

Acetate in Oz: Some Strategic Moves

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INTRODUCTION

I would like to add my voice to the words of congratulations and thanks to the British Library for organising this forum, and for their generosity in making it possible for me to come across the world to be part of it.

The issues we are discussing today have an importance extending beyond cellulose acetate, as they reflect our ability as custodians to deal with common threats to the documentary heritage we are charged with preserving. As I will argue later, we need to see this situation in the context of the full range of preservation management issues that face our institutions. While it imposes a burden and a challenge on us as preservation managers, it also presents opportunities to sort out some things that have needed attention for some time.

I have been asked to talk about problems with cellulose acetate microfilm collections in Australia, and specifically the strategies – both national and local – that have been adopted or at least explored in response to those problems. In the time I have I will not be going into any of these in great detail, but I hope I can give you some sense of the situation down under, and perhaps draw out a few issues that might make this more than just an ‘us too’ session!

One thing to emphasise from the start is that we have had a number of goes at dealing with acetate microfilm collections: it is not a newly discovered problem in Australia. One significant context in which we have been working is that of a national strategy for all kinds of cellulose acetate collection materials. Explaining this national strategy will form a major part of my presentation, with issues and approaches specific to microfilm discussed towards the end.

IS THERE AN ACETATE PROBLEM IN AUSTRALIA?

So, to start at the easy end, is there a problem with acetate materials in Australian collections? Indeed there is! As the clichés have it, Australia is young country, a backwater, a kind of Galapagos Archipelago cut off from the rest of the world - but most ideas that turn out to be bad ideas elsewhere in the world get taken up and later regretted by Australians too. Cellulose acetate is represented in Australian collections in much the same ways - and I suspect in similar proportions - as in Europe and North America.

How do we know? Ask just about anybody working in a large Australian library or archive if they are familiar with vinegar syndrome and they will probably have a story to tell you. My own anecdotal evidence relates to a wonderful but almost unknown collection of photographs taken from the 1940s to the early ‘70s, now held by the [National Archives of Australia](#). The Australian Information Bureau collection of some hundreds of thousands of negatives and transparencies were held in cool storage, but there was always a hint of vinegary smell about certain boxes and certain shelves. Over some years of working at the National Archives, I encountered many negatives that became deeply channelled and virtually impossible to be copied. Knowing the collection well, I was amazed at how quickly this deterioration had happened, even in reasonably well-controlled cool storage.

For more quantifiable and useful evidence that there might be a problem needing attention, in the late 1990s a working group convened by the [National Library](#) conducted a national survey of acetate holdings in public collecting institutions. Although there were weaknesses in our survey, we were able to report that:

“Of the thirty survey responses completed, most institutions surveyed held cellulose acetate materials. Estimates of the number of these cellulose acetate materials for each format were up to 2 million flexible negatives; 0.7 million reels of motion picture film; 200,000 reels of microfilm; and 140,000 audio reel-to-reels.” [The amount of microfiche affected was unable to be quantified; some institutions referred to acetate microfiche but on further examination these turned out to be jacketed 16 mm film.]

Further:

“The questionnaire revealed that the extent of deterioration of cellulose acetate materials nationally is poorly defined. ...However, data from those institutions that were able to estimate levels of deterioration revealed that significant deterioration had already occurred.” (NLA, 2000)

Without claiming any great rigour in this, we felt there was a solid body of evidence that there was - and is - a problem with acetate materials amongst Australian heritage collections.

A NATIONAL RESPONSE

Although the focus of the current Forum is acetate microfilm, in Australia we tried to build a strategy that addressed all kinds of acetate materials, including microfilm. We did this for reasons that may be relevant to others who are faced with similar problems in their microfilm collections. The main reason for taking such a broad approach in Australia was that much of the expertise in understanding cellulose acetate deterioration was not within the library community with a passionate interest in microfilm, but elsewhere with a primary interest in other kinds of material. There was considerable experience and expertise amongst the staff of our National Film and Sound Archive, for example, and we needed to tap into that expertise.

