



## **Australia's Aviation Heritage**

**Final Report prepared for Airservices Australia**

**2015**



**UNIVERSITY OF  
CANBERRA**

**Please cite as: Ireland, T., Ashton, P., Hawcroft, R., Rahim, H. A., Wain, A., White, J., Whitelaw, M., 2015, Connecting the Nation, Australia's Aviation Heritage, Final Report prepared for Airservices Australia.**

## Contents

Contents .....	ii
List of Abbreviations .....	v
Executive Summary .....	vi
1.0 Introduction .....	1
1.1 Project Structure and Methodology .....	2
1.1.1 Thematic History .....	3
1.1.2 National Survey of Aviation Heritage .....	3
1.2 Milestones Achieved .....	3
1.2.1 Project Webpage .....	3
1.2.2 Meetings & Consultations .....	4
1.2.3 Project Introductory Letters .....	6
1.3 Online Survey .....	6
1.3.1 Methodology .....	6
1.3.2 Dissemination of online survey and results to date .....	6
2.0 Stage One: The Scope and Nature of Aviation Heritage .....	9
2.1 Thematic Analysis of the Sources of Heritage .....	11
2.1.1 Communication .....	11
2.1.2 Community Building .....	18
2.1.3 Defence .....	25
2.1.4 Empire .....	35
2.1.5 Environment .....	43
2.1.6 Identity .....	48
2.1.7 Innovation .....	58
2.1.8 Isolation .....	63
2.1.9 Modernity .....	70
2.1.10 Safety .....	76
2.1.11 Security .....	83
2.1.12 Tourism and leisure .....	86
2.1.13 Training .....	93

3.0 Stage Two .....	99
Key Findings .....	99
3.1 Structure and Methodology.....	100
4.0 Discussion of Survey Findings .....	102
4.1 Question 1 .....	102
4.2 Question 2 and 3 .....	106
4.3 Question 4.....	107
4.4 Question 5 .....	109
Objects .....	110
Organizations .....	115
Places and Sites.....	117
Time Periods.....	120
People and Communities .....	123
Historical Themes.....	125
4.5 Question 6 .....	128
4.6 Question 7 .....	129
4.7 Question 8.....	136
4.8 Question 9 .....	140
4.9 Question 10.....	141
4.10 Question 11.....	145
4.11 Question 12.....	146
5.0 Further Analysis of Aviation Heritage Sources .....	147
5.1 Content Analysis.....	147
5.2 Analysis of the Airways Museum and Civil Aviation Historical Society Website Content .....	150
5.3 Aviation Heritage Places.....	152
5.4 Aviation Websites.....	153
5.5 Analysis of the QANTAS, TAA and ANSETT Website Content .....	154
6.0 Digital Portal Development- Scoping .....	155
6.1 Background .....	155

6.2 Content Types .....	155
6.3 Project Benchmarking.....	156
Appendix 1.1 Museums, Collections, Archives .....	172
Appendix 1.2 Places on the Australian Heritage Database .....	181
Appendix 1.3 State and Local Government Heritage Registers .....	187
References.....	196

## List of Abbreviations

AAM	Australian Aviation Museum
AHM	Aviation Heritage Museum (Royal Australian Air Force Association)
ANAM	Australian National Aviation Museum
AWA	Amalgamated Wireless of Australasia Pty. Ltd.
AWM	Australian War Memorial
BATM	Butler Air Transport Museum
CAAM	Central Australian Aviation Museum
NAA	National Archives of Australia
NFSA	National Film and Sound Archive
NLA	National Library of Australia
NMA	National Museum of Australia
RFDS	Royal Flying Doctor Service
SAAM	South Australian Aviation Museum
TAA	Trans Australian Airlines

## Executive Summary

This Report combines two stages of the project; the first stage is a scoping study, involving high-level research into the sources for aviation heritage (including collections, archives, people and places). The aim of the first stage is to understand the nature and range of collections, archives, places and stories that make up aviation heritage in Australia. The second stage looked further into these sources of heritage which have been analysed to determine key issues including relative values, accessibility, preservation, risks, stakeholders, viability and sustainability. The information and data gathered here thus formed the basis for the development of an innovative digital heritage portal that aims to raise the profile of aviation heritage and allow diverse audiences to connect with it.

The framework for this investigation is provided by an original thematic history, which has been developed specifically for this project and analyses the broad sweep of aviation history in Australia, drawing out key processes, issues and drivers that have shaped this history and examines how aviation has both reflected and shaped the broader society of which it is a part.

The main sources of aviation heritage are summarized in tabular form in Appendix 1, while the body of the report provides an analysis of aviation heritage, reflecting on how the known sources of heritage enrich understanding of key themes, as well as noting issues, constraints and opportunities, effecting the future management of aviation heritage. The second part of the report presents key findings from the second stage of research for the Connecting the Nation project. This analysis provided the foundation for the focus, design and content of the digital portal. Priority areas have been identified for further research, the functionality of the portal design and the nature of its content.

The *Connecting the Nation* project provides a national perspective that will be invaluable for any level of future policy developments in the area of aviation heritage. A digital portal provides immense potential to connect with the sources

of Australia's aviation heritage and is a step towards ensuring its preservation and enhanced appreciation.

## **1.0 Introduction**

Australia has a rich variety of aviation and aviation related heritage, however, the perception is that support and funding for aviation heritage has been limited from both government and corporate sponsorship. In February 2014, as part of its vision to connect Australian aviation, Airservices Australia commissioned the University of Canberra to undertake research into the scope and nature of aviation heritage and provide an innovative means of improving the community's access to these diverse cultural resources. This project team is headed by Dr Tracy Ireland and includes Associate Professor Mitchell Whitelaw (Digital Heritage Design), Dr Alison Wain (Heritage Conservation), Mr John White (Independent Researcher, Aviation Heritage), Professor Paul Ashton (Historian) University of Technology Sydney, Hakim Abdul Rahim and Rebecca Hawcroft (Research Assistants). All project team members contributed to the development of this report. This research has been conducted in compliance with a human research ethics application, approved by the Human Research Ethics Committee at the University of Canberra on the 7th April 2014.

The aim of the first stage is to understand the scope and range of collections, archives, places and stories that make up aviation heritage in Australia. In the next stage of this project, these sources of heritage will be further analysed to determine key issues including relative values, accessibility, preservation, risks, stakeholders, viability and sustainability. The information and data gathered will form the basis for the development of an innovative digital heritage portal that aims to raise the profile of aviation heritage and allow diverse audiences to connect with it, thus seeking to ensure the ongoing preservation of the unique Australian aviation story. The scope of the study includes tangible heritage such as technology, objects, artworks and archives, as well as intangible heritage, such as people and personalities, oral histories and audio-visual material.



## **1.1 Project Structure and Methodology**

The *Connecting the Nation* project will be delivered in four stages and is based on a combination of research methods including library, archival and online research, site visits to collections and places, interviews, surveys and community consultation. Both qualitative and quantitative methods are employed to analyse the collated data on Australia's aviation heritage.

Stage One is essentially a scoping study, involving high-level research into aviation heritage (collections, archives, people and places). The framework for this is provided by an original thematic history, which has been developed specifically for this project. The thematic history analyses the broad sweep of aviation history in Australia, drawing out key processes, issues and drivers that have shaped this history and examines how aviation has both reflected and shaped the broader society of which it is a part. The results of this work are presented in this Stage One report.

Stage Two will use the data collected in Stage One to further analyse the cultural significance and values of Australia's aviation heritage and set priorities and targets for this project, the digital portal development and for further research, conservation and interpretation.

Stage Three will involve the creative development of the *Connecting the Nation* Digital Portal based on the approaches, content and concepts previously assembled in Stage One & Two.

Stage Four will see the implementation of the approved Portal design and the development of a plan for the ongoing maintenance of the portal.

### **1.1.1 Thematic History**

The thematic history makes reference to the Australian Heritage Commission's Australian Historic Themes<sup>1</sup> and is based on literature review and archival research. The thematic history identifies major themes that have shaped Australia's aviation history such as defence, communication, modernity, innovation, tourism and identity. It also highlights significant moments in the development of Australia's aviation history and the people that have made significant contributions to Australian aviation. It includes a chronology of aviation history and safety, as well as diagrams and photographs that help to illustrate the themes. The thematic history will form a key framework and context for the assessment of the cultural significance and values of the identified sources of heritage to be conducted in Stage Two of the project.

### **1.1.2 National Survey of Aviation Heritage**

The focus of this research is to determine the nature and location of the sources of aviation heritage, including collections, archives and heritage places that exist in Australia. This will allow quantitative and qualitative analysis to be undertaken to determine relative heritage values, risks and gaps in the known sources of heritage. Research and content management tools such as Zotero and Omeka have been used to assist data management and analysis. Several different approaches have been undertaken in this research, in addition to desktop research, we have communicated with custodians of collections, and visited relevant collections and places to determine the scope, nature and challenges facing aviation heritage. The analysis of the scope and nature of aviation heritage reflects on the thematic history and includes commentary on preservation needs, accessibility and other issues.

## **1.2 Milestones Achieved**

### **1.2.1 Project Webpage**

A project webpage has been created by the research development officer for the Faculty of Arts and Design. This provides a web presence for the project and gives relevant information for those who wish to participate in or know more about it. It also has a link to the online survey of heritage stakeholders and a contact email. The webpage is hosted by the Centre for Creative and Cultural Research (CCCR) at the University of Canberra and is located at the following url: <https://collections.heritageoftheair.org.au/>

### **1.2.2 Meetings & Consultations**

Several meetings have been undertaken as part of the consultative process of the project:

#### Airways Museum & the Civil Aviation Historical Society (14<sup>th</sup> April 2014)

A meeting was held at the Airways Museum in Essendon, Victoria between The Civil Aviation Historical Society, which runs the museum, Dr Tracy Ireland and Ms Katrin Hewitt from Airservices Australia. The aim of the meeting was to introduce the project to members of the Airways Museum, which holds important material relating to civil aviation, and to discuss their involvement in or support for this project. The visit also enabled the project director to view the museum's collection and to gain an initial understanding of its heritage values.

#### National Museum of Australia (10th May 2014)

Dr Tracy Ireland met with the Curator of Transport, Ms Jennifer Wilson to discuss their collection and potential contribution to this project. The meeting resulted in a positive response and willingness to explore ways to collaborate as this project develops.

#### Steering Committee Meeting (10<sup>th</sup> June 2014)

The first Steering Committee meeting was held on the 10<sup>th</sup> of June 2014 at the offices of Airservices Australia in Canberra. The aim of the meeting was to brief the

committee on the nature of the project, present the first draft of the thematic history for input and comment, explain the proposed methodology and describe progress to date. A draft online survey and an introductory letter were also presented to the committee for review and approval. The committee discussed the thematic history and also various groups and individual that would be helpful to contact as the project progresses. The need for oral history recording was also discussed in the meeting as an important priority for the conservation of aviation heritage before it is lost.

Australian Aviation Hall of Fame (30<sup>th</sup> June 2014)

A meeting with members of the Australian Aviation Hall of Fame was suggested by the Steering Committee and a meeting was held with Mr Geoff Breust on the 30<sup>th</sup> of June 2014 in Wagga Wagga. The aim of the meeting was to introduce the project and learn more about the role of the Hall of Fame in honouring individuals who have made contributions to Australian aviation. The result of the meeting was a positive response from the Hall of Fame Board which has indicated its willingness to collaborate on the project.

Australian War Memorial (20 August 2014)

The project team met with Mr Tim Sullivan, Assistant Director, Branch Head National Collection, and Ms Rebecca Britt, Head of Military Heraldry and Technology, from the Australian War Memorial to discuss their participation and contribution to this project. The meeting resulted in a positive response from the AWM staff and their willingness to explore ways to collaborate as this project develops.

Waypoint (4 September 2014)

The project team developed a display and information desk for Waypoint 2014, the premier aviation industry consultation forum, to raise the profile of the project to industry members, encourage participation and gather information about sources

of aviation heritage that industry members might be aware of. The project team will also have a presence at the Avalon Air Show (24 Feb to 1 March 2015) with the similar aims focused on the wider aviation community.

### **1.2.3 Project Introductory Letters**

An introductory letter has been disseminated to all museums, collections, archives and institutions that have been identified as having material relating to Australian aviation heritage. The letter has been personally addressed to individual museums, collections and archive and includes an introduction to the project, a description of its aims and objectives, and an invitation to participate in the online survey. The letter has also been disseminated to societies and groups that are associated with aviation such as historical societies and flying clubs. This has resulted in numerous responses to the on line survey and requests for further information to the project team.

## **1.3 Online Survey**

### **1.3.1 Methodology**

To aid in the identification of heritage resources and understand how people value them, an online survey has been developed using Survey Monkey, a web based research tool. This online survey targets all aviation heritage stakeholders and enthusiasts. The survey utilises closed and open ended questions to gather information on what types of aviation heritage are valued, the challenges facing their conservation, significant themes, objects and people, and determine what is most important to stakeholders. Another aim of the online survey is to identify people whose stories and experiences are important to aviation in Australia and to identify hidden collections that are not made public. The results from the on line survey will be analysed and reported in detail in Stage Two.

### **1.3.2 Dissemination of online survey and results to date**

The online survey has been disseminated to museums, collections, archives and other related organisations and interest groups. Initial response to the online survey

has been positive with several respondents contacting the project team with the offer of further assistance. Results thus far show that there is a large range of heritage material included in the collections of the respondents. It is interesting to note that when asked about what aviation heritage is at risk, the response has been mostly restricted to the types of material that the responding organisation museums, collection or archive mainly cares for. The survey remains open and is the subject of a separate report.

