

A disaster waiting to happen? Preservation of audiovisual collections at the National Gallery of Australia

Fiona Kemp

In our technologically sophisticated world, we are continually witnessing rapid changes to audiovisual (AV) formats and 'platforms' used by artists. How can we possibly keep up? There is recognition that the obsolescence that goes hand-in-hand with such advances in technology is fast becoming a serious matter in the cultural institution environment. These issues can provide complex challenges with regard to AV collections.

The National Gallery of Australia's (NGA's) AV collection comprises approximately 2500 objects in a variety of formats; the largest part of this collection consists of video tape and reeled film. The Paper Conservation section directs the care of this collection and for nearly a decade has been actively making changes to the way in which the NGA documents, stores and generates AV derivatives. The section is also responsible for educating other staff involved with the overall care of this collection. In an ideal world our institution would employ a new media curator, a new media conservator and information technology (IT) staff to deal specifically with our collection and would also install in-house dedicated cold storage facilities for these items.

This paper will outline several different AV projects directing preservation and management of this collection at the NGA and detail challenges such as collection focus and status, ethical considerations and the implications for conservation. The complexities and confusion that can present with such collections, the ongoing concerns related to storage, the need for education about this type of material and also the future of digital asset management are all necessary topics for discussion. Meanwhile AV collections remain to some degree neglected. Are we doing a lot of time wasting?

Keywords

audiovisual, new media, Carol Jerrems, Kenneth Tyler, James Turrell

Introduction

Of the approximately 2500 AV items cared for by NGA Conservation, about 270 are catalogued art objects and 2250 are either important art archive objects or are derivatives. Formats include reeled film, video tape, laserdiscs, DVDs and hard drives. The majority of the collection consists of video tape and reeled film. A small number of works have dedicated playback equipment.

Audiovisual works of art have been acquired intermittently, starting in the late 1970s and through the 1980s when the National Collection was being established. Acquisitions include interesting and sometimes rare experimental video pieces by Australian artists and it is likely that works were collected when artists known for working in other media experimented with AV technology. It is possible the longevity of these works within the collection was not considered as, at the time of acquisition, the world of AV technology was changing at a steady pace, but not like the rapid pace of the 1990s and the new millennium. Consequently, consideration of future preservation needs of these media at the NGA was not given much thought prior to the mid-1990s. It should be noted that in 1980 UNESCO

declared moving images part of the world's intangible heritage and recommendations were made to the United Nations for the prevention of loss, and measures for safeguarding and preservation (UNESCO website).

Before 2000, little attention was given to the collection. Until recently, the AV collection was stored in several Brownbuilt cabinets in the corridors of the NGA's Parkes art storage facility; these are now located in the Collection Study Room. Consideration was only given prior to loan or display and generally only in terms of duplication for display purposes. Occasionally, dedicated playback equipment is retrieved from storage with the risk that equipment may have become obsolete and new delivery models must be investigated.

Resourcing of preservation work

Personnel

Traditionally paper conservators at the NGA and many other Australian museums and galleries have been involved in photographic conservation. This involvement has extended to AV material because of the apparent synergies between the two. Since about 2000, Paper Conservation has advised on the care of the NGA AV collection and assisted with making ongoing improvements to the way the NGA documents, stores, and provides access to this material. Prior to this, preservation of the AV art collection was largely neglected, being acquired and stored almost as archival material.

Australian cultural institutions rarely have dedicated new media curators or conservators. As the nature of collections change and our reliance on technology increases, this will make caring for growing AV collections increasingly challenging. Part-time care is frustrating for those involved as staff are often unable to dedicate sufficient time to monitor and meet ongoing preservation needs. These arrangements also make it difficult to retain corporate knowledge associated with AV collections. It is therefore important that cultural institutions implement policies and procedures for AV collections covering arrangements for storage, migration requirements, registration procedures, and conservation and preservation plans.

In 2005 the NGA's multimedia section developed a draft media migration policy, which took into account input from the key stakeholders – that is, Conservation, Registration, Curatorial and Multimedia. The policy was not progressed further because the AV collection did not have a sufficient profile within the organisation nor were there adequate resources for its implementation.

In the initial stages of the preservation of the AV collection, liaison with Curatorial staff was important to identify priorities and build an awareness of the items and their preservation requirements. This work involved clarifying documentation, cataloguing and shared consistency in the use of technical terminology.

At different stages over the last ten years, curatorial assistants and interns have been assigned to update catalogue records, correcting information concerning derivatives, synchronising terminology and other administrative tasks.