On the other hand, we also knew that many preservation and collection managers in the library and archives sectors felt overwhelmed by the mismatch between their responsibility and the resources they could bring to the task of fixing their acetate problems. The fact that two or three institutions were loaded up with expertise and ideas about acetate, while all around the country other people were quietly wishing either that no-one would mention the word ‘acetate’, or that someone else would fix it for them – this looked like a situation crying out for some cooperative action.

Despite the interest of some conservators in solutions like emulsion stripping, when it came down to it we knew the practical, collection-wide answer lay in collection assessment, protective storage, and replacement. So we wanted to encourage ways of working together that would make it easier for all of us to find the energy, focus, staff, and funds to do something positive about the acetate in our collections. We were particularly keen to minimise the duplication of effort in researching the problems and solutions, so people could get on with planning and taking action.

The other driver for taking such a broad national approach was the hope of attracting resources: building a broad national campaign which might include resources to improve the management of acetate microfilm holdings along with all the other kinds of acetate materials. A similar approach to cellulose nitrate had been successful some years earlier, and we believed that a broad campaign which focused on common patterns of deterioration, common messages of impending loss, and common management solutions stood a better chance than one focused solely on one kind of material such as microfilm. As I report below, the campaign in Australia was not particularly successful in attracting additional funding, but I remain convinced that the campaign had much greater impact with CEOs and others in institutions because we were able to talk about the whole problem needing to be managed, not just the microfilm holdings (which were often dismissed as ‘not real collections anyway’).

While initially we tried to estimate the level of additional funding resources needed to deal with the problem nationally, we eventually decided there were too many uncertainties to allow anything like a realistic figure. After some initial investigation we also became convinced that there was little chance of attracting national funding at the level required to deal with everyone’s problems. This led us to look for an approach focusing on action we could each take, enabled by a national strategy that:

- identified and shared information and tools;
- provided community information and compelling arguments for taking action that institutions or groups of institutions could use;
- increased suitable storage capacity for acetate materials, either in total or by improving access to the capacity that already existed;
- encouraged the adoption of preservation priorities as key drivers for new or existing duplication programs;
- improved the planning processes for acetate management programs; and

- if possible, provided a framework for seeking additional funding that could be used for local, regional or national programs of assessment, storage or duplication.

NATIONAL ACTION

What did these aims mean in terms of action? Our agreed beginning steps were to:

- set up a working group from major institutions to guide the project;
- publicise the initiative at every opportunity;
- negotiate a strategy statement that institutional Chief Executive Officers were invited to sign – which they did, for the all institutions that indicated in our survey that they held acetate materials;
- set up a freely accessible web-based information source that would help in understanding acetate problems and solutions, and offer some guidance in managing remedial programs.

The strategy statement we asked CEOs to sign was very well received. There was a surprising consensus of agreement on what we wanted in such a national strategy given the realities of funding constraints.

The statement begins with a vision that:

“Australian institutions will implement strategies to ensure continuing access to the portion of our documentary heritage on cellulose acetate”.

From this starting statement it must already be clear that the national strategy hinges on institutions taking action themselves. In fact, the national strategy statement proposed that by 2005 each participating Australian institution would have thought through the question of how they were going to provide ongoing access to their acetate collections of enduring value. This didn't mean they had to have completed, or even to have started implementing their institutional strategies by 2005, but they did commit to developing a plan that addressed assessment, storage, copying and overall management of the problem.

With regard to assessment, we urged institutions to carry out some assessment that could form the basis for understanding and action – how much, how bad, how important, how soon? While recognising that remedial action is a higher priority than endless statistics on the problem, there is a need to gather sufficient information on which to base priority decisions for action. We also said that nationally, we would provide some guidelines on assessment and strategy planning. That has been done.

We also recognised there are occupational health and safety concerns associated with handling large amounts of seriously deteriorated acetate, so we would provide some OH&S guidance.