**Q6 Please tick all the types of aviation heritage that you or your organization own or care for:**

Answered: 13 Skipped: 1

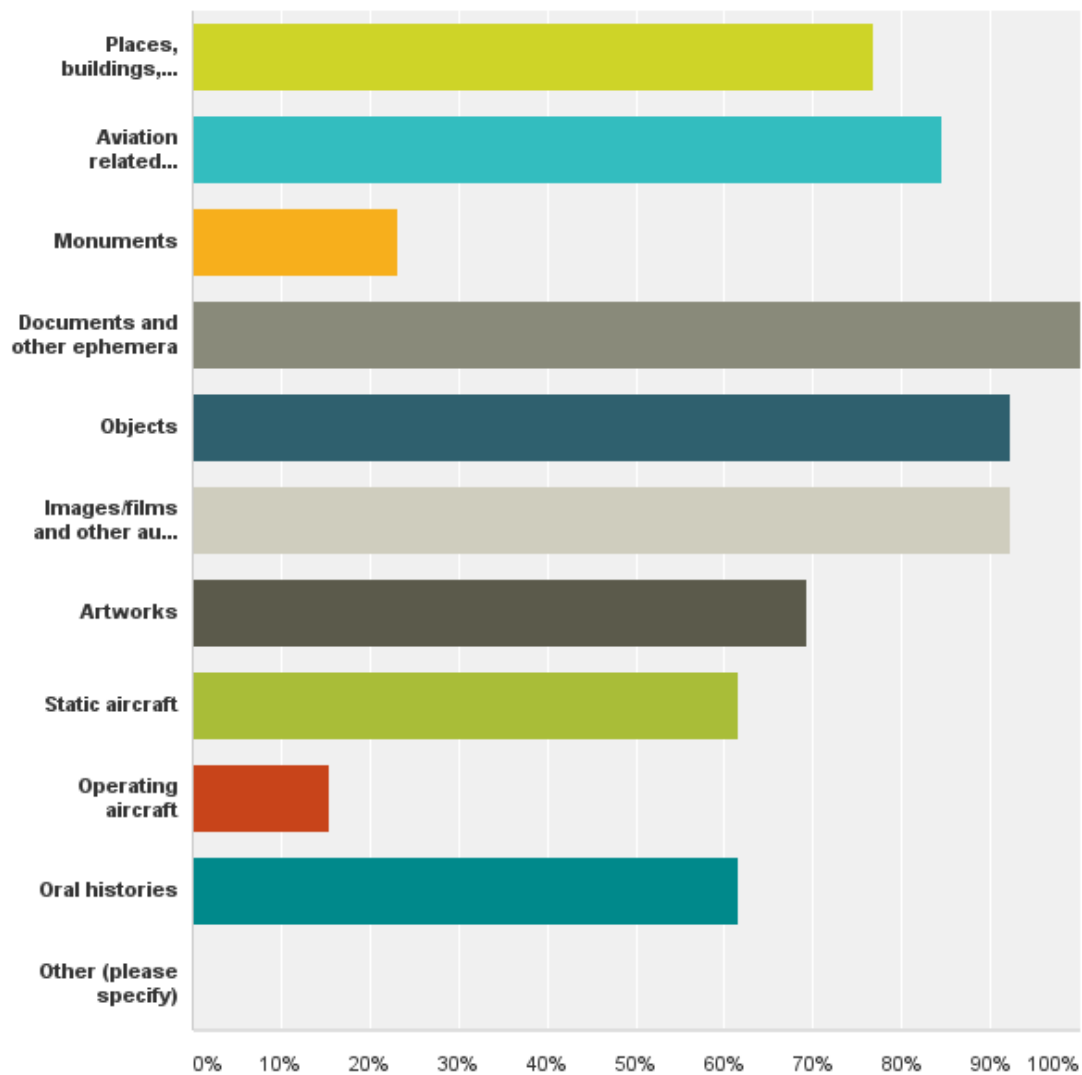


Figure 1: Early responses to the survey showing the types of aviation heritage.

## **2.0 Stage One: The Scope and Nature of Aviation Heritage**

This section of the report considers the scope and nature of the existing or known sources of aviation heritage, working within the framework provided by the thematic history (Appendix 2). The aim is to understand the potential, national array of aviation heritage that might eventually be accessed, or 'connected to' via a digital portal.

Research has revealed a vast range of material including surviving installations, infrastructure, working sites, aircraft, technical equipment, as well as vast amounts of archival and pictorial material. In the broader community, many private individuals either hold notable collections or have personal stories that provide unique insights into the Australian experience of aviation. Understanding and using this 'national collection' is currently difficult because its elements are dispersed and difficult to find. There is no central national body addressing the overall story of Australian aviation, its heritage and its continuing development.

The need for such a national effort has long been recognized. One of the main policy landmarks for heritage in Australia was the 1975 Pigott Report<sup>2</sup> on Australian museums and national collections. Among the recommendations made by this influential early study that were ultimately accepted and acted upon, was the creation of both a national maritime museum and a national historical museum. These organisations have since been developed and have had a significant impact on both scholarship and the way Australians understand and commemorate aspects of their past. The Australian War Memorial was also re-developed, and substantial resources were put into the preservation of its military-related artefact and archive holdings. However, a national aviation museum did not progress beyond the initial planning stage. There may well be opportunities in the future to create such an organization and the *Connecting the Nation* project will provide data and a much needed national perspective, that will be invaluable for any level of future policy development in this area. While there are currently substantial and significant



collections in Australia that relate to civilian aviation, they usually have a quite particular focus - such as state-level activities, or the work of a government organization or private company. What is lacking is a national perspective, and public access to this distributed 'national collection'. A digital portal provides immense potential to connect with the sources of Australia's aviation heritage and is a step towards ensuring its preservation and ongoing appreciation.

The following discusses the results of the survey of the sources of aviation heritage in Australia. Results have been collated using the on line research tool Zotero, so that integration with the next stage of digital design and development is facilitated. The Zotero tool also allows us to collect data derived from a drill down into collections that have some or all of their collections on line. The main sources of heritage are summarized in tabular form in Appendix 1. This section provides a thematic analysis of aviation heritage, reflecting on the themes identified in the history (Appendix 2) and how the known sources of heritage enrich understanding of the themes, as well as noting issues, constraints and opportunities, effecting the future management of aviation heritage. Each thematic section includes a discussion and then provides tables of the key sources of heritage relevant to the theme, grouped into 3 categories:

Museums, Collections, Archives;  
Places;  
People and Organisations.

In Stage Two of the project the results of the on line survey will also be analysed to add a further dimension to the understanding of the sources of aviation heritage, derived from individuals and organizations.

## **2.1 Thematic Analysis of the Sources of Heritage**

### **2.1.1 Communication**

It took years of development before radio became a standard feature of aircraft operations in Australia. During the first few decades of the 20<sup>th</sup> century, flags, flares and ground markers were used to permit some communication between the air and ground. By the late 1930s, airliners were required by law to carry effective radio equipment<sup>3</sup>. By World War 2, the basis of a national network of ground stations had been established, and major airports increasingly relied on radio to manage air traffic. Post-war, ultra-high frequency and very high frequency transmission was introduced as the technology improved. This story is well represented in various locations, museums and collections that are distributed throughout the country.

Several of Australia's early air traffic control towers, at Archerfield, Essendon and Parafield, survive today and are nominated in the Australian Heritage Database as places with potential Commonwealth Heritage values. Llandilo International Transmitting Station, in Shanes Park in NSW, is listed in the Commonwealth Heritage List for its role in the operation of international air routes in Australia<sup>4</sup>. These and other communications infrastructure, such as the Nhill Aeradio Station in Victoria and the Hobart/Cambridge Aeradio Station in Tasmania, are a small part of the remaining historical infrastructure that has shaped Australian aviation and illustrates this central theme.



Figure 2: Parafield Air Traffic Control (Parafield Airport)

Collections, museums and archives also hold significant collections relating to aviation communication. The Powerhouse Museum holds important examples of communication systems and radios that were used in aircraft and ground stations. One such object is the pedal-powered generator, which was invented by Alfred Traeger. The generator provided reliable power for wireless radios in areas far from domestic electricity supplies or sources of batteries. Reliable radio communication changed the lives of people living in the rural areas, and was instrumental in the development of the Royal Flying Doctor Service<sup>5</sup>. The Airways Museum holds a significant collection of objects and archival material relating to communication systems used in aviation, such as the Marconi S.W.B.8 HF transmitter, flight service consoles and various HF radio transmitters. Other museums that contain communication materials are the South Australian Aviation Museum (SAAM) and the Australian Aviation Museum (AAM) in Bankstown, NSW.



Figure 3: Alfred Traeger's Pedal Powered Radio (Powerhouse Museum)

Other important sites and installations relating to this theme include buildings and technical installations such as transmission towers. The latter present notable preservation challenges. They are frequently fabricated steel structures, with a limited maintainable lifetime in outdoor locations. Public access to these sites, which are often located in secure areas such as airfields, is also a significant issue. These kinds of sites may particularly benefit from digital recording and display techniques such as 3D digital scans accessed via a portal.

The successive waves of technological development represented by these installations pose particular opportunities and issues for interpretation. Clearly online presentation would allow some of the complex technical stories involved to be more easily interpreted.

Some key Australian aviation personalities, including pioneers, are well documented. But many other significant individuals and organisations who made important contributions to Australia aviation are either little known or are unrepresented in historical collections. This is particularly true of people involved in "back of house" areas of great technical significance such as communications,

radar, weather reporting and so forth. Oral history may be one means of redressing this gap. The project will identify a core group of living persons whose stories need to be recorded to fill important gaps in this area of the historical record.

### **Museums, Collections & Archives**

---

CSIRO Black Mountain, ACT	Involved in the development of new navigation and communication systems with the Department of Civil Aviation in the 1950s.
National Archives Australia , ACT	Documents and papers relating to communication in aviation including the Department of Civil Aviation.
National Library of Australia, ACT	Photographs of Alfred Traeger, control towers and communication systems in action at air traffic control towers and Flight Information Centres. Documents, manuscripts, handbooks and archival material relating to communication in aviation.
National Museum of Australia , ACT	The Frank Proust and John Boddington Collections, remains of the Southern Cloud, air disaster which resulted in the introduction of radio in all aircraft in Australia.
Australian Aviation Museum, Bankstown, NSW	Communication related items include a Lancaster radio set and a Boeing cock pit section.
Powerhouse Museum, NSW	Alfred Traeger's pedal powered radio. Several examples of communication systems such as radio transmitters.

State Library NSW	Documents, handbooks and other ephemera such as a collection of maps, communication and navigational aids from the Department of Aviation. Flight radio operator's manual.
Northern Territory Library , NT	Photographs of Alfred Traeger.
South Australian Aviation Museum, SA	An example of an air traffic control console.
Airways Museum, VIC	Important collection of communication systems and navigational aids such as the Marconi S.W.B.8 HF transmitter, flight service consoles and various HF radio transmitters.
Museums Victoria, VIC	Items in the collection include transmitters, compasses and trade manuals.
Nhill Aviation Heritage Centre, VIC	Part of the Nhill Aviation Heritage Centre is the Nhill Aeradio Station which is one of the remaining Aeradio stations that were crucial to civil aviation in the early 20 <sup>th</sup> century.

## Places

Microwave Landing System Antennas, Tullamarine Fwy, Melbourne Airport, VIC	Collaborative effort between CSIRO, AWA and the Department of Civil Aviation to develop a new landing system. Located at the Melbourne Airport, the site is nominated for the Commonwealth Heritage List.
--	---

Bankstown Airport Air Traffic Control Tower, Tower Rd, Bankstown, NSW	One of early examples of air traffic control towers in Australia.
Llandilo International Transmitting Station Stoney Creek Rd , Shanes Park, NSW	The Llandilo International Transmitting Station is played an important part in Australia's aviation and international air routes coming into Australia.
Sydney Airport Air Traffic Control Tower General Holmes Dr, Sydney Airport, NSW	Nominated on the Commonwealth Heritage List as a unique example of innovative design and aesthetics.
Archerfield Airport, Beatty Rd, Archerfield, QLD	Site of one of Australia's first air control towers.
Parafield Airport Air Traffic Control Tower Kittyhawk Ln, Parafield, SA	The site of the pioneering air traffic control towers built in Australia.
Hobart Airport Air Traffic Control Tower, Tower Rd , Cambridge, TAS	Surviving example of post WW2 air control tower still remaining.
Launceston Airport Air Traffic Control Tower Evandale Rd, Western Junction, TAS	Surviving example of post WW2 air control tower still remaining.
Essendon Airport Air Traffic Control Tower, Wirraway Rd, Strathmore, VIC	Surviving example of post WW2 air control tower still remaining that service one of the

---

	busiest airport in Australia during post war period.
Strathbogie Aerial Navaid, Polly McQuinns Road, Strathbogie, Strathbogie Shire, VIC	A unique example of community initiative. It comprises of stones embedded in the ground to spell out "STRAHBOGIE" as a visual navigation aid.
DCA Air Navigation Beacon, Narembreen, WA	Historic site that was one of the main points on the east west line jet routes.
Roy Hill Directional Beacon, Marble Bar Rd Nullagine, WA	A directional beacon used after WW2 by regional airlines that service Roy Hill area.

### People & Organisations

---

Alfred Traeger	Inventor of the pedal powered radio that influenced the lives of regional Australians and is closely associated with the Royal Flying Doctors Services. Material associated with him can be found in various collections such in the Powerhouse, RFDS Visitor Centres, NAA, NLA and other institutions.
Amalgamated Wireless (Australasia) Ltd	Designed and manufactured equipment used in almost all aspects of Australian aviation operation including communications equipment. Relevant collection materials distributed throughout aviation heritage collections in Australia such as Powerhouse and Airways Museum, VIC.



### **2.1.2 Community Building**

The ability to cover great distances, and to shorten the travel time between far-flung places, has greatly impacted the lives of people living in rural and regional communities in Australia. By the start of World War 2 Australia had substantial foundations for a nation-wide aviation network. This network, and the regional airlines that provided it, has contributed to the growth and development of regional communities and to improving connections between these communities. The recognition of the importance of civil aviation in regional Australia is reflected in the numerous museums, memorials and monuments that can be found in towns and regional centres in Australia.

Regional museums, such as the Central Australian Aviation Museum (CAAM) in the Northern Territory, tell the story of aviation from a local perspective. A major focus at CAAM is Edward John Conellan, who started Conellan Airways, and the museum is housed in Conellan's original hangar<sup>6</sup>. Further material relating to Conellan Airways can be found in the National Archives of Australia (NAA). The Sir Reginald Ansett Transport Museum honours Ansett's contribution to aviation and also to the community in Hamilton, Victoria. An Avro Anson aircraft formerly operated by another regional airline, East West, is displayed in a special hangar at Tamworth, NSW. Another significant museum dealing with the regional aviation story is the Butler Air Transport Museum (BATM) in Tooraweenah, NSW. This organisation covers the contribution of Cecil Arthur Butler to the region, serving country communities in NSW and Queensland.