Migration and storage facilities

The NGA lacks in-house expertise to undertake preservation-quality cleaning and copying of AV items, and the capacity to provide appropriate storage for these items. These factors involve a massive investment for any institution. As a result, the NGA has used contractors, external companies and other local cultural institutions to provide services and facilities. The existence of cool and cold storage facilities within Australian organisations seems to be rare, particularly for art galleries.¹ The NGA's AV collection is partly stored at the gallery's Parkes storage facility (20°C and 50% RH) and, for the last five years, a majority of the video and reeled film has been stored at the National Library of Australia's (NLA's) cool and cold storage facility.

As the formats for AV items evolve, so too do their storage needs. For example, a video tape would require ongoing migration and cool storage to optimise its longevity whereas a born-digital work of art supplied on a memory stick would require preservation in an uncompressed digital file on a secure server. Digitisation of collection material could potentially mitigate the need to constantly duplicate and migrate.

In the past, as an alternative to migration, international works not in a suitable condition for migration were re-purchased through Electronic Arts Intermix's (EAI's) Artists' Media Distribution Service. We should not lose sight of the fact that much of an artist's material is reproducible and subject to copyright. The ability to re-purchase new copies rather than trying to retrieve a poor quality version has been a viable strategy. However, there are some risks involved with re-purchasing content; it is important that the new copy provided has the same content and has not been reworked or 'improved' by the artist.

Professional networks and information resources

Conservators in Australian cultural institutions have shared information on an informal basis in an attempt to achieve some level of consistency in the approach to preservation of AV collections. In 2003, a colleague at the Queensland Art Gallery initiated an informal 'user group' for conservators responsible for the care of AV collections in Australia. While short-lived, the user group highlighted the need for sharing of information. The Conservation Distribution List (Cons DistList) also provides an international forum for exchanging or acquiring information from other conservation professionals. Most recently, quick local informal surveys have been used as a means of improving AV care systems.

As conservators caring for AV collections, we can draw on guidance and specialist information provided by the Image Permanence Institute (IPI) in Rochester, USA. Founded in 1985, IPI is a university-based research laboratory specialising in the research of photographic images and other forms of print media. IPI has developed conservation products to guide in the care of AV material, such as the IPI Media Storage Quick Reference, IPI Storage Guide for Acetate Film and A-D strip testing. (IPI website)

The wealth of information available on the internet has been an important source for providing standard information.² Collaborative research such as the Tate's 'Media Matters' and the publication *Permanence through change: The variable media approach* published by the Solomon R Guggenheim Museum in New York and the Daniel Langlois Foundation in Montreal provide relevant specialist information for collections such as that of the NGA.

Key NGA audiovisual projects

Over the last decade a number of specific AV projects have advanced and influenced the direction of the preservation and management of the AV collection at the NGA.

The Carol Jerrems collection

The Carol Jerrems film and sound collection includes about forty items that were gifted to the NGA by the family in 1981, a year after Jerrems died at the age of thirty-one. Carol Jerrems was an Australian photographer who worked throughout the 1970s and is famous for her iconic photograph *Vale Street*. She dabbled in film-making in the latter 1970s. (Ennis) The significance and uniqueness of the collection were re-emphasised when it was researched in 2004 (post-treatment) for possible use in the production of the film *Girl in the mirror*, 2005.

In 2000 a stocktake and survey of the collection by ScreenSound Australia (SSA) technical staff initiated the preservation of the NGA's AV art collection. They identified various formats that were in the collection, provided advice and made recommendations. Technicians confirmed 'vinegar syndrome' amongst some of the Jerrems reeled film material and proposed that these should be prioritised for cleaning and copying. Conservation received project funding and this work was completed by SSA in 2001. A number of audio reeled tapes were also migrated to digital audio tape (DAT) in 2001.

Improvements to the storage of the AV collection have been gradual. Advice from and work undertaken by SSA established the need for derivatives to be generated as archival master copies and exhibition/access derivatives. The period 2000–01 saw the commencement of a project with SSA that included cleaning/copying of priority works identified by the curatorial department. At that time, the advice received by SSA video and film technicians was that film and video tapes should be

migrated onto Betacam SP tape (analogue broadcast format used for preservation masters), with access copies made using VHS. Several years later SSA began using DigiBetacam tapes (digital broadcast format with minimal compression) as the archival derivative, with access copies made onto DVD.

In 2006, we were advised by SSA that our DAT tapes should be transferred and archived by converting files (48 kHz 16 bit BWF with linked XML metadata file on CD-ROM). Canberra-based Arts Sound FM92.7 was contracted to undertake this work, supplying a reference copy on compact disc and archival copy onto a NGA-supplied hard-drive for upload onto the NGA server at a later date.