With regard to storage, our national approach has been to provide information on the benefits of controlled cool and cold storage, largely drawing on the excellent work of the Image Permanence Institute, and to list locations of suitable storage facilities in Australia. We are fortunate to have access to a number of facilities, although not enough to accommodate all material that needs cold storage, nor to resolve all conflicts over segregating deteriorating acetate from other materials that also warrant protective cold storage.

With regard to copying, our national strategy simply urges timely replacement-quality copying programs, and undertakes to:

- encourage the setting up of online databases to identify items so that copying effort is not wasted;
- promulgate standards for copying in each format; and
- make guidelines available on possible discard of acetate materials that have been copied. I regret to say that some of this work has not yet been completed.

In the area of program management, the national strategy undertakes to support the management decisions of institutions by providing a range of information, including:

- basic information about cellulose acetate deterioration;

- links to institutional policies and strategies that might be used as models;
- reports on progress in addressing the needs of individual collections;
- a register of experience and expertise in managing particular aspects of acetate collections;
- links to literature about acetate management
- an online discussion forum for asking questions, debating issues, and raising proposals for cooperative ventures such as bulk purchasing of materials, and the sharing of storage space.

All of this information is provided via a website called [ANICA](#) - Australian Network for Information about Cellulose Acetate.

AN EFFECTIVE NATIONAL STRATEGY?

It would be fair to say that the national strategy has made a difference in raising both the profile of acetate problems within institutions, and the understanding of the problems at a management level. Many institutional CEOs now talk in well-informed terms about acetate problems and the need to do something about them. This is a positive difference. Many collection managers and conservators also now have a sense of a problem shared, with a finite range of options for seeking improvements. Again, this is a positive difference.

On the other hand, the strategy has not attracted additional funding at a national level for action to deal with acetate collections, either in terms of additional storage capacity, or national duplication programs. However, since the strategy was agreed in 2002, there have been at least three significant 'coincidental' funding improvements relating to acetate collections:

- at least one State Library was able to use the national strategy to convince its relevant government Minister to allocate funding for replacement of all priority deteriorating acetate microfilm of the state's newspapers;
- a number of national collecting institutions have been able to allocate collection depreciation funds to replacement of acetate collections;
- within some institutions such as the National Library of Australia, the national strategy has added credibility and context that have assisted bids for internal re-allocation of resources to manage the risks of information loss associated with acetate decay.

While it is hard to point to large national programs that have arisen as a result of the [National Strategy for Cellulose Acetate Collections](#), these results suggest it has been more than just an empty gesture.

A RESPONSE TO CELLULOSE ACETATE PROBLEMS WITHIN THE NLA

As just indicated, there has been a very successful program for dealing with acetate within the National Library. This probably reflects a higher level of resourcing than many of our partner institutions in Australia, and a higher degree of resource flexibility compared with some other agencies; it possibly also reflects the motivating effect of being centrally involved in promoting the national strategy concept. The National Library's internal strategy is available on ANICA, so it will not be described in detail here. Its success has been partly based on good planning and institutional commitment, but also on some elements of good fortune and good decisions taken many years before we characterised what we were doing as an 'acetate strategy'.

The good fortune relates to three elements in particular:

- the prior existence of well managed cool and cold storage facilities in the Library, set up many years ago without any thought of their use for storing acetate materials;
- the prior existence of a large collection digitisation program, set up principally for access purposes but dedicated to high quality outcomes ("copy once, use many times") which has been easily adapted for acetate duplication purposes – although at this stage not for acetate microfilm; and

- the employment of a series of enthusiastic students with an interest in sorting out our acetate collections (especially photography students interested in deterioration of photographic images).

Our current acetate management program has also benefited greatly from decisions taken in past years to invest funds in duplicating some particularly important microfilm collections, and in taking proactive preservation action to manage our large collection of oral history recordings, which includes some acetate materials. Both of these commitments considerably pre-date our ‘branded’ acetate campaign, but they have added enormously to it.