Figure 4: Connellan Hangar (Australian Heritage Database)

Community building is also represented in the collections of major institutions. The National Museum of Australia (NMA) holds material such as the Australia Post collection relating to airmail, including examples of the rough canvas bags used for delivery. The NMA also holds material relating to regional airlines such as Ansett and East West Airlines.

These are publicly accessible sites and collections, usually relatively well managed and maintained. The principle issue for public use here is the need for a centralised public access point for information and reference. The digital portal is intended to meet this need.



Figure 5: 50<sup>th</sup> Anniversary mail bag (National Museum of Australia)

**Museums, Collections & Archives**

National Archives Australia, ACT	Documents, photographs and archival material regarding regional airlines and communities such as documents and plans regarding regional aviation from the Department of Civil Aviation.
National Film Sound Archive, ACT	Audio visual material regarding regional aviation which includes television and film material of airlines such as MacRobertson Miller Airlines and Ansett.

National Library of Australia, ACT	Documents, books, archival material and photographs regarding numerous regional airlines such material regarding Ansett, REX Airlines and regional airports such as Wagga Wagga.
National Museum of Australia, ACT	Airmail canvas bags in the Australia Post Historical Collection. Collection of material from Ansett and Eat West Airlines.
Butler Air Transport Museum Tooraweenah NSW	Butler Air Transport was an important regional air service in NSW servicing regional centres in NSW and Queensland as an air mail carrier and a civil transport airline.
Narromine Aviation Museum, NSW	A regional centre and major air-hub since the early 20 <sup>th</sup> century.
The Qantas Heritage Collection, NSW	Chronicles the history of Qantas which includes times tables, maps and early memorabilia.
Central Australian Aviation Museum, NT	Museum is located Connellan's original hangar. EJ Connellan established the Northern Territory's first aerodrome and subsequent airline services the regional areas through delivery of airmail and supplies and also as the carrier for the Royal Flying Doctors Service.

---

Royal Flying Doctor's Service, Alice Springs Tourist Facility, NT	A major organisation that connected regional communities through the delivery of medical services. The facility at Alice Springs features material relating to its formation and history.
Royal Flying Doctor's Service, Alice Springs Tourist Facility, NT	Museum devoted to Qantas and its development. Has material relating to Qantas' early years servicing regional Queensland through airmail services and the first inaugural flight of the RFDS.
Queensland Museum Network, QLD	Has the first airmail carrier bag used in Australia and the Thomas McLeod Queensland Aviation Collection.
State Library of Queensland, QLD	Reports, documents and photographs relating to regional airlines and communities such as studies on regional aviation and networks.
Museums Victoria, VIC	Material such as photographs and advertising material from regional airlines and communities.
Sir Reginald Ansett Transport Museum, VIC	Museum devoted to Ansett and its founder which has a great impact on Hamilton and the region in its early days. Has memorabilia, records and aircraft from the early days of Ansett.

## Places

Arthur Butler Memorial Aerodrome, Aerodrome Road, Tooraweenah, NSW	Aerodrome commemorating Arthur Butler a pioneer aviation.
Butler Airlines Hangar (Former), Warren Road, Gilgandra, NSW	First hangar used by Butler Airlines, a significant airline in regional New South Wales.
QANTAS Hangar Longreach, Landsborough Hwy, Longreach, QLD	The site of Qantas's first hangar. Currently on the National Heritage List and is leased by QFOM.
Ansett's First Hangar, Ballarat Road HAMILTON, Southern Grampians Shire, VIC	Hangar where Sir Reginald Ansett started his transport company which was important to the development of Hamilton as an aviation hub.
Reg Ansett's House, 12 Learmonth Street HAMILTON, Southern Grampians Shire, VIC	Built in the 1920s, it was the home of Sir Reginald Ansett during the period where he started his transport company.

## People & Organisations

Cecil Arthur Butler	A significant figure in regional NSW as an aviation pioneer and the development of an airline that serviced the regional areas. Material regarding C.A Butler can be found in numerous museums and site such as the
---------------------	---

---

	Butler Transport Museums, aerodromes and hangar.
Edward John Conellan	An important figure in the Northern Territory as an aviation pioneer and connecting the regional communities through his airline. Material regarding Connellan can be found in the NAA, NT Library and at the Central Australian Aviation Museum which is also the site of his first hangar.
Sir Reginald Ansett	Well regarded as an aviation pioneer and in regional Victoria especially Hamilton where the Ansett transport company has contributed to the development of the town. Material regarding Ansett and his airline can be found in many major collecting institutes such as the NMA, NAA, and NLA and in small museums such as the Sir Reginald Ansett Transport Museum.
Hudson Fysh, Paul McGinness and Fergus McMaster	Founders of one of the oldest airlines in Australia, material regarding the founder are well documented in museums and collections such as the Qantas Heritage Collections in Sydney and Qantas Founders Outback Museum. Material can also be found in most major collecting institutions such as AWM, NMA, NLA, NAA and state museums, libraries and archives.

### 2.1.3 Defence

Defence-related aviation history in Australia has received extensive attention and is well covered by a variety of institutions, collections and places. Defence-related aviation is significant to this study because the skills and people involved went on to have a significant impact on civil aviation. Aviators that trained and served during World War 1 (WW1) eventually went on to establish various civil aviation companies - notably QANTAS. Other airlines, such as Trans Australia Airlines (TAA), were the result of the government bringing together ex-military aircraft and personnel to create a national carrier<sup>7</sup>.



Figure 6: Aircraft Hall (Australian War Memorial)

The existing defence-related museum network is readily accessible to the public, and is well represented online. The operation of retired military aircraft is also a substantial element of the current aviation heritage sector; many of these machines are owned and flown by private individuals and organisations. Access to these information sources through a single digital portal would be highly desirable.



### Museums, Collections & Archives

---

Australian War Memorial, ACT	A major collecting institute that has an aviation material regarding aviation's involvement in the wars. Some examples are various aircrafts such as Albatros D.Va scout aircraft, G for George and Avro 504K two-seat biplane elementary trainer. Also includes extensive records, documents, and photographs of Australian involvement in the wars.
National Film Sound Archive, ACT	Important collection of audio-visual material relating to aviation's involvement in defence such as sound recordings of the march of the Australian Air Corp and film footage of the test flight of DH 86 aeroplane VH-USW 'Lepena' for the Department of Defence in 1938.
National Library of Australia	Oral histories from personnel that were involved in RAAF during war and training such as David Rogers and Len Wilmington.
National Museum of Australia, ACT	Eric J. Treloar Collection consists of material from his involvement in World War 1 and his training with the Australian Imperial Forces.
Australian Aviation Museum, Bankstown, NSW	Several examples of military aircraft such as HS-748 Surveillance Aircraft and the Dassault Mirage.

Australian National Maritime Museum, NSW	Photographs and advertisement ephemera regarding seaplanes and naval aviation such as the "Cadets for Naval Aviation" recruitment poster.
Fighter World, NSW	A collection of military aircraft such as the Hawker Hunter and the Boeing Stearman.
Fleet Air Arm Museum, NSW	A museum that contains objects and material regarding aviation's involvement in the Royal Australian Navy.
Luskintyre Airfield and Aviation Museum, NSW	A private collection of Tiger Moths and other aircraft such as helicopters.
Pay's Air Services, NSW	Private collection of the late Col Pay's includes many restored military aircraft including Chipmunks and Mustangs.
Temora Aviation Museum , NSW	Founded by David Lowy AM it contains a collection of military aircraft such as Spitfires and Cessnas.
The Camden Museum of Aviation, NSW	A large private collection of military aircraft, engines and memorabilia such as a Gypsy Moth and a Vampire.
Tocumwal Historic Aerodrome Museum, NSW	Photographs, maps, archival material and models of Tocumwal Aerodrome's involvement in WW2.

The Australian Aviation Heritage Centre, Darwin's Aviation Museum, NT	Contains military aircraft such as Mirage, Spitfires and a Wessex helicopter.
RAAF Museums (Townsville, Wagga Wagga, Point Cook)	Collections of the Royal Australian Air Force which are spread out into several locations. Large collections of aircraft and RAAF heritage items such as those from the RAAF Medical Services and Chaplains.
Caboolture Warplane Museum, QLD	Collection of military airplanes and engines some of which are in flying condition such as Cessna Bird Dog 01G and Tiger Moths.
Museum of Australian Army Flying, QLD	Collection of military aircraft such as the Australian made Boomerang and Nomad.
Queensland Air Museum, QLD	Mainly devoted to aviation in Queensland but also contains military planes such as Armstrong Whitworth Meteor and a De Havilland Sea Vixen.
The Beaufort Restoration, QLD	An organisation that is devoted to restoring a DAP Beaufort A9-141.
South Australian Aviation Museum, SA	Has some defence related aviation material such as Westland Wessex helicopter used by RAN and Gloster Meteor used by RAAF in Korea.
Australian National Aviation Museum, VIC	A number of aircraft that were made by the Commonwealth Aircraft Corporation during

---

	World War 2. A collection of military aircraft such as Fairey Gannet and a Bristol Sycamore.
B-24 Liberator Restoration Australia, VIC	Its hangar is home to the only extant Liberator Bomber in the Southern Hemisphere.
Friends of the Anson Museum, Ballarat Airport, VIC	The hangar is home to an Arvo Anson that is currently being restored.
Greenock Aviation Museum, VIC	Collection of Lincoln Nitschke, it has a restored Fairy Battle, Airspeed Oxford Mk 1 and various aircraft gun turrets.
Lake Boga Flying Boat Museum, VIC	Location of the flying boat repair depot during World War 2. Has a seaplane, a Catalina A24-30 and other memorabilia associated with seaplanes and their involvement in World War 2.
National Vietnam Veterans Museum, VIC	The museum has several aircraft that are being restored mainly helicopters used during the Vietnam War such as the Sioux, Cobra and Huey helicopters and aircraft such as a Canberra Bomber and Grumman Tracker.
Nhill Aviation Heritage Centre, VIC	Nhill was the focus of RAAF presence during the war. And also a significant training ground for the RAAF Air School.
Old Aeroplane Company, Tyabb, VIC	

---

	Private collection restored warbirds such as a Merlin-powered Kittyhawk, T-38 Trojan and a mock-up of the Bell X-1 Glamorous Glennis
The Aviation Heritage Museum, WA	Important military aircraft collection craft such as Avro Lancaster and a Catalina seaplane.

## Places

---

Qantas Huts (former) Sydney Hwy , West Island Settlement, Cocos-Keeling Island, Australia	Building associated with a major refuelling stop during WW2 between Australia and Sri Lanka.
RAAF Base Fairbairn Group Glenora Dr , Majura, ACT	Associated with the development of the RAAF during WW2.
Moruya Airport and World War II Installations, NSW	Bunker used during WW2.
RAAF Base Richmond McNamarra Av , Richmond RAAF Base, NSW	Second airbase in Australia and associated with the development of the RAAF in the early parts of the 20 <sup>th</sup> century.
Daly Waters Aviation Complex, Daly Waters, NT	One of the Northern Territory's oldest hangars and used by the military during WW2.

---

Parap Hangar 22 MacDonald St, Parap, NT	Used during WW2 by the RAAF.
Pine Creek Township Airstrip, NT	RAAF airfield during WW2.
WW11 Anti-Aircraft Searchlight Battery Elizabeth River, NT	Used in the defence of Australia during WW2 against enemy aircraft.
WWII B-24J Liberator Aircraft Wreck, NT	Associations with 380th Bomb Group.
WWII Coomalie Airstrip, NT	RAAF airfield during WW2.
WWII Fenton Airfield, NT	RAAF airfield during WW2.
WWII Gorrie Airfield Precinct, NT	RAAF airfield during WW2.
WWII Gould Airfield, NT	RAAF airfield during WW2.
WWII Hughes Airfield, NT	RAAF airfield during WW2.
WWII K5 Anti-Aircraft Battery Site, NT	Used in the defence of Australia during WW2 against enemy aircraft.

---

WWII Long Airfield & associated camp, NT	One of 2 airfields built for the long range, heavy B-24 Liberator bombers.
WWII Manbulloo Airfield Ops Centre & Abattoir, NT	Wartime airfield control, communications centre and a fresh food processing and supply base.
WWII Pell Airstrip Camp A, 4RSU, Workshop Stuart H'Way, NT	RAAF airstrip used for aircraft salvage, repair and servicing during WW2.
WWII Quarantine Anti-Aircraft Battery Site, NT	Used in the defence of Australia during WW2 against enemy aircraft.
WWII Strauss Airstrip, Anti-Aircraft Gun Emplacement, NT	Used in the defence of Australia during WW2 against enemy aircraft.
WWII Strauss Airstrip, NT	RAAF airfield during WW2.
WWII Winnellie Camp Buildings, Sidney Williams Hut and the Bellman Aircraft Hangar at Royal Australian Show Society Grounds, NT	Used by the military during WW2 to house personnel and civilians during the war. AS part of the aerial defence in the Northern Territory.

Amberley RAAF Base Group Southern Amberley Rd, Amberley, QLD	Associated with the development of the air force in World War 2.
Second World War Hangar No 7, Terminal Dr, Eagle Farm, QLD	The base of the Allied Technical Air Intelligence Unit during World War 2 as an assembly depot and aerodrome.
DSTO Aeronautical and Maritime Research Laboratory Lorimer St Port Melbourne, VIC	Aeronautical research facility and aircraft manufacturing during WW2.
Former Ballarat RAAF Base 1 Airport Access Road, Mitchell Park, Ballarat, VIC	Built by RAAF during WW2 and used for training radio and communications personnel.
RAAF Base Point Cook, Aviation Rd, Point Cook, VIC	Listed on the National Heritage List and several other heritage lists, it is the first air base in Australia and the birthplace of military aviation in the country. The first training air school began in Point Cook.
RAAF Williams Laverton Base Wrigley Pde , Laverton, VIC	Site associated with the development and increased importance of the RAAF during World War 2.
Cunderdin Airfield, 82 Aerodrome Rd Cunderdin, WA	Used in training RAAF personnel during WW2.



---

Truscott Air Base (ANJO), Anjo Peninsula Doongan, WA	Associated with WA's contribution to WW2.
--	---

World War Two Airfield (Pinjarra North), Fairbridge Rd Fairbridge, WA	Associated with WA's contribution to WW2.
---	---

### **People & Organizations**

A large proportion of the individuals involved in defence related aviation are treated within other civilian based themes in this study, as they moved from defence related occupations into civil aviation.