This project was the first time the NGA had embarked on a significant AV preservation project and it established a good working relationship with SSA. It was complex and time consuming due to the difficult physical nature of the material – that is, some material included numerous small cuts of film footage that were scrutinised and ordered by SSA technicians and sound reels had to be synched with film footage. The Jerrems collection will provide many opportunities for continued use and therefore will require ongoing consideration.

The Kenneth Tyler film and sound collection

The Kenneth Tyler film and sound collection (TFSC) was acquired by the NGA in late 2001. Kenneth Tyler is a printer-publisher with an entrepreneurial outlook and has worked with many of the great American artists such as Hockney, Lichtenstein, Rauschenberg, Stella and Rosenquist. The TFSC is considered by the NGA's international prints and drawings curators to be a critical part of the entire Tyler gift, which includes many prints in varying states, files on artists with photographs and slide film and large print matrices. The TFSC consists of approximately 1800 items. Film and sound reels form the largest part of the collection, with video tapes in varying formats the next largest component. The acquisition was a catalyst for accessing cool and cold storage. The TFSC provides an educational resource that depicts unique footage of collaborations with artists, showing many artists responding to, for example, the print process, the colours, and working with paper pulp. The NGA curators consider this to be invaluable material, which will be harvested for various outputs – that is, footage can be collated, edited, and used to complement exhibitions such as the 2012 travelling exhibition *Roy Lichtenstein: POP Remix* or can be published on the NGA website.³

Prior to the arrival of the TFSC, SSA film and video technicians helped again to categorise formats in the collection. Conservation and Registration staff conducted site visits of several local cold storage facilities including the National Film and Sound Archive, the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) and the NLA. Cool and cold storage was negotiated at the NLA; the NLA stated that storage could not be

permanent but five-year and ten-year periods were acceptable. Before the material was deposited at the NLA in 2005, the Tyler team consisting of three dedicated staff from Registration, Conservation and Curatorial carried out A-D Strip testing⁴ and re-housed reeled film in new polypropylene cans. This was the first time the NGA would place AV material into cool and cold storage.

In 2005, the NGA entered into a contract with the NLA to secure storage space in both the cool LG1 tape store (17°C +/- 1°C temperature and 30% +/- 5% RH) and cold store LG2 (8°C +/- 1°C temperature and 35% +/- 5% RH) with Acclimatisation Room conditions at 16°C +/- 1°C and 50% +/- 5% RH for reeled film material. The contract stipulates that the NLA agrees not to store any deleterious material and requires regular annual testing of reeled film. A-D Strip testing is undertaken by NGA Paper Conservation, and labelling and documentation of locations remain the responsibility of the NGA.

The NLA's LG1 tape store currently stores all of the Tyler video tapes. As the LG1 tape Store has reached capacity, the NGA has not been able to store all of the tape material including master derivatives. These remain in the AV storage cabinets.

Recently the TFSC has been the subject of a pilot project, which commenced in mid-2011 for the digitisation and collation of video material for use in the Lichtenstein exhibition. The Canberra-based company DAMsmart specialises in digital archiving and duplication services and also offers data storage/hosting (DAMsmart website). DAMsmart was contracted to digitise selected material from the TFSC, creating digital files provided to the NGA on backup tapes. A lossless digital preservation copy was created using JPEG 2000 (a standard for preservation), while a compressed file was created in the H264 format for access via DVD or Windows Media. The NGA IT department copied the content of the backup tapes onto the NGA's server, which is backed up daily and archived once a month.

Increased access to the TFSC for the purpose of exhibition has been the primary driver for this project. The NGA IT department saw this as a good opportunity to undertake a pilot project and provided financial support through a budget allocation specifically for digital asset management.

James Turrell's skyspace

In 2010, the NGA announced a major commissioned sculptural installation work by the renowned American artist James Turrell. The work is entitled *Within without* and is known as a skyspace, which uses space, shape and light to affect the perception of the sky. The skyspace comprises a pyramid structure, internal pool, a stupa that has a domed internal space with a skyward opening framed by an oculus. At dawn and dusk, a thirty-minute lightshow is run from a lighting program. The lightshow forms an integral part of the work; as stated by Turrell: 'My interest is

working with light and space'.⁵ On his visit to Australia in 2010, Turrell worked closely with a specialist lighting programmer to establish the parameters and refine his light installation.