A PRINCIPLES-BASED APPROACH

The National Library’s internal acetate strategy was successfully negotiated with collection managers and corporate management at least partly because of the principles on which it is based, as these principles, which were seen to support the Library’s corporate directions in areas other than preservation. These included:

- a commitment that any assessments or surveys would be used to drive action decisions, not just provide statistics;
- commitments about maintaining access while any action was being planned and undertaken, and as the intended outcome of any action; and
- commitments about the quality of copying.

Without these commitments, I doubt we would have won the support of collection managers in the far-reaching and often disruptive programs we have undertaken with parts of their collections.

Translating assessments into action decisions is not necessarily an intuitive process; we found that we needed some simple way of translating our assessments into priorities. The following table represents one attempt to turn assessments of value, level of deterioration and level of use, into a simple scheme of priorities for copying:

Table 1: Determining priorities for copying

Value of Material	High Significance				Medium Significance				Low Significance			
Level of Degradation	High		Low		High		Low		High		Low	
High/Low use	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Priority for copying	1	2	4	5	2	3	5	6	3	4	6	7

Even though this may look complicated, it is really quite simple - even simplistic - as it ignores any finer gradations of judgment than ‘high’ or ‘low’ against each of these criteria. While we recognise that there may be value in more subtle assessments, in practical terms we often find such blunt instruments give us enough information to make the kind of decisions we need to make, and that more information is not necessarily more helpful.

The key to making progress has been the tailoring of strategies to the circumstances of different collections. We tackled our Pictorial collections first because everyone agreed they contained the greatest amount of easily found acetate at the greatest risk. We also developed a way of targeting priority groups of papers amongst our Manuscripts collections, where any photographic material is much more widely scattered and less clearly identified. Typically, we look for areas of maximum leverage for the resources we are going to invest.

Over about 3 years of persistent cooperation between Preservation and those two critical collection areas - Pictures and Manuscripts - all of the known high priority acetate materials have been identified, assessed, re-housed to appropriate storage, and either copied or programmed for copying. Along the way, bibliographic control has also been improved. Overall, to date about 150,000 photographic sheets negatives and about 1,500 rolls of film have been re-housed and programmed for copying. This has been achieved largely by using clever and committed, but relatively lowly paid students working one to two days per week, with some consistent management input. We see the results as a good impact on a serious collection problem, at a quite modest input of resources sustained over an extended period.

ACETATE MICROFORM COLLECTIONS

And so, belatedly, to acetate microfilm in Australia, and how it fits into the broad strategies for managing acetate collections that I have been describing.

As far as we know, microfilming was first explored in Australia by university libraries in Sydney, Melbourne and Adelaide in the late 1930s, and what are now the [State Library of New South Wales](#) and the National Library were both proposing microfilming projects based on overseas developments in the mid to late '30s. These proposals were driven by a desire to make British archival records relating to the development of Australia more easily available to Australian researchers. World War 2 interrupted those plans, but in 1948 the Australian Joint Copying Project, involving the National and State libraries I have just mentioned and a number of UK record archives, became the first serious Australian microfilming project. As I will explain shortly, we still live with many of the problems built into that pioneering project, including the use of acetate film, even though it was the best film available at the time.

While libraries were the clients who drove the creation of a microfilming industry in Australia, it did not take very long for business applications to also become important. I am sure this happened elsewhere as well, but the relatively small size of the market in Australia meant that most of the bureaux that were set up and operating in the 1960s, 70s and 80s were servicing business clients as well as, and usually in preference to, libraries. For many of these business clients, long term considerations of film stability did not really matter at all.