### 2.1.4 Empire

Individual Australians such as Lawrence Hargrave were pioneers in the initial development of aviation in a world context. However, the overall development of aviation in Australia was heavily influenced during the first half of the 20<sup>th</sup> century by developments in the UK. The interests of the British Empire had long term effects on the selection of key personnel, aircraft types and methods of operation in Australia. The 1919 air race from Britain to Australia celebrated the idea of a direct aerial connection between the two countries<sup>8</sup>. Over time local needs and the developing local aviation industry became more important and influential. By the end of WW2 Australia had stepped decisively away from the British Empire and from then on was more influenced by world developments, particularly those in the USA.

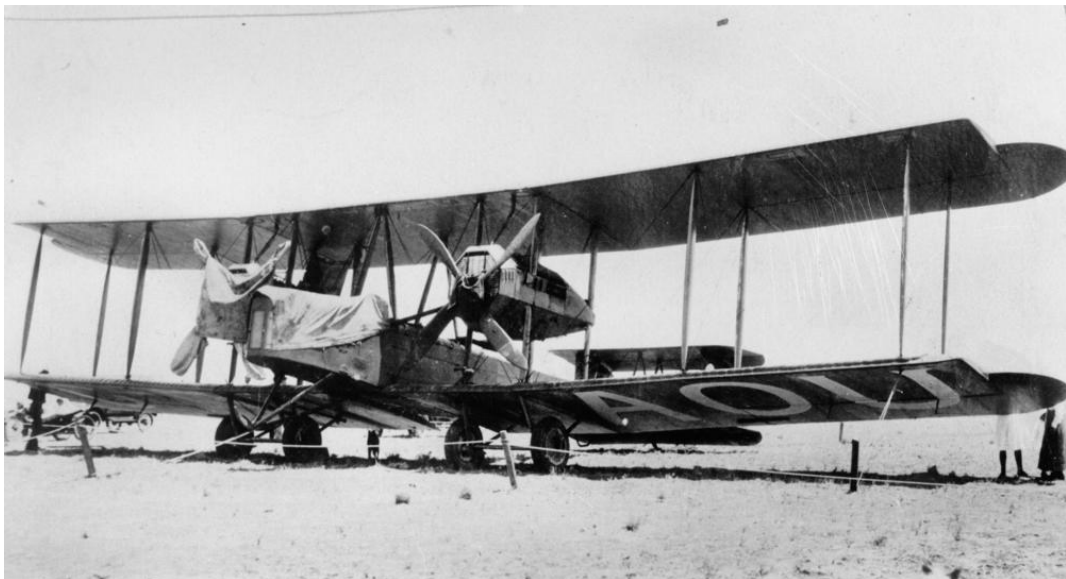


Figure 7: Ross and Keith Smith's Vickers Vimy (State Library of Queensland)

The role of empire and the shift towards a more Australian national interest is traced in many collections. The QANTAS historical holdings, for example, cover this transition in great detail. Major national collections also contain many items that

illuminate Australia's relationship first to Great Britain and then increasingly to the wider world.



Figure 8: Qantas Empire Airways (State Library of Queensland)

The existing major collections in museums and archives are in the main readily accessible to the public and well-maintained. Access to these information sources through a single digital portal would be highly desirable. There are also major private collections of photographic and documentary material which relate to this theme, including the tens of thousands of images held by the photographer John Hopton<sup>9</sup>, and the extensive aviation archive compiled by Keith Meggs, both of Victoria. Whilst both of these collections have some online presence, notably the Monash University presentation of Meggs' material<sup>10</sup>, their long term future and accessibility remain unresolved.

## Museums, Collections & Archives

---

Australian War Memorial, ACT	<p>Large collection of material such as objects, records, photographs relating to aviation's role during the great wars in association with the British Empire such as oral histories from WW1 mainly Gallipoli.</p> <p>Also a small collection of artworks and portraits of RAAF personnel that are associated with the British Empire. Also includes material regarding the Empire Air Training Scheme.</p>
National Archives of Australia, ACT	<p>Reports, documents and other ephemera relating to Australian aviation and the British Empire such as papers and speeches by Prime Ministers and Secret Documents from the Imperial Conference in 1930.</p>
National Film Sound Archive, ACT	<p>Oral histories and songs about empire aviators such as Amy Johnson, Bert Hinkler and Alan Cobham. Newsreels and audio recordings of aviation's role in the British Empire.</p>
National Library of Australia, ACT	<p>Photographs and documents relating to aviation's involvement with the British Empire such as the Qantas Empire Airways. Suitcase used to transfer oil during the Southern Cross trans-Tasman flight.</p>

---

	Several WW1 medals and memorabilia belonging to Captain Charles Ulm and Sir Charles Kingsford-Smith.
National Museum of Australia, ACT	Post bag used by the Qantas Empire Airways. A large collection of memorabilia and objects relating to Sir Charles Kingsford – Smith and Captain Charles Ulm.
	Neil Jensen Collection which contains material from Edgar Wikner Percival who design and manufactured aircraft for the British.
National Portrait Gallery, ACT	Portraits and busts of Sir Charles Kingsford-Smith and Captain Charles Ulm. Portraits and photographs of individuals associated with empire such as Hudson Fysh and Sir Lawrence Wackett.
Australian Aviation Museum, Bankstown, NSW	Short C Class Empire Flying Boat model that was used by the Imperial Airways.
Powerhouse Museum, NSW	Has material regarding Lores Bonney a pioneering female aviator such as photographs, perfume bottles and commemorative plaque.
State Library of New South Wales, NSW	Books, documents, pamphlets and photographs regarding the British Empire such as Qantas's involvement with the Imperial Airways and reports on imperial aviation.

---

The Qantas Heritage Collection, NSW	Has material, objects and memorabilia relating to Qantas's involvement with the Imperial Airways to form Qantas Empire Airways.
Hinkler Hall of Aviation & Hinkler House Memorial Museum, QLD	Museum dedicated to Bert Hinkler aviation pioneer during the days of Empire contains aircraft and archival material relating to Hinkler. Hinkler House was moved from England to Queensland and recreated and restored to a period when Bert Hinkler lived in it.
Qantas Founders Outback Museum, QLD	Has material relating to the early days of Qantas and its involvement with the Imperial Airways to deliver services across the Empire.
Queensland Air Museum, QLD	Ukulele that was inscribed by Sir Charles Kingsford-Smith in 1931. A suitcase that belonged to a child who migrated to Australia from the UK after the war.
Queensland Museum, QLD	Mail bag used in the first air mail delivery between Australian and Britain. Bert Hinkler's Arvo Baby used in his solo flight in 1920 and goggles.
State Library of Queensland, QLD	Photographs, documents and books relating to Aviation's involvement with the British Empire such as photographs of Qantas Empire Airways.

South Australian Aviation Museum, SA	Material relating to early aviation pioneers such as Wilkins, Harry Butler and Roy Gropler.
State Library of South Australia, SA	Papers and diaries belonging to Keith and Ross Smith.
Airways Museum, VIC	Material relating to the period of Australia's involvement with the British Empire such as Qantas Empire Airways and Guinea Gold Airways.  Objects and ephemera relating to Ross and Keith Smith, Kingsford Smith and Charles Ulm.  The Harman Trophy awarded to outstanding aviators in the League of Nations. Awarded to Sir Charles Kingsford Smith and Hon. Hugh Grosvenor.
Australian National Aviation Museum, VIC	Archival material relating to John Duigan who designed the first Australian made plane.
Museums Victoria, VIC	Photographs of Empire Flying Boats from Imperial Airways.
RAAF Museum, Point Cook, VIC	Material from Point Cook, Australia's first air base which chronicles the RAAF involvement with the British during its creation and subsequent participation the WW1 & 2.
State Library of Victoria, VIC	Photographs, documents and books relating to Aviation's involvement with the British Empire

---

such as photographs of Qantas Empire Airways.

### Places

---

Old Bar Airstrip - Farquhar Inlet Old Bar Rd Old Bar, NSW	Played a role in the development of air mail services. Has associations with early empire aviators such as Jean Batten, Kingsford-Smith and Ulm.
QANTAS Hangar Longreach, Landsborough Hwy, Longreach, QLD	Listed on the National Heritage List and several other heritage lists, it was the place where Qantas began delivering airmail for Imperial Airways under Qantas Empire Airways.
Smith Brothers Memorial, James Schofield Drive, Adelaide, SA	The memorial dedicated to the Smith brothers who completed the first official England to Australia flight. Their original aircraft the Vickers Vimy is preserved at this site.

### People & Organization

---

Amy Johnson	First woman to fly solo from England to Australia. Material such as photographs and documents regarding Amy Johnson can be found in the National Archives of Australia and other state libraries.
Bert Hinkler	Early Queensland pioneer aviator. Material regarding Hinkler can be found in many



---

	museums and institutions such as Queensland Museum, Hinkler Hall of Fame, National Film Sound Archive and National Archives.
Charles Kingsford Smith	One of the most famous pioneer aviators material associated with him can be found in museums such as the National Library of Australia, National Museum of Australia, Airways Museum, Queensland Air Museum and the National Archives of Australia to name a few.
Qantas	One of the last surviving airlines to be associated with the period of imperialism. Qantas or Qantas Empire Airways material can be found in the National Museum of Australia, Qantas Heritage Collection, Qantas Founders Outback Museum, National Library of Australia, State Library of Australia and Airways Museum.
Ross and Keith Smith	The brothers were the winners of the England to Australia competition. Material regarding them can be found a number of museums such as the Airways Museum, National Museum of Australia, South Australian Aviation Museum, National archives and the State Library of South Australia.

### **2.1.5 Environment**

The Australian environment, and people's experience of it, has been significantly impacted by aviation. Most Australians would be familiar with the sound of operating aircraft. Centres of aircraft noise, like airports, bring with them noise corridors. The sound of aviation has altered over time, from the stutter of early internal combustion engines through the roar of high technology piston engines, to the latest jets, where sound amelioration has become a key issue. The National Film and Sound Archive and the Australian War Memorial preserve sound recordings of aircraft in operation<sup>11</sup>.

The emissions from aircraft are also increasingly important as the broader community recognises the need to control emissions, particularly those into the upper atmosphere resulting from high performance jet operations. Ground installations must also meet increasingly tight regulations on fuel and oil storage and waste disposal. The records of Airservices Australia provide extensive information relating to the development and maintenance of aviation infrastructures and the implementation of environmental protection measures<sup>12</sup>. Archives and parliamentary records at national and state level provide a wealth of detail on aviation regulation and administration.

Aviation has also greatly influenced the Australian understanding of the environment. For example, the progressive and comprehensive use of aerial photography has had a profound influence in areas ranging from road and transport construction to the broader understanding of the landscape and coastal waters. The National Archives of Australia, Geosciences Australia<sup>13</sup>, the National Library of Australia (NLA) and various state level archives hold extensive collections of survey images from the very earliest days of aviation in Australia.



Figure 9: Aerial photography (State Library of NSW)

Aerial agriculture has had a notable influence on the way that crops are cultivated in Australia, and the yields that can be expected. The Walcha Pioneer Cottage features a Tiger Moth biplane, one of the pioneering aerial agriculture machines. Aircraft now play an everyday role in the control of widely dispersed livestock and feral animal populations, including the increasing utilisation of helicopters to carry out these tasks.



Figure 10: Aerial agriculture (National Archives of Australia)

Aviation's deep reliance on accurate weather information has led to the development of comprehensive forecasting and weather measurement systems across Australia. The Airways Museum at Essendon in Victoria holds material relating to the collection and dissemination of weather information. Many other organisations have examples of weather balloons, wind-speed measurement devices and related instrumentation. These systems have a major influence on the lives of regional and rural Australians. Aviation is also a powerful instrument for the control of environmental hazards such as fires, and in society's response to disasters such as floods.

Apart from the small number of nominated museums, there are many aspects of the environmental significance of aviation heritage that are under-represented in the surviving historic record. In particular, material relating to aerial agriculture and helicopter operations is isolated and fragmented.

### Museums, Collections & Archives

---

Geosciences Australia, ACT	A large repository of aerial photographs taken from the mid-20 <sup>th</sup> century.
Museum of Australian Democracy, ACT	Records of parliamentary speeches concerning aviation's role in the environment and resulting legislature.
National Archives of Australia, ACT	Documents, reports and other archival material regarding aerial agriculture and environment such as reports prepared by the Department of Civil Aviation.
National Library of Australia, ACT	Documents by the Department of Transport and Department of Civil Aviation pertaining to aerial agriculture and environment.
State Library of New South Wales, NSW	Books, reports documents relating to aerial agriculture, mustering and pasture management.
Walcha Pioneer Cottage, NSW	The first Tiger Moth Plane used in spraying superphosphate in Australia.
State Library of Queensland, QLD	Documents, reports and other archival material regarding aerial agriculture and environment such as reports prepared by the Department of Civil Aviation.

---

Museum of South Australia, SA	Material regarding Sir Hubert Wilkins who was a pioneer aviator in the aerial explorations of the Antarctic.
Airways Museum, VIC	Documents and archival material regarding environmental management by civil aviation.

**Places**

---

Wilkins Aerodrome, Australian Antarctic Territory, Antarctica	An aerodrome in Antarctica named after Sir Hubert Wilkins, a polar aviation pioneer.
---	--

### **2.1.6 Identity**

As a new and exciting technology of boundless possibilities, aviation has been incorporated into the Australian sense of self. Early aviators such as Charles Kingsford Smith and Bert Hinkler were seen not only as pioneers of the new technology, but as distinctively Australian heroes. These individuals became part of the Australian national legend and their fame continues to this day. Their careers and achievements are represented in the national collection by preserved aircraft, personal memorabilia and extensive documentation. Kingsford Smith's "Southern Cross" tri-motor is so highly regarded that it is the subject of a single object display at Brisbane Airport<sup>14</sup>.

The early pioneers were inspirational and aspirational figures; and aviation also provided a transformational role for women. Aviators like Nancy Bird Walton embodied new concepts of social mobility and independence. Increasingly women took to the air as participants and professionals, opening up broader horizons for Australian women generally. Substantial collections relating to this theme can be found with QANTAS, and in the various Royal Flying Doctor Service Visitor Centres around Australia.