Figure 1 – Inside the stupa of the skyspace where cycling dawn and dusk lightshows operate. Fiona Kemp

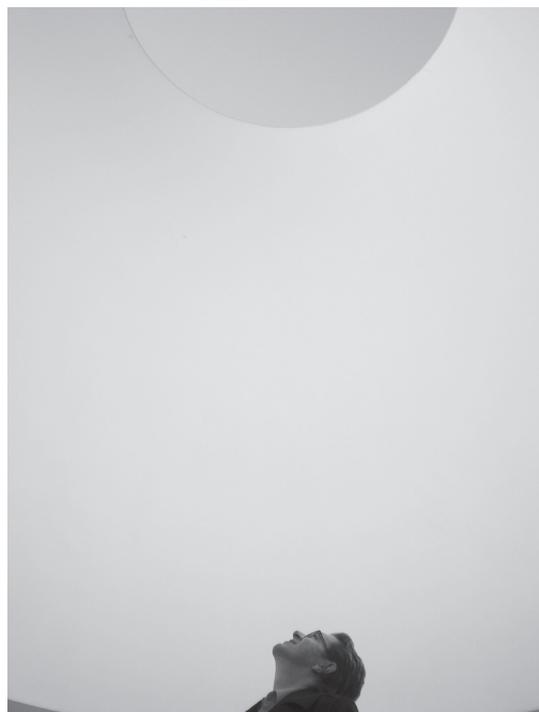


Figure 2 – Inside the skyspace, looking up to the skyward opening in the dome. Fiona Kemp

DCG Design from Melbourne undertook the construction of the skyspace in 2009. The NGA is still resolving the overall management of this complex work. The skyspace requires ongoing maintenance of the physical components, such as painting of the internal dome, and replanting on the external pyramid structure. Maintenance also includes consideration

of the lighting program as this is vital to the visual integrity of the work. Preservation requirements for the lighting program have sparked some interesting discussions with contractors and a number of NGA colleagues across various departments. A paper by Ulrike Baumgart entitled *Light as an artist's medium* is extremely relevant to the issue. Baumgart (2007 p.8) states: 'Such descriptions can be compiled with respect to the variables and site-specific qualities pertaining to each space, and later integrated into a corresponding conservation and preservation strategy'.

The specialist lighting company Xenian supplied the lighting system for the skyspace. The LED lights are operated by a sophisticated lighting computer program. Over the last year, the NGA's senior electrician has uploaded program patches provided by the programmer. This is done in-situ using a dedicated laptop linked to the system control board. The updates correct any noticeable glitches such as timing adjustments for the dawn and dusk viewings and flickering that may occur with the intricate network of LED lighting. The system control board is housed within a box in the side of the external pyramid structure – surrounded by earth, watering systems and plants – with tricky access. Currently, for component replacement and/or system failures, the electrician is required to call the Sydney-based company. The arrangements with the company contracted to develop the lighting are unlikely to be sustainable in the long term. Additionally, it is unknown how long the technology currently used in the skyspace will last or how long the various LED components will be available.



Figure 3 – The NGA electrician and contract gardener undertaking necessary work at the skyspace. Fiona Kemp

Unlike other works of art in the collection, maintenance of the skyspace is overseen by the NGA building services department as any other 'built construction' in the gallery precinct. Maintenance

work is guided by an operating and maintenance manual. The manual details the care of the various components, including the lighting. Currently, Conservation undertakes minor cleaning in the domed area. Conservation and Registration continue to negotiate to have backup copies of the lighting program stored on the main IT server system once the lighting program is considered 'final'. They are also working to have a hardcopy of the written code for the lighting program included on the NGA's Record Management Unit's registry file for skyspace in case the existing technology becomes obsolete. As the original equipment ages and technology advances, the system will need updating or replacement. The Commission Agreement for the skyspace outlines that if any part of the work is damaged or non-operational during the artist's lifetime a separate agreement would determine repairs or restoration (NGA contract, 2008).

Future directions

The Head of Conservation has sought funding for the development and implementation of an AV preservation policy in 2012–13, and for preservation work in the subsequent four years. It is unlikely that funds will be made available to employ a new media conservator in the near future. Consequently, this work will continue to be overseen by NGA Paper Conservation.

Over the next decade, the NGA hopes to establish a cool storage facility within the premises, eliminating the need to pay providers for storage. This would be a major undertaking and will require substantial funding. The feasibility of developing cool and cold storage at the NGA was prompted by the State Library of New South Wales project to create a walk-in cold storage area, outlined in Kahabka's paper (2008). At the NGA in 2009–10 a conservation budget submission was prepared for consideration by the Head of Conservation, the Registrar and Senior Executive. This capital project has been acknowledged as a priority and is included in future development plans for the NGA – Stage 2 extensions. It is not yet known when these extensions will occur.