The role of bureaux has had an interesting influence on the acetate and other preservation problems with microfilm in Australia. Over the years a few of the major libraries have undertaken their own microfilming operations – although not the National Library. The various Commonwealth and State Government Printing Offices also offered microfilming services of varying quality to libraries and archives until the great privatisation wave that swept most of them away in the early '90s. Much of the filming of relevance to Australian libraries was done by a relatively small number of private firms, either Australian branches of multinational companies or small local firms. Standards, and even the level of interest in what libraries were trying to achieve, have varied greatly between firms and over time. There has been outstanding work done by a few small operators who recognised a niche market for high standards and real expertise; some of these firms are still in business, while some are not.

In general, we like to believe that acetate disappeared from the stock shelves of our bureaux by about 1984. However, I know that is not completely true: one of the multinational bureaux has recently told us they continued using acetate until 1993 – although not for our work. Even in the later 1990s, I was shocked to discover that one very small country bureau, a single person operation, was filming country newspapers onto her stock of acetate film, and that our checking processes had not detected it. More recently I have been surprised to learn that we still purchase microfilm from some overseas suppliers that turns out to be acetate, and that we do not consistently check what we buy.

All of this highlights some assumptions we have tended to make as preservation managers over the years since microfilming became a popular preservation strategy - assumptions that have come back to bite us:

- First of all, I think librarians tended to assume that microfilming would automatically produce a good and preservable image. It wasn't until the mid to late 1990s that some major Australian libraries recognised the need for quality control checking. (This situation almost exactly parallels the experience which led me into conservation and preservation management in the first place, working as an apprentice to a highly trained and skilled trade library binder who justified his book butchering practices by saying this is what librarians asked and paid him to do, while condemning

them for not knowing any better.) Fortunately, and as a result of considerable hard work by institutions and bureaux, microfilming standards did rise considerably in Australia in the 1990s.

- A second assumption was that all microfilm was a stable medium.
- A third assumption was that we could rely on bureaux to do a good job, so microfilming project managers did not require specialist knowledge or training.
- A fourth assumption was that everyone would see microfilm as a great improvement in accessibility.
- We may now be living with another assumption, that we can successfully manage microfilm as the preservation reformatting medium of choice into the distant future. That is probably a debate for another day.

MANAGING ACETATE MICROFILM IN AUSTRALIA

How have we been managing the acetate problem with our microfilm in Australia? At one level, the answer is pretty much as we have been managing our other acetate materials: with more or less vigour depending on the resources available. Partly thanks to our national acetate strategy there is widespread awareness of the potential problems and understanding of what needs to be done; the remaining barriers are largely based on resources and priorities.

The national survey we conducted in 2000 provided some data on the size of the problem: for example, the total estimates of acetate microfilm held by 17 institutions came to about 200,000 reels, out of an estimated total of about 1 million reels of microfilm. These are very unreliable figures. This was the best information we could put together 5 years ago, and it would be foolish to conclude anything based on these figures, beyond a general sense that many Australian institutions believe a significant portion of their microfilm holdings are acetate.

The National Library has been taking action with its acetate masters for some years. It is also good to report that quite a few of the State Libraries, the other big holders of acetate microfilm, have also been active, but there remains a lot still to be done by most of us.

However, much of what remains to be done is conceptually easy – the information and the thinking that went into our national acetate strategy will work for our acetate microfilm masters. We need resources to do it, and some institutions need help with thinking their way into an effective program, but the basic core issues have been set out in our national strategy applicable to all kinds of acetate materials.

What has changed for us is that we have started thinking beyond our microform masters, big as those challenges might still be. We have started to recognise that Australian libraries hold huge collections of information on service copy microform, acquired to service the needs of our clients, which are now potentially threatened by loss. This is largely material for which we hold no preservation responsibility, but which we want and need to keep accessible to our users.

I want to refer very briefly to four case studies. These are a very small sample of important microfilming projects or collections with which the National Library is involved, and their purpose here is to illustrate some of the issues that arise for us as we try to manage our acetate microfilm collections.