Indigenous communities and culture has also been profoundly affected by aviation. Aircraft provided rapid contact with the outside world, and the possibility of movement between remote communities. The improved delivery of health and education services to indigenous communities was particularly significant. The participation of indigenous people in aviation is still relatively unexplored.



Figure 11: Nancy Bird Walton with her Gypsy Moth Plan 1935 (National Library of Australia)

Another important expression of Australian aviation is through art, film and literature. Many Australian collections include examples of travel posters and advertising, retailing the romance and accessibility of flying. Numerous relevant artworks are publicly accessible in galleries such as the National Portrait Gallery and the National Gallery of Victoria, and the Neville Shute Library is devoted to the work of this notable engineer and novelist. Library collections across the country hold both personal documentation and monographs tracing the careers of important individuals. The National Film and Sounds Archive (NFSA) has a vast array of newsreel footage, interviews, musical recordings and even feature films dealing with Australian aviation.



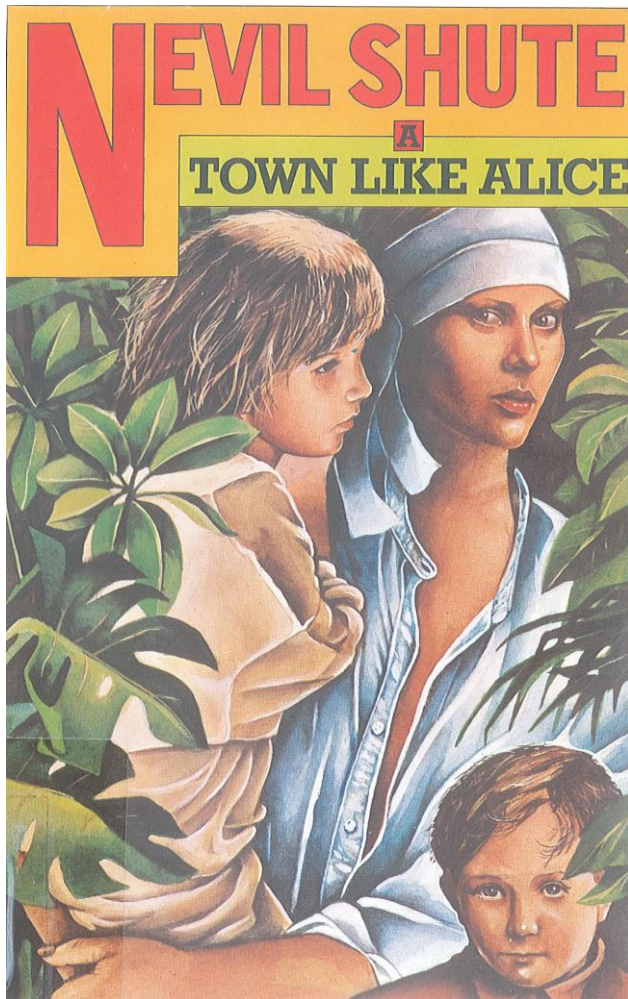


Figure 12: Nevil Shute cover (Northern Territory Government)

The role of Aboriginal and Torres Strait Islander people in aviation and the broader role of women in the aviation manufacturing industry are both largely unrepresented through heritage collections and places, and there is a paucity of extant cultural materials relating to these stories. This is an area that could very effectively be explored via oral history programmes and personal stories, material which is ideal for public access via a portal.

### Museums, Collections & Archives

---

National Archives of Australia, ACT	A large repository of materials such as documents, papers, manuscripts of aviation identities and places that have been named after them like Kingsford-Smith Airport.
National Film Sound Archive, ACT	Oral history and song recordings about early aviators that reflect early aviation's impact on popular culture.
National Library of Australia, ACT	Photographs, books and document relating to aviation pioneers such as Kingsford-Smith, Charles Ulm and Nancy Bird Walton. Also objects such as medals and pins from Charles Kingsford-Smith and Charles Ulm. Oral histories from aviation identities such as Arthur Cecil Butler and Nancy Bird Walton.
National Museum of Australia, ACT	Austin Bryne, Ellen Rogers and Gerald Ashby Hill Collections contains material regarding Southern Cross and Sir Charles Kingsford – Smith and Captain Charles Ulm.  Jan Phillips, Australian National Airlines and the Anthony Polinelli and Catherine Bridges collections contain material relating to Australian airlines such as East West Airline uniforms and ANA signage.

National Portrait Gallery, ACT	Portraits, photographs and busts of aviation identities such as Nancy Bird Walton, Dick Smith and Charles Kingsford-Smith.
Royal Australian Mint, ACT	Collection of aviation related coins that commemorate aviation in Australia.
Butler Air Transport Museum Tooraweenah NSW	Butler Air Transport was an important regional air service in NSW servicing regional centres in NSW and Queensland as air mail carrier and a civil transport airline.
Powerhouse Museum, NSW	Has a collection of objects from Nancy Bird Walton. Photographs and documents from the Arthur Butler Collections.  Several collections that concentrate on the works of Lawrence Hargrave.
State Library New South Wales, NSW	Large archival and photographic collection of early aviation pioneers such as Nancy Bird Walton and Sir Ross and Keith Smith. Also a large collection of photographs and advertising ephemera from Australian Airlines such as TAA and East West Airlines.
The Qantas Heritage Collection, NSW	Qantas is one of the oldest airlines in Australia and has become Australia's national carrier. Its collection contains memorabilia, historical objects, advertising paraphernalia and documents about Qantas and other Australian airlines.

Nevil Shute Memorial Library, Alice Springs, NT	Named after Nevil Shute, author of such books as A Town Called Alice. Shute's books often have aviation themes.
Royal Flying Doctor Service, Alice Spring Tourist Facility, NT	Heritage centre for the Royal Flying Doctors Service that chronicles its beginnings and history.
The Katherine Museum, NT	Has the gypsy moth flown by Clyde Fenton, Northern Territory's first flying doctor.
Australian Stockman's Hall of Fame, QLD	Contain gallery that showcases development and history of the Royal Flying Doctor's Service. Also has material pertaining to early women aviators.
Hinkler Hall of Aviation & Hinkler House Memorial Museum , QLD	Museum dedicated to Bert Hinkler aviation pioneer during the days of Empire contains aircraft and archival material relating to Hinkler. Hinkler House was moved from England to Queensland and recreated and restored to a period when Bert Hinkler lived in it.
Qantas Founders Outback Museum, QLD	Objects, memorabilia, aircraft, photographs and documents that relate to the early days of Qantas.
Queensland Museum, QLD	Bert Hinkler's Arvo Baby and The Flying Flea by Henri Mignet. Badges, pins and memorabilia from Lores Bonney.

---

Art Gallery of South Australia, SA	Portrait of Harry Butler, pioneer aviator.
Minlaton Museum, SA	A room containing documents and artefacts dedicated to local aviation hero, Capt. Harry Butler.
South Australian Museum, SA	Contains the Wilkins Collection which has material from George Hubert Wilkins. Also contains some aviation archival material such as diaries, conference papers and news clippings about MacRobertson Miller Aviation.
State Library of South Australia, SA	Papers and diaries belonging to Keith and Ross Smith.
Airways Museum, VIC	Has material and object relating to early pioneer aviator such as Charles Kingsford – Smith, Bert Hinkler and Charles Ulm. Also has archival material regarding local airlines and operators such as Adelaide Airways and Adastra Airways.
Museum Victoria, VIC	A variety of material relating to aviation identity in Australian life. A collection of trade literature which include advertising and information brochures from airlines such as Ansett and TAA.
Sir Reginald Ansett Transport Museum, VIC	Museum focusing on Sir Reginald Ansett and his transport company.
State Library of Victoria, VIC	A collection of pictures, maps and manuscripts which include archival material regarding Sir

---

	Ross and Keith Smith, airlines and air travel. These include
TAA Museum, VIC	Museum focusing on the Trans-Australia Airlines and Australian Airlines. It has uniforms, advertisement and historical documents relating to TAA and other Australian airlines.
Beverley Aeronautical Museum and Information Centre, WA	Museum dedicated to aviators in Western Australia which include the centrepiece aircraft the "Silver Centenary" which was built and by local identities, Selby Ford and Tom Shackles, for WA's centenary.
State Library of Western Australia, WA	A collection of books, manuscripts and pictures relating to aviation in Australia which includes a book by Arthur C. Butler and documents regarding the "Silver Centenary".

## Places

---

Qantas Huts (former) Sydney Hwy , West Island Settlement, EXT, Australia	Qantas has been associated with Australian aviation in civilian and military context as shown in this site where civilian and military aircraft stopped to refuel in the way to South Asia.
Arthur Butler Memorial Aerodrome, Aerodrome Road, Tooraweenah, NSW	Aerodrome associated with Butler Air Transport and Australia's first registered airport.

Billy Hart memorial Parramatta Park, Parramatta, NSW	Dedicated to a local aviation pioneer who completed one of the earliest cross country flights in NSW.
Butler Airlines Hangar (Former), Warren Road, Gilgandra, NSW	Associated with Butler Airlines that was a major regional airline in the mid-20 <sup>th</sup> century.
Qantas House (No. 1 Chifley Square) 68-96 Hunter Street, Sydney , NSW	The first planed headquarters of the Qantas Empire Airways.
QANTAS Hangar Longreach, Landsborough Hwy, Longreach, QLD	This listed hangar is where the story of Qantas began as an airline.
Ansett's First Hangar, Ballarat Road HAMILTON, Southern Grampians Shire, VIC	The first hangar where the Ansett transport company first moved into air transport.
Reg Ansett's House, 12 Learmonth Street HAMILTON, Southern Grampians Shire, VIC	The house where Reginald Ansett is a part of the heritage that Sir Reginald Ansett left behind as an aviation identity.

### People & Organizations

Bert Hinkler	Hinkler was a pioneering aviator and was well known in Queensland, especially in the Bundaberg region. The Hinkler Hall of Aviation, Hinkler House Museum, Queensland Museum and National Archives Australia are
--------------	--

---

	<p>some of the places that have material relating to Hinkler.</p> <p>Hinkler's heroics have even inspired songs such as "<i>Hustling Hinkler</i>" which is held at the National Film sound Archive.</p>
Nancy Bird Walton	<p>A pioneering female aviator, she founded the Australian Women Pilots' Association. Material regarding Nancy Bird Walton can be found in many collecting institutes and collections such as the National Museum of Australia, the National Archives and the Powerhouse in Sydney who holds personal items relating to Nancy Bird Walton.</p>
Qantas	<p>One of the most easily recognizable airlines domestically and abroad, Qantas is also one of the oldest continuing airlines in Australia.</p> <p>Material regarding Qantas can be found across the nation from place such as the Queensland Museum and Qantas Founders Outback Museum to the National Museum of Australia and the Australian War Memorial.</p> <p>Important places associated with Qantas can be found on the National and Commonwealth List in Australia and overseas territory such the Cocos Keeling Islands.</p>
Sir Reginald Ansett	<p>Material associated with Sir Reginald Ansett and Ansett Australia can be found in various collecting institutes such as the National</p>



---

Museum of Australia, Museum Victoria and museums such as Sir Reginald Ansett Transport Museum.

### 2.1.7 Innovation

Individual Australians contributed to the early pioneering phase of aviation, and later made significant contributions to the developing international industry of flight. Within the country many individuals tackled such challenges as being the first to fly, the first to manufacture an aero engine (for example the Duigan biplane and engine at Museum Victoria)<sup>15</sup>, the first to fly passengers (represented in QANTAS archives) and the first to take a doctor to a patient<sup>16</sup>, as represented in the Royal Flying Doctor Service (RFDS) Visitor Centres. All these are significant national milestones in the aviation story. Overseas, pilots like Harry Hawker made substantial contributions to the developing British aviation industry as an engineer and pilot.



Figure 13: Prototype of black box flight recorder by David Warren (Museum Victoria)

As the technology matured, Australians continued to make contributions that were of both national and international significance. Organisations such as the Aeronautical Research Laboratories worked on aviation issues, with results that included the prototype of the black box flight recorder system, an example of which is held by Museum Victoria. CSIRO carried out some of the first studies into fatigue in aircraft structures, and CSIRO scientist James "Gerry" Gerrand developed distance measuring equipment (DME). This innovation allowed the distance between an aircraft and an airfield to be measured with great accuracy and made a fundamental contribution to aircraft safety. The prototype towers of the INTERSCAN Microwave Landing System, developed in the later 1970's by CSIRO and Amalgamated Wireless Australasia (AWA), remain in Melbourne and have been documented as worthy of preservation<sup>17 18</sup>.



Figure 14: Microwave Landing System, VIC (Airways Museum)

Apart from the major milestone objects and personal stories, much of the story of Australian aviation innovation remains unexplored and difficult to access in government archives and the specialist records of organisations like CSIRO. With structural change in these organisations, such holdings may be under threat.

### Museums, Collections & Archives

---

CSIRO, Black Mountain, ACT	One of the great centres of innovation of Australian aviation. The CSIRO has collaborated with various departments to develop and create innovative ways of navigation and safety such as the flight recorder, stress fatigue tests and microwave landing equipment.
National Archives Australia, ACT	Patents and documents relating to innovative inventions and individuals such as Lawrence Hargrave, David Warren and John Duigan who built and flew the first Australian made aircraft.
National Library of Australia, ACT	Documents, photographs and ephemera relating to early airlines such Western Australian Airways and Qantas.
National Museum of Australia, ACT	The Neil Jensen Collection is objects and documents relating to Neil Jensen who designed and manufactured the first low-wing cantilever monoplanes in the Commonwealth in 1930. The collection includes an example of the Gull monoplane and various documents, letters and manuals relating Neil Jensen.
Powerhouse Museum, NSW	A large collection of technology and innovation regarding aviation. Several

---

	collections with Lawrence Hargrave material such as sketches, models and documents.
Airways Museum, VIC	A large collection of civil aviation objects, documents and photography such as numerous radio and communication systems, air traffic consoles and surveillance systems.  Some examples are a SWB8 High Frequency radio transmitter, original console from the Essendon Control Tower and the Bellini-Tosi Medium Frequency Direction Finder.
Museums Victoria, VIC	Has several prototypes of the flight recorder that was invented by David Warren.

## Places

---

Llandilo International Transmitting Station Stoney Creek Rd , Shanes Park, NSW	The Llandilo International Transmitting Station is played an important part in Australia's aviation and international air routes coming into Australia.
Sydney Airport Air Traffic Control Tower General Holmes Dr, Sydney Airport, NSW	Nominated on the Commonwealth Heritage List for its innovative design and aesthetics.  The air traffic control tower at Kingsford-Smith remains a landmark on the Sydney landscape.

DSTO Aeronautical and Maritime Research Laboratory Lorimer St Port Melbourne, VIC	Aeronautical research facility and aircraft manufacturing since the late 1930s.
Microwave Landing System Antennas at Melbourne Airport, Tullamarine Fwy, Melbourne Airport, VIC	Collaborative effort between CSIRO, AWA and the Department of Civil Aviation to develop a new landing system. Located at the Melbourne Airport, the site is nominated for the Commonwealth Heritage List.

### People & Organizations

Amalgamated Wireless Australasia	Designed and manufactured equipment used in almost all aspects of Australian aviation operation including communications equipment. Relevant collection materials distributed throughout aviation heritage collections in Australia such as Powerhouse and Airways Museum, VIC.
CSIRO	Was involved in the development of new navigation and communication systems with the Department of Civil Aviation in the 1950s.
David Warren	David Warren was the inventor of one of the most important pieces of aviation used today, the flight recorder or black box. Material regarding David Warren and his invention can be found in the Melbourne Museum and the Powerhouse Sydney.

### 3.1.8 Isolation



Figure 15: MacRobertson Miller Airlines (National Library of Australia)

Air transport was part of the answer to an essential Australian problem – communication and movement over very great and largely unpopulated distances. This applied to both travel within the country, and communication with the rest of the world - especially Europe, the United States of America and Great Britain. Aviation gave Australians a means of dismantling the sense of isolation that arose from the country's geographic position and scale.

Isolation by definition is hard to represent through physical items; photographs and personal accounts provide a more direct path of access to this story. Collections of this type at the NMA, the NLA and the major state archive collections are potential sources. There is undoubtedly more important privately owned material still to be identified and collected. It is also reasonable to view items associated with the 1919-20 air race as part of this story, in that the race was held to establish direct and rapid aerial communication on a route where sea travel took weeks or months. The Australian War Memorial (AWM) holds a DH9 aircraft that completed the gruelling trip, and the winning Vickers Vimy is preserved in an individual case at

Adelaide Airport. The work of the RFDS is also relevant to this theme and is represented in a range of state and local collections.



Figure 16: Royal Flying Doctor Service radio operation 1956 (National Library of Australia)

Material relevant to this theme that is held within established collecting institutions is mostly both accessible and well cared for. It is anticipated that many privately held items will be found through the course of this research which may be vulnerable to loss.

### Museums, Collections & Archives

---

Australian War Memorial, ACT	DH9 aircraft used in the 1919 -1920 air race.
National Archives of Australia, ACT	A collection material relating to John Flynn, the founder of the Royal Flying Doctors Service. These include documents and oral

---

	histories from John Flynn and the people who knew him.
	Documents and records that are related to E J Conellan and Conellan Airways. These include contracts, lease agreements and aerial surveys.
National Library of Australia, ACT	A collection of photographs, documents and ephemera that relates to airlines that connected regional centres such as MacRobertson Millers and Qantas. The NLA also has material relating to the delivery of airmail to isolated communities.
National Museum of Australia, ACT	Jan Phillips Collection contains items from the East West Airlines, a regional airline that serviced regional centres and major cities. This collection contains uniforms, photographs and East – West magazines.
	Australia Post Historical Collection contains material from Australia Post dating from the late 19 <sup>th</sup> century. These include mail bags that were used to deliver mail through Qantas to remote and isolated communities.
Butler Air Transport Museum Tooraweenah NSW	A regional airline that helped provide services to local communities in the region. This museum is dedicated to Cecil Arthur Butler and the airline he created.



---

Narromine Aviation Museum, NSW	A regional centre and major airhub since the early 20 <sup>th</sup> century.
The Qantas Heritage Collection, NSW	The Qantas Heritage Collection contains material from when it began as a regional airline and then as part of Qantas Empire Airways.
Central Australian Aviation Museum, NT	Situated in the hangar where Conellan Airways began, the museum houses several historic aircraft and memorabilia relating to Conellan, Royal Flying Doctors and aviation in the Northern Territory.
Royal Flying Doctor Service, Alice Springs Tourist Facility, NT	A major organisation that connected regional communities through the delivery of medical services. The facility at Alice Springs features material relating to its formation and history.
Australian Stockman's Hall of Fame, QLD	Contains a gallery that showcases development and history of the Royal Flying Doctor's Service and aviation in regional Queensland.
Qantas Founders Outback Museum, QLD	Is a museum devoted to Qantas and its development. Has material relating to Qantas early years servicing regional Queensland through airmail services and the first inaugural flight of the RFDS.

Nhill Aviation Heritage Centre, VIC	A major regional air hub that was part of the war and also serviced civilian aircraft. The Nhill Aviation Heritage Centre is dedicated to Nhill part in early aviation and its continued use as a recreational aerodrome. The heritage centre also encompasses the Nhill Aeradio Station.
Sir Reginald Ansett Transport Museum, VIC	Museum devoted to Ansett and its founder which has a great impact on Hamilton and the region in its early days. Has memorabilia, records and aircraft from the early days of Ansett.
TAA Museum, VIC	Museum focusing on the Trans-Australia Airlines and Australian Airlines. It has uniforms, advertisement and historical documents relating to TAA and other Australian airlines.

## Places

Qantas Huts (former) Sydney Hwy , West Island Settlement, Cocos Keeling Island	An isolated refuelling point in the Cocos Keeling Islands, this site was often used in the early days of aviation by aircraft on their way to South Asia.
Arthur Butler Memorial Aerodrome , Aerodrome Road, Tooraweenah, NSW	The base of operations for Butler Air Transport which provided services to regional communities in NSW.

---

QANTAS Hangar Longreach, Landsborough Hwy, Longreach, QLD	This nationally listed site is the place where Qantas had its operations providing services to the region and eventually nationwide.
Ansett's First Hangar, Ballarat Road Hamilton, Southern Grampians Shire, VIC	Hangar where Sir Reginald Ansett started his transport company which was important to the development of Hamilton as a regional aviation hub.
Smith Brothers Memorial, James Schofield Drive, Adelaide, SA	The memorial dedicated to the Smith brothers who completed the first official England to Australia flight. Their original aircraft the Vickers Vimy is preserved at this site.
Barloweerie Aerodrome, Meeberrie-Mt Wittenoom Rd on Pia Aboriginal Reserve Murchison, WA	An important site to the local community that provides essential services such as commercial air and mail services.
Royal Flying Doctor Service, House and Office, Cnr Clarendon & Fairbairn Sts Derby, WA	Listed on the WA Heritage list, this site represents the role of the flying doctors in the Kimberly communities by providing medical services to remote areas.

### People & Organisations

---

Butler Air Transport	Butler Air Transport was an important regional air service in NSW servicing regional centres in NSW and Queensland as an air mail carrier and a civil transport airline.
----------------------	--

---

Conellan Airways

Conellan Airways began as a mail carrier for the Northern Territory and Western Australia, connecting Alice Springs and Wyndham. It then became a carrier for the Royal Flying Doctor's Service and eventually becoming a regional airline. Material regarding Conellan Airways can be found in the National Library of Australia, National Archives of Australia and the Central Australian Aviation Museum.

Qantas

One of the oldest continuing airlines in Australia which started out as a regional air mail carrier to become an international airline, helping to connect isolated communities. Qantas material can be found in numerous places such as the National Museum of Australia, the National Library of Australia and the Qantas Founders Outback Museum. Qantas is also associated with several sites that deal with the isolation such as the Qantas hut in the Cocos Keeling Island.

### **2.1.9 Modernity**

Aviation technology and related facilities like airports have been showplaces for modernity, in terms of being the latest in industrial design, having the latest systems, and offering the greatest level of comfort and service to users. The technology therefore incorporates both the pursuit of the latest style, and the latest technology, to achieve the exacting standards that aviation demands.

Modernity can be traced by looking at major airport buildings. These are often substantial corporate or public showcases, as well as working architecture. The succession of styles and functions can be seen by comparing the surviving historic terminal buildings in Melbourne and the latest installations at Sydney Airport. Control towers show a striking development, from an emphasis on designs that facilitate visual and radio communication to modern installations that are highly computerised and rely on radar. The all-glass control tower at Sydney Airport, built in 1995, is a significant architectural and functional milestone<sup>19</sup>.

Statutory authorities such as Airservices Australia, hold significant technical and construction information on Australia's airport installations and other systems important to safe national aviation operations. These records include planning material, construction documentation (including blueprints), and details of progressive developments.



Figure 17: Sydney Air Traffic Control (National Library of Australia)

The pursuit of the corporate appearance of modernity can be examined by looking at collections of flight crew wear such as those found at QANTAS, the TAA Museum, the Powerhouse and the NMA. Other important material remains in private hands, such as the material held by Phil Buckley<sup>20</sup> and Darren Carroll<sup>21</sup> in Australia and even Cliff Muskiet<sup>22</sup> in the Netherlands. All three maintain active websites.



Figure 18: TAA air hostesses circa 1970s (David Carroll)

The modernity theme is only addressed in a minor way through existing collections, although there are undoubtedly large archival resources. The significant development of a digital portal spanning the national collection would allow the public to gain a better idea of how aviation expresses concepts of modernity.

#### **Museums, Collections & Archives**

---

National Film and Sound Archive  
Australia, ACT

A large collection audio visual material that includes advertisements and film clips from various airlines such as Qantas and TAA.

---

	The Ansett Australia collection which has around 100 titles that chronicle the changes in the company's history and Australian air travel.
National Library of Australia, ACT	Documents, photographs and other ephemera that charts the modernisation of aviation and air travel in Australia through changes in stewardess uniforms and advertising.
National Museum of Australia, ACT	Jan Phillips Collection contains items from the East West Airlines, a regional airline that serviced regional centres and major cities. This collection contains uniforms, photographs and East – West magazines.
Qantas Heritage Collection, NSW	A large collection of memorabilia from Qantas which includes examples of uniforms of air crew, advertising ephemera and other objects used by Qantas.
State Library of NSW	The Concorde epitomises the modernisation of aviation and air travel, as new and faster way of travel. The State Library of NSW has a collection of photographs that document the excitement Concorde generated in the 1970s to the 1990s.
Airways Museum, VIC	Airways Museum's technology based collection and documentary ephemera have examples of modernisation in terms of the



---

	changes to technology and design equipment used in civil aviation.
TAA Museum, VIC	The Trans-Australia Airlines was one of the major airlines in Australia up till the 90s. The TAA Museum has material associated with TAA such as uniforms, advertisement and other memorabilia.

### Places

---

Qantas House (No. 1 Chifley Square) 68-96 Hunter Street, Sydney, NSW	Former headquarters of the Qantas Empire Airways, it was designed in the 1930s post-modernist style with the latest technology in building techniques and material.
Sydney Airport Air Traffic Control Tower General Holmes Dr, Sydney Airport, NSW	A landmark of the Sydney cityscape, the air traffic control tower is a unique in terms of architectural design and aesthetic value. It was also installed with innovative consoles that used the latest technology at the time and includes thoughtful placement of the console to allow for uninterrupted views.

### People & Organisations

---

Cliff Muskiet (Netherlands)	An international collector from the Netherlands, his collection contains a section on Australian civil aviation.
-----------------------------	--

---

Darren Carroll	A private collector of a significant collection of civil aviation uniforms from various domestic airlines such as East- West Airlines, Hazelton and Skywest.
Phil Buckley	Based in Sydney, Phil Buckley is a collector of aviation flight gear mainly concentrating on military gear.
Qantas	<p>One of the oldest continuing airlines in Australia which started out as a regional air mail carrier to become an international airline, helping to connect isolated communities.</p> <p>Qantas material can be found in numerous places such as the National Museum of Australia, the National Library of Australia and the Qantas Founders outback Museum.</p> <p>Qantas is also associated with several sites that deal with the isolation such as the Qantas hut in the Cocos Keeling Island.</p>
Trans-Australian Airlines	Museum focusing on the Trans-Australia Airlines and Australian Airlines. It has uniforms, advertisement and historical documents relating to TAA and other Australian airlines. Material regarding TAA can be found in most major collecting institutes and also the TAA Museum, a museum dedicated to TAA and its history.

### **2.1.10 Safety**

In common with many countries, Australian aviation went through a pioneering phase. The technologies of the aircraft, the airfields, and the operating systems were of necessity quite primitive and the opportunities for accidents were commonplace. The public tended to view aviation as an adventurous activity that was glamorous in part because of its danger.

As aviation matured, safety not only became more achievable, but the pursuit of safety became fundamental to public expectations. An air trip from Sydney to Melbourne became a regular business activity and within a few years large numbers of the public would be undertaking purely private travel.

Within this context the aviation disasters in Australia of the 1920s and 1930s often acted for the catalyst for major advances in safety. Following the 1938 loss of the Douglas DC-2 airliner Kyeema, with passengers including a federal MP, a national legislative framework for air transport was passed at federal level and the Department of Civil Aviation was established<sup>23 24</sup>. These events are documented in archives at federal and state level and the NMA holds relics of several of the major air crashes. The sites of these crashes are also marked by memorials.

With the development of aviation administration in Australia came efforts to establish a national organisation to investigate crashes and to recommend improvements in safety standards. All of this has led to a complex modern system where a range of statutory authorities such as including Airservices Australia, the Civil Aviation Safety Authority and the Australia Transport Safety Bureau are responsible for developing and enforcing rigorous national standards. Together, these organisations work to ensure that Australia retains a position where it is recognised for its high level of technology and safety. Much of the surviving historical material on this topic is documentary and photographic, and is readily accessible via archives at national and state level.



Figure 19: Kyeema Air Disaster memorial (Wikipedia Commons)

National systems for radio communication, directional beacons and finally radar were first established and then progressively upgraded around the country. Examples of these generations of equipment - of increasing sophistication and safety - are held by the Airways Museum at Essendon in Victoria. Other material such as aircraft compass and propeller prototypes are held by Museum Victoria, and by the Powerhouse Museum in Sydney.

Safety also requires the highest standards of maintenance. All Australian airports feature maintenance facilities and there are major industries servicing the sector. However across the country, grass roots operations ensure that thousands of aircraft are securely operated. Hangars registered as historic places include Qantas Longreach and Connellan Airways hangar in the Northern Territory.

Fire and rescue services are also critical to safe operations and are nationally supervised. Other services affecting secure operations, which include fuel supplies and general support services, are also carefully controlled.



Figure 20: Airservices Australia water rescue vehicle (National Library of Australia)

In general terms, the preservation of material associated with aviation maintenance and support services appears to be quite limited, and there may be significant gaps in holdings. QANTAS holds a substantial amount of historic servicing gear, and the Airways Museum at Essendon holds equipment used for the maintenance of aviation related electronic systems. At present these collections have limited documentation, and little information is available to the public. Various ground vehicles, such as air stairs, ground tractors, petrol tankers and fire equipment are individually held by museums across the country.

### Museums, Collections & Archives

---

National Archives of Australia, ACT	Documents, papers and other documentary ephemera regarding aviation safety such as manuals, guidelines and legislative papers regarding civil aviation safety.
National Library of Australia, ACT	Documents, photographs and other ephemera that relates to aviation safety such as manuals, political cartoons and pictures such as aviation fire brigades and ANA's Southern Cloud.
National Museum of Australia, ACT	John Boddington and Frank Proust Collection holds material from the Southern Cloud air disaster in 1931. Operated by Australian National Airways it crashed into the Snowy Mountains enroute to Melbourne. The collection includes photographs and objects such as the dashboard clock and the tachometer. The Sir Roland Wilson collection consists of a damaged propeller blade from Royal Australian Air Force (RAAF) Lockheed Hudson aircraft A1697 that crashed at Canberra on 13 August 1940 killing all on board.
Powerhouse Sydney, NSW	A collection of material from the wreckage of the Southern Cloud that crashed into the Snowy Mountains in 1931.

---

Qantas Heritage Collection, NSW	A collection of historic servicing gear and ephemera regarding safety on Qantas flights.
Queensland State Archives, QLD	A small collection of photographs depicting a Civil aviation safety display at the Queensland Industrial fair.
South Australia Aviation Museum, SA	A fire tender used in aviation rescue and safety and a fire water bombing display.
Airways Museum, VIC	Significant collection of documents and objects relating to aviation rescue and firefighting. It has in its collection manuals and other documents relating to aviation safety. A small collection of wreckage from the Amana Skymaster DC4 air disaster of 1950.
Museum Victoria, VIC	Collection of aviation safety gear such as helmets, goggles and parachute used by early aviators.
Beverley Aeronautical Museum and Information Centre, WA	Nose wheel from the 1950 Amana Skymaster DC4 which is part of a memorial to that disaster.

## Places

---

Air Disaster Memorial, Pialligo Av, Oaks Estate, ACT	The site of the 1940s air disaster that killed several of Prime Minister Menzies wartime cabinet.
Southern Cloud Memorial, Sharp Street, Cooma NSW	A memorial dedicated to Australia's first major air disaster. A significant air disaster that was the impetus to the introduction of radio into all aircraft to improve its safety.
Conellan Airways Hangar, NT	Occupied by the Central Australian Aviation Museum, it was the location and operating base of Conellan Airways.
Qantas Hangar, Longreach, QLD	The site of Qantas's first hangar. Currently on the National Heritage List and is leased by QFOM.
Kyeema Memorial and environs, 9 Eyre Road (off Ridge Road), Mt Dandenong, VIC	The Douglas DC – 2 Kyeema crashed into Mt. Dandenong in 1938. This resulted in the introduction of regulation to ensure the safety of subsequent flights.
Van Emmerick Air Crash - Site of, Hawkstone Peak, WA	The crash site of a Royal Flying Doctors Service flight in 1956 that resulted in the death of all its occupants.



**People & Organisations**

Airservices Australia	A statutory authority which provides safe, secure, efficient and environmentally responsible air traffic management and related services to the aviation industry.
CASA	The government statutory body that is responsible for regulating civil aviation.

### **2.1.11 Security**

It was not until after WW2 that the security of aircraft and the application of security measures to passengers became a serious issue. In 1947 an international convention came into effect that set out basic rules for aircraft safety and the governance of airspace<sup>25</sup>. This convention recognised that the international system was vulnerable to abuse. Archival regulatory information on this topic is readily available both nationally and internationally. In Australia, it took until 1960 before a domestic airliner was hijacked in flight<sup>26</sup>. Today, Australia's comprehensive domestic air system is freely connected to an equally widespread international network. This complex system is vulnerable at many points, and security is now a critical issue and likely to remain so. Today both passengers and aircraft are subject to a series of checks including search and evaluation via complex equipment such as X-ray, metal and explosives detection and associated measures such as sniffer dogs.

While substantial information on security would undoubtedly be available via the Federal and state government organisations involved, there is clearly an opportunity to do much more on this theme. Little of the physical equipment associated with security measures has been preserved, and at present no collecting organisation appears to address this issue. Clearly the preservation of key items and documentation would be an important part of capturing the experience of air travel in the early 21<sup>st</sup> century.



Figure 21: News clipping of the 1960 TAA hijacking (Herald Sun)

Successful interpretation of this experience would necessarily cover the intrusive aspects of the experience, but may also feature more engaging aspects of the experience such as the use of sniffer dogs. A digital portal could provide audio visual and other material that may particularly appeal to children and school groups.

**Museums, Collections & Archives**

---

National Archives of Australia, ACT	Parliamentary papers and other documents such as policy documents and minutes of committee regarding aviation security.
--	---

**People & Organisations**

---

CASA	The government statutory body that is responsible for regulating civil aviation.
------	---

### **2.1.12 Tourism and leisure**

Progressive developments in aviation meant that by the 1960s ordinary Australians could fly for personal and recreational reasons. During the late 1950s and early 1960s the major airlines introduced a new generation of pressurised turbo-prop aircraft on domestic routes and the cost of flights within Australia became relatively cheap. Increasing numbers of Australian citizens began to explore their own country by air, and younger people began to travel overseas giving rise to cultural phenomena such as the “gap year”. This process was accelerated from the 1970s by the introduction of pure jet aircraft, and particularly wide-bodied mass transit machines.

A number of turbo-prop airliners are currently preserved. Queensland Air Museum and the SAAM both have examples of the Fokker Friendship, the latter with an interesting experimental CSIRO history. The Australian National Aviation Museum (ANAM) at Moorabbin, Victoria, has a former TAA Vickers Viscount. The QANTAS Museum in Longreach is assembling a substantial collection of airliners that includes examples of commuter types and international long haul machines like the Boeing 747. Documentary material such as travel posters and flight related memorabilia is well represented in museums, archives, art galleries and private collections.



Figure 22: TAA advertising 1950s (National Library of Australia)

Other technological developments brought individual flight within the reach of the general public. In the pre-WW2 period, many enthusiasts experimented with building basic gliders and even early home-built powered aircraft like the Mignet Flying Flea<sup>27</sup>. Two generations later, inexpensive flight could be achieved using hang-gliders or powered parachutes, while a wide range of kit form ultra-light aircraft became available. Gliding, which became popular before WW2, continues to be one of the primary ways in which Australians learn to fly. There are a wide range of enthusiast organisations that service these interests and many have an online presence. The Royal Australian Air Force Association Museum (RAAFA) in WA has an original Flying Flea. Other significant artefacts survive in collections like those held

by the ANAM, the Gliding Museum at Bacchus Marsh and the AAM in Bankstown, NSW.



Figure 23: Rhon Ranger Glider (Australian Gliding Museum)

Another important area where sophisticated aviation technology is widely used for recreation is skydiving, and other sport applications of parachutes including base jumping. Emerging from the development of the parachute as a life-saving measure for aircrew, and as a means of putting troops down on a specific target, the recreational use of the parachute has greatly expanded in recent decades. It is understood that there is little preserved material relating to this topic.

Looking forward, most Australians already have access to small remotely controlled flying machines. The technology that a few years ago produced miniature model helicopters – now combined with increasingly sophisticated electronics - is delivering practical drones with the capacity to relay visual information and to carry small loads. These represent a new wave in the engagement of ordinary Australians in flight. What effects these developments will have in the long term is emerging as a major question. This is an area that could be addressed by collecting institutions within Australia, to capture both the rapid transition in the equipment and the accompanying social implications of this developing technology.

Archival material associated with air travel and its social impact can be accessed through the on-line sites of museums and galleries around the country. The actual equipment of sport/leisure flying is probably only thinly represented in museum collections, but much likely remains in private hands.

### **Museums, Collections & Archives**

---

National Archives Australia, ACT	Documents and other ephemera regarding air travel and tourism such as insurance policies for Members of Parliament and excess baggage forms.
National Film Sound Archive, ACT	A collection of audio visual material from a variety of sources such as news and advertisement regarding air travel and tourism such as TAA and Ansett TV advertisements.
National Library of Australia, ACT	The Jan Phillips and the Australian National Airlines Collections has material regarding air travel and tourism which includes signage, uniforms and other memorabilia.
Powerhouse Sydney, NSW	Memorabilia and ephemera relating to air travel and tourism such as air tickets, philatelic material and models of civil aircraft.
State Library NSW	A collection of manuscripts, glass slides and photographs relating to tourism and travel which includes photographs of social events relating to aviation and travel fairs.
The Qantas Heritage Collection, NSW	Qantas is one of the oldest airlines in Australia and has become Australia's national carrier. Its collection contains memorabilia, historical objects, advertising paraphernalia and documents about Qantas and other Australian airlines.



Qantas Founder Outback Museum, QLD	A museum dedicated to the Qantas founder and the early years of Qantas, the museum has a collection of object relating to air travel and tourism. It also has a number of aircraft that have been used in civil aviation.
South Australian Aviation Museum, SA	Several aircraft that are used in civil and leisure aviation such as the Gipsy Moth, Fokker F27 and Terrafly ultralight craft.
Australian Gliding Museum, VIC	A collection of gliders that are used in leisure aviation such as the Flying Plank and the Coogee.
Australian National Aviation Museum, VIC	A number of civilian aircraft such as the Vickers Viscount, Douglas DC2 & 3 and Gipsy Moths.
Museums Victoria, VIC	A collection of material regarding air travel and tourism such as advertisement for air travel such as information brochures, advertisement and photographs.
TAA Museum, VIC	Museum focusing on the Trans-Australia Airlines and Australian Airlines. It has uniforms, advertisement and historical documents relating to TAA and other Australian airlines.
The Sir Reginald Ansett Transport Museum, VIC	Museum devoted to Ansett and its founder which has a great impact on Hamilton and the region in its early days. Has memorabilia, records and aircraft from the early days of Ansett and its role in air travel and tourism in the mid-20 <sup>th</sup> century.

#### Places

Sydney (Kingsford Smith) Airport Group Airport Dr , Sydney Airport, NSW	One of Australia's major airports, it has been in existence since 1921 and has been an important for air travel.
---	--

Camden Airport, Airport Rd Camden, NSW	One of the first airports in the Australia, it was also the site of a training school in WWII and its currently used by leisure and commercial aircraft.
QANTAS Hangar Longreach, Landsborough Hwy, Longreach, QLD	This nationally listed site is the place where Qantas had its operations providing services to the region and eventually nationwide.
Archerfield Airport, Beatty Rd, Archerfield, QLD	Site of one of Australia's first air control towers and is still in use today.
Barloweerie Aerodrome, Meeberrie-Mt Wittenoom Rd Murchison, WA	An important site to the local community that provides essential services such as commercial air and mail services.

### People & Organisations

Ansett	A major airline in Australia up till the mid-1990s, material regarding Ansett is distributed across the country and can be found in major collecting institutes such as the National Museum of Australia, National Film and Sound Archive and also the Sir Reginald Ansett Museum in Victoria.
Qantas	One of the most easily recognizable airlines domestically and abroad, Qantas is also one of the oldest continuing airlines in Australia. Material regarding Qantas can be found across the nation from place such as the Queensland Museum and Qantas Founders Outback Museum to the National Museum of Australia and the Australian War Memorial.
TAA	One of the major airlines in Australia, material regarding TAA can be found in numerous collections and museum around Australia such as National Museum of Australia, National Library of Australia, Museum Victoria, and

---

Qantas Heritage Collection and in the TAA  
Museum in Victoria.

### 2.1.13 Training

As soon as aviation in Australia began to progress beyond the initial pioneer efforts, organised training schemes for both air and technical personnel began to meet the demands of the new technologies associated with flight. During WW1 there were several pilot training programs within Australia, and in the years immediately after the war a number of civilian schools were established, particularly in the eastern states. Locations such as Point Cook in Victoria and Richmond in NSW are recognised as listed sites.

In the years before WW2 increasing interest in aviation drove a corresponding increase in organisations that could train pilots. These included gliding clubs, aero clubs and specialist schools. During this period the first flight simulators, made by the US firm Sperry, arrived in the country. Simulators of increasing sophistication continue to be a key part of training infrastructure. Most major Australian airports and servicing facilities play host to training programs.



Figure 24: Link Trainer ( Museum Victoria)

Continuing technological development, increased security requirements and safety continue to drive training programs across the aviation industry. These can be loosely divided into those that deal with technical issues and those that deal with the management of people, in particular a community that is used to travelling by air and does so in increasing numbers.

Material relating to training survives in archival form, through training schedules and procedural manuals. These can be found in sources ranging from archives to airline-based collections. Undoubtedly a great deal of material is also in private hands. Technological items like simulators can be found in most major collections, including the ANAM, the Queensland Air Museum, the RAAF Museum and others. More advanced simulators will probably find their way into collections, but are understood to be not currently well represented. Many examples of partially sectioned engines and aircraft components have made their way from training establishments into preservation.

Civilian aviation schools at Narromine, UNSW, Newcastle and other locations and organisations may hold archive material covering their lengthy histories and teaching programs. The same may be true for universities and colleges teaching topics such as flight management and maintenance of electronic and maintenance systems. Many people active in the industry also train through defence programs, and then transition to the civilian sphere.



Figure 25: Airservices Australia Training (National Library of Australia)

Many Australian children have been involved in organisations like the Australian Air League (established in 1934), and the Air Training Corps, which operates today as the Australian Air Force Cadets. These have fostered the development of basic aircraft knowledge, and an appreciation of Australian aviation. The organisations have also assisted in arranging access to flight experience or flight training. Scouts Australia, for instance, provides aviation related badge-work programs, which are supported by activities centres at places such as Camden Airport, which is in itself an historic site. Documents, images and artefacts relating to these programs may be of interest to young people and school groups and can be well-represented via a digital portal.

In terms of flight training, numerous aircraft widely employed for training purposes have been preserved. These include gliders (Bacchus Marsh, Victoria) and widely used training types such as the Tiger Moth and Cessna aircraft. Almost all aviation museums in Australia preserve at least one aircraft with substantial civilian training connections.

Many of the museums discussed have an on-line presence, and could be linked via a digital portal. Other material in private hands remains inaccessible and possibly in danger of being lost.

### Museums, Collections & Archives

National Archives of Australia, ACT	Documents, papers and archival material relating to training in aviation such as photographs of the Fire Service Training School established by the Department of Civil Aviation at Kingsford Smith Airport
National Library of Australia, ACT	Documents, books and other archival material relating to training in aviation such as photographs and manuals that records training given to civil aviation personnel at airport such as Camden and Brisbane. Oral histories relating to individuals involved in the training of pilots and other aviation personnel.
Narromine Aviation Museum, NSW	The Narromine Aviation Museum is one the site of Australia's oldest aero club which is still active and continues to be a training ground for amateur aviators.
The Qantas Heritage Collection, NSW	Historic items and memorabilia such as training manuals and maps.
Caboolture Warplane Museum, QLD	Link Trainer that was the most commonly used flight simulators in Australia.
South Australian Aviation Museum, SA	Several trainer and flight simulators such as Link Trainer A13-37, RAAF Air Recruitment Tester and Piper PA-28 Cherokee procedure trainer.
Airways Museum, VIC	A significant technology based collection and accompanying documentary ephemera, the Airways Museum has several objects and documents related to aviation training such as tone oscillators for Morse training, Gulfstream

	Cockpit mock-up and meteorological instruments.
Australian Glider Museum, VIC	The Australian Glider Museum has a collection of historic gliders that have been used for leisure aviation in Australia. Some examples include Rhon Ranger and Skylark 4.

## Places

Camden Airport, Airport Rd, Camden, NSW	Camden Airport has been around since WWII and has been the centre of RAAF training since. Today used for light aircraft flying training, private flying, sports aviation, gliding and ballooning. Also home to the Australian Air League training school.
RAAF Base Richmond McNamarra Av , Richmond RAAF Base, NSW	Was the site of an Aviation School to train pilots in 1915 for WWI.
Point Cook Air Base, Aviation Rd, Point Cook, VIC	One of Australia's first airbases, Point Cook was home to the Central Flying School which trained many pilots for WWI. Subsequently it has been the site for important flight such as the intercontinental flight to Darwin in 1920.
Former Ballarat RAAF Base 1 Airport Access Road, Mitchell Park, Ballarat, VIC	Was a training school for Wireless Air Gunners under the Empire Air Training Scheme during WWII.

## People & Organization

Australian Air Force Cadets (Air Training Corp)	A federally funded organization for youths who are interested in the air force. Activities include
--	--



---

	gliding and powered air experiences, aero-modelling and air cadet exchanges.
Australian Air League	A civilian operated aviation organisation that cater to youths to inspire the spirit of aviation in them. Members are educated in various aspects of aviation such as navigation, meteorology, radar and theory of flying.
School of Aviation, University of NSW	Located in Sydney, the School of Aviation began in 1995 and offers undergraduate and postgraduate courses in aviation.

## 3.0 Stage Two

### Key Findings

This section of the report presents key findings from the second stage of research for the Connecting the Nation project. These findings are derived from:

- Analysis of an online survey of aviation heritage stakeholders;
- Analysis of heritage and conservation issues emerging from research into the major themes in aviation heritage and sources of aviation heritage; and
- Analysis of priorities, issues and opportunities for the digital portal development.

This analysis provided the foundation for the focus, design and content of the digital portal. Priority areas have been identified for further research, the functionality of the portal design and the nature of its content.

In addition to research and analysis, community consultation is an important aspect of values-based heritage management. Relevant stakeholders and community groups have been consulted to ensure their values are reflected and represented in this project.

As well as aiming to identify private collections and sources of oral history, the survey attempted to explore how and why aspects of aviation heritage are valued and by whom. Related to questions of value, were questions of what people felt was at risk of loss and/or deterioration, a question that also highlights how heritage value is attributed.

Oral histories ranked highly in all indices for both risk and value, reflecting the fact that current elders in the industry, with memories from the 1940s, 50s and 60s, are seen as unique sources of historical experiences and memories which are not captured in collections of material heritage.

The analysis presented in this report reveals a number of key issues and priorities for heritage conservation, research and interpretation:

- The history and heritage of organisations such as airlines, particularly those now no longer operating but which are seen as having particular social impact and importance;
- A strong focus on the communities built up around organisations, including past airlines and government bodies such as the Department of Civil Aviation;

- Conservation challenges around obsolete technology and aviation infrastructure;
- The need to collect oral histories before they are lost;
- The importance of archives, photographs and the other archival sources for aviation history and heritage, and the need for digitization and conservation support for the groups that care for these collections.

The survey analysis also points to areas that stakeholders feel have been neglected or under recognized or researched:

- The history and heritage of aerodromes, airports, and airlines;
- Australian manufacturing and design;
- Aviation oral histories;
- The history of aviation training;
- The history of government development and regulation of aviation in Australia, particularly in the area of safety.

The portal design thus has the opportunity to respond to these key issues and priorities through (for instance):

- Providing both a repository and public access interface for oral histories;
- Connecting these oral histories (digitally) to related sources of heritage including places, collections and archives;
- Presenting the results of the research carried out for the present study;
- Republishing digitised collections with the permission of owners so that they can be discoverable by the public;
- Publishing newly digitised resources, such as the annual reports of Airservices and its earlier government predecessors.

### **3.1 Structure and Methodology**

Stage Two will focus on determining the relative heritage significance and values of the themes and the related sources of aviation heritage. Areas of priority for research, conservation, interpretation and presentation to the public will also be determined. These areas will be identified through analysis of several issues:

- Identification of items at risk from deterioration, neglect, loss, disaster, mismanagement, etc.

- Gaps in knowledge that represent under-recognised and under-researched areas in collections or themes.
- Collections or themes that have a high interpretive value.
- Areas or collections with high or outstanding heritage values.

Analysis of these issues will be done using methodologies found in existing heritage management policies, frameworks, guides and processes. Current national and state heritage legislation will also be referred to for criteria and thresholds. Below are some of the policies and documents that will be used for Stage Two.

1. The Australia ICOMOS Burra Charter<sup>28</sup>: Guidelines and procedures that guide the conservation of Australian heritage places. Adopted by many state heritage councils and the Australian Heritage Council.
2. Environment Protection and Biodiversity Conservation Act 1999<sup>29</sup>: The EPBC Act is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places. The Commonwealth and National Heritage List are governed by this Act.
3. Ask First<sup>30</sup>: A guide for consultation with Indigenous stakeholders to preserve indigenous heritage values and managing the impact on indigenous heritage.
4. Significance 2.0<sup>31</sup>: Is a guide to determine the significance of an object or collection by thorough research and analysis, and by assessment against a standard set of criteria.

Priority areas will be identified for further investigation and incorporation into the portal design and content development. In addition to research and analysis, community consultation is an important aspect of values-based heritage management. Relevant stakeholders and community groups will be consulted to ensure their values are reflected and represented in this study. With guidance from

the Steering Committee, relevant stakeholders will be identified, interviews, face to face or through other communication modes, will be conducted to determine what values and significance they attribute to aspects of aviation heritage. Oral history collection has been identified already as a priority for Air services. This stage of the project will undertake a number of high priority oral histories and also facilitate the collection of further material by interested stakeholders.

## **4.0 Discussion of Survey Findings**

As part of the scoping study of aviation heritage in Australia, an online survey was developed and disseminated to gather responses from private individuals, organisations, collecting institutions and any other interested stakeholders. The survey aimed to aid in the identification of sources of aviation heritage and understand more about how they are valued.

The survey was developed using the Survey Monkey online research tool. It used both closed and open-ended questions and responses were analysed using a range of quantitative and qualitative methods. The qualitative data analysis program NVivo was used to code the text derived from the open-ended responses to reveal emergent categories and concepts. These included straightforward categories such as references to particular identities, places, events and collections, but also included more subjective references to concepts such as transition, reminiscence and the quality of past experiences. Coding facilitates qualitative data analysis, and also provides the opportunity to highlight latent ideas, themes and emotions within the survey responses.

The survey went live on July 7<sup>th</sup> 2014 and links to the survey were disseminated to most museums, collections, archives and other related organisations and interest groups. The survey was also disseminated to current members of the aviation industry through Airservices Australia, the Civil Aviation Safety Authority (CASA), several aviation publications and also through the Waypoint industry forum which took place at the Canberra Convention Centre on September 4<sup>th</sup> 2014.

### **4.1 Question 1**

As of December 8<sup>th</sup> 2014, there were 113 respondents to the survey representing a wide demographic of people and organisations ranging from heritage institutions to private individuals. All states and territories were represented with a high number of respondents coming from the eastern states. Queensland, New South

Wales, Victoria and the Australian Capital Territory made up over 70% of respondents with Victoria contributing the highest number of respondents (Fig. 1).

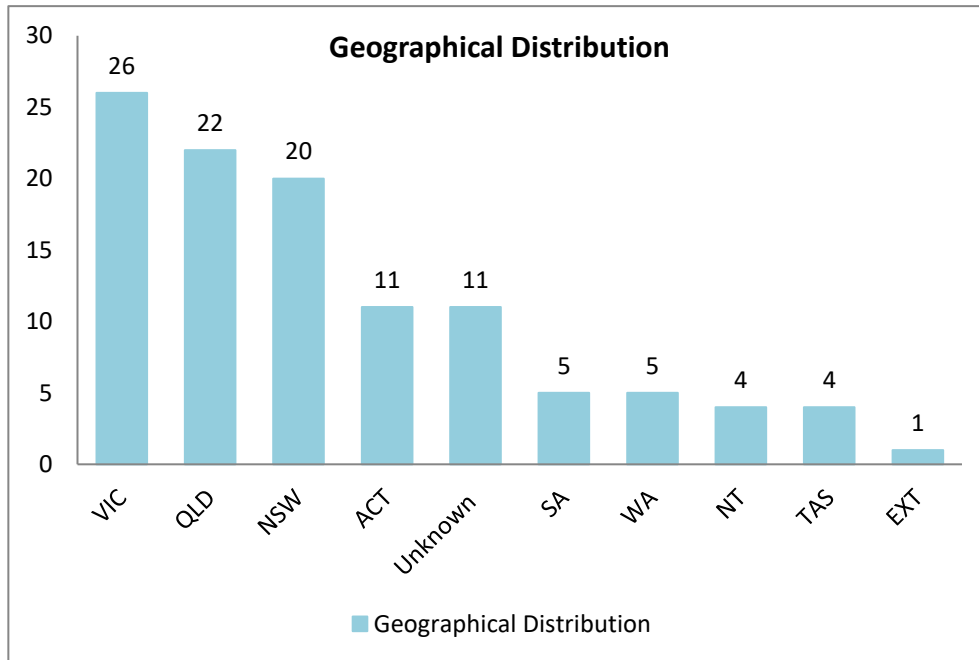


Figure 1: Chart showing the number of respondents from each state and territory.

Respondents came from diverse backgrounds: from representing educational institutions to private individuals with an interest in aviation heritage. Respondents were classified into four categories:

- *Heritage Organisations*: These are organisations, the core business of which is the care, conservation and interpretation of heritage materials. These institutes include those that are devoted solely to aviation and also those that contain aviation material;
- *Non-Heritage Organisations*: These are organisations where the core business is not heritage related;
- *Private Individuals*: Individuals who did not identify with any organisation or institution were classified in this group;
- *Unknown*: Respondents whose affiliation cannot be ascertained or who did not give details regarding their affiliation.

The classifications revealed that 42% of respondents were from non-heritage organisations, while 31% came from heritage organisations such as historical

societies and museums, which represent 35 of the 58 heritage organizations targeted (Fig. 2).

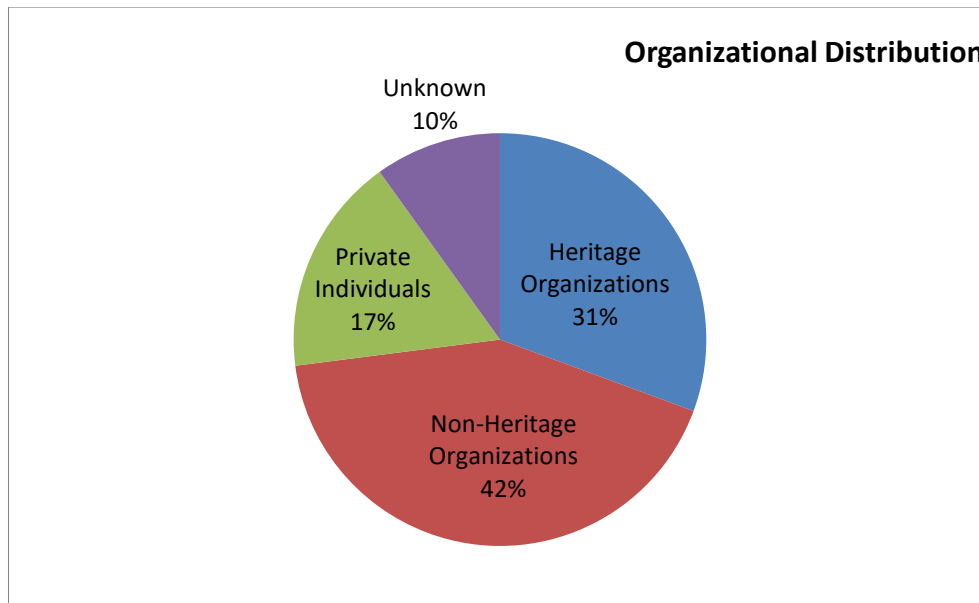


Figure 2: Organizational breakdown of respondents.

A further breakdown of the numbers from non-heritage organisations reveals four major groups of respondents (Fig. 3), the majority were from Airservices Australia, the Civil Aviation Safety Authority (CASA), and aviation related organisations such as aerospace engineering companies and gliding clubs, while a small number were from non-aviation organisations such as schools.