In late 2010, the old AV Brownbuilt cabinets were relocated to the Collection Study Room within the NGA's storage areas. This allowed the remaining material in the cabinets to be reorganised, old metal cans to be replaced with polypropylene cans, and film to be A-D Strip tested and transferred to the NLA LG2 cold store. Other items were simply placed in the correct orientation. Data entries for catalogue details were checked by Registration, ensuring consistency with the documentation. All of these procedures will need to be routinely carried out in the future for the AV collection both onsite and at the NLA. Customised AV cabinets have been sourced and will be ordered in the near future to replace the existing cupboards.

The next phase of preservation focuses on a digital asset management system (DAMS), where files are stored and maintained via a secure server system. This will minimise routine

migration of AV material. The NGA's IT department is currently putting out a tender for a DAMS, which is expected to include the management of digitised items in the AV collection.

Conclusion

The NGA's annual reports show new media acquisitions on average to be less than ten works per year over the last decade. The AV collection represents less than 0.2% of the NGA's entire collection.⁶ These statistics partly explain new media's current low profile in the organisation and highlight why it is essentially more at risk.

On the other hand, the frequency of loan requests has increased and averages one or two per annum.

A lack of specialist staff means that conservators are left to do what they can within limited budgets, with a reliance on exchanging knowledge, seeking advice from other conservation professionals and consulting online resources. The NGA's AV preservation work has moved slowly to date, being driven by specific projects that are generally initiated by requests for access. The NGA is currently looking to establish a more planned approach to deal with the needs of the AV collection as a whole.

The announcement of the formation of a Special Interest Group for Digital and Audiovisual Heritage at the 2011 AICCM National Conference is evidence that AV media is a growing area of conservation work. For this reason the profession needs to consider specialisation in the field of new media, with dedicated training. More important is recognition from cultural institution managers that this area can only continue to expand and requires adequate resourcing.

Endnotes

1. Appendix 1 from 'Where are the cool stores' in the NLA's *Storage of cellulose acetate collections: A preliminary survey of issues and options*, dated February 2002, outlines the cool storage available in Australian cultural institutions. It is interesting that the Tasmanian Museum and Gallery is the only gallery listed.
2. Specialist websites outlining preservation needs of AV collections:
 - National Film and Sound Archive of Australia <<http://nfsa.gov.au/preservation/>>
 - Tate Research projects 'Media matters' <<http://www.tate.org.uk/about/projects/matters-media-art>>
 - the Guggenheim project – the variable media approach, which resulted in the publication *Permanence through change: The variable media approach* <http://variablemedia.net/e/preserving/html/var_pub_index.html>
 - Electronic Arts Intermix (EAI) online resource guide for exhibiting, collecting & preserving media art; <<http://www.eai.org/index.htm>>
 - DOCAM – The Daniel Langlois Foundation initiated the development of Documentation and Conservation of the Media Arts Heritage (DOCAM), specialising in issues related to the preservation of digital and electronic art <<http://www.docam.ca/>>
 - Independent Media Arts Preservation (IMAP) ensures preservation of independent electronic media for cultural and educational use <<http://www.imappreserve.org/>>
 - Conservation Online, CoOL is a resource for conservators and covers film/video/audio/electronic media, <<http://cool.conservation-us.org/>>
3. Ken Tyler refers to the NGA's Tyler website <<http://nga.gov.au/internationalprints/tyler/Default.cfm>> as the 'virtual-institute for fine art printmaking ...'
4. A-D Strips are dye-coated paper strips that provide a simple method to measure acid levels in degraded acetate photographic film known as 'vinegar syndrome'. (IPI website) Cut strips are placed in contact with the film inside the canister for between 24 and 72 hours dependent upon the climatic conditions. The strip is checked against an indicator pencil – 0 indicates no acidic content, while 3 indicates the highest presence of acetic acid. (St Vincent Welch, Davies & Newnham, 2000, p. 129).
5. NGA media release for James Turrell's skyspace, 16 August 2010

6. While the AV archive collections are considered valuable this percentage only represents the KE EMu database breakdown of catalogued multimedia art collection within the overall art collection.

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UNESCO website, *Recommendation for the safeguarding and preservation of moving images*, accessed 2 May 2012 <http://portal.unesco.org/en/ev.php-URL_ID=13139&URL_DO=DO_TOPIC&URL_SECTION=201.html>

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