- [NPLAN](#) - the National Plan for Australian Newspapers - is a major effort by the national and state libraries to preserve our newspaper heritage. The main focus of NPLAN has been microfilming, going back in some cases to the 1950s and certainly including large amounts of acetate. There is no question about our collective and individual responsibility to preserve this material, but there are large questions about our ability to locate and access masters that are often held by commercial bureaux. NPLAN is about to be complemented by a national newspaper digitisation program that may or may not solve our problem of acetate masters, while creating its own set of current and future preservation dilemmas.
- [AJCP](#) - the Australian Joint Copying Project, which I have already mentioned as a starting point for Australian microfilming. Assessments by the NLA show that up to 80% of the masters for this material are on acetate. We are in a much better position to deal with this problem because we hold the masters; and we have been replacing acetate and cleaning up other problems for at least the past

10 years. However, ownership is complicated by caveats placed on some material by some record offices in the UK back in the 1940s and 50s.

- [PAMBU](#) - the Pacific Manuscripts Bureau - is another cooperative program with a number of Australian and international partners, which microfilms records from Pacific Island nations. Much of this material, stored by the National Library, turns out to be acetate, but we are in a quite ambiguous position as we do not own the material and can only encourage the Bureau and the other partners to take the acetate issue seriously, including the expenditure of additional resources to fix the problem.
- Finally, I have chosen the Modern Indonesia Project collection as just one example of a particularly significant collection of overseas material, in this case consisting of around 70,000 microfiche, which we believe will require replacement within 5 years given current AD strip readings. This material embodies many of the challenges with our extensive collections of overseas produced service copy microform, and is especially important in the context of our large Asian collections. Obviously, we are totally dependent on the ability of someone else to supply us with replacements as we have no legal rights to duplicate it ourselves.

In summary, these cases studies suggest we are dealing with issues such as different levels of deterioration, responsibility, complications in ownership and duplication rights, and potential replacement strategies, that have to be sorted out as we go. To deal with this kind of complexity, the National Library is using a targeted approach, based on considerations of what we are responsible for, what we want to achieve, and where we can gain maximum leverage.

In practical terms, this means we are dividing our microform collections into categories of NLA-produced or -commissioned materials; materials produced by collaborations in which we have been involved; non-NLA Australian materials; and overseas materials:

- For the first category, for which the National Library owns and holds the preservation masters, our focus will be on the masters, which are currently being assessed for acetate content and condition. All of this material is held in cool storage. In line with existing practice, we will continue to replace any acetate masters in a prioritised program, and replace acetate service copies when they need replacing.
- For cooperatively produced materials for which the National Library holds masters, again we will assess their condition, and negotiate with partners about replacement.
- For other Australian materials, for which we do not hold masters, we will identify priority collections and survey the service copies we hold, seeking replacement arrangements where necessary with local owners of masters.
- For non-Australian material, we have a team of collection development staff looking for ways to identify materials that would be a priority for replacement if they were found to include deteriorating acetate. Once we have identified any acetate in these collections, we hope we can work through the Roundtable to find rational ways of replacing what needs to be replaced.

POSITIVES FROM NEGATIVES

It is always good to end on an optimistic, if challenging note. I think there is much potential good that can come from the current problems with acetate. As we have already seen in Australia, and through the International Roundtable, there is potential for improving the coordination of our efforts, and this may carry over into other areas of preservation management.

The question of replacing acetate also inevitably brings many of us into an encounter with digitisation, and forces us to consider whether digital copies can be managed as preservation copying medium. The time is surely right for us to very carefully consider and articulate the circumstances in which we would accept a digital copy as a preservation reformatting master, and the circumstances in which it would be more cost-effective to produce digital copies than microform as preservation masters.

Finally, with digitisation in mind, I believe we can use the example of cellulose acetate microfilm, as a moral tale, telling us even when we think we have done all the right things, vigilance, ongoing vigilance, is the price of preservation. We must take this principle with us into the world of digital access to information.

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WEB SITES REFERRED TO IN THE TEXT

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