also become cracked and fall off because of the changes in the size of the supporting paper. These impacts can be reduced by use of appropriate packaging.

### *Microform collections*

Most libraries hold microform collections that consist of both acetate and polyester film base in both their master and user access collections. Acetate material is much less stable than polyester and should be stored in as cool a temperature as possible in order to extend its life. Where possible, acetate in an advanced state of degradation should be separated from more stable acetate. At room temperature acetate will be stable for only 40 years according to the Image Permanence institute.<sup>2</sup>

Under ANPlan, partners have been encouraged to replace acetate masters with the more stable polyester material. The properties of polyester film are widely documented and standards exist for its long-term storage. Australian Standards (AS 3674-1989) indicate

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<sup>1</sup> Standard for the Physical Storage of Commonwealth Records, Appendix: Guidelines for Records Storage. National Archives of Australia [http://www.naa.gov.au/Images/standard\\_tables\\_tcm2-1044.pdf](http://www.naa.gov.au/Images/standard_tables_tcm2-1044.pdf), page 7

<sup>2</sup> IPI Storage Guide for Acetate Film, James M Reilly, 1996  
[www.imagepermanenceinstitute.org/shtml\\_sub/acetguid.pdf](http://www.imagepermanenceinstitute.org/shtml_sub/acetguid.pdf)

that polyester film should be used for the production of microfilm and, for archival requirements, should be stored at temperatures below 21°C and between 20 – 40 %RH. The humidity should be non-fluctuating. Polyester material is expected to last up to 5 times longer than acetate film if stored under the same conditions.

Whilst fluctuations in temperature and humidity should be avoided for microfilm as for paper, the impact of these changes is less on microfilm than for paper collections. Polyester is much more robust than paper and the gelatine layer is able to expand and contract.

The National Library offers ANPlan partners the opportunity to store their master microform for newspaper collections in the Library's cold store, maintained at 8±1 °C and 35±5 %RH.

### **Conclusion**

Environmental conditions are an element in the range of preservation strategies which need to be applied by ANPlan libraries to ensure the longevity of Australian newspapers. A range of factors including the condition of the newspaper material, local ambient environmental conditions, packaging, resources available for maintaining suitable environmental conditions and other strategies which are being implemented will all determine what environmental conditions are selected by ANPlan libraries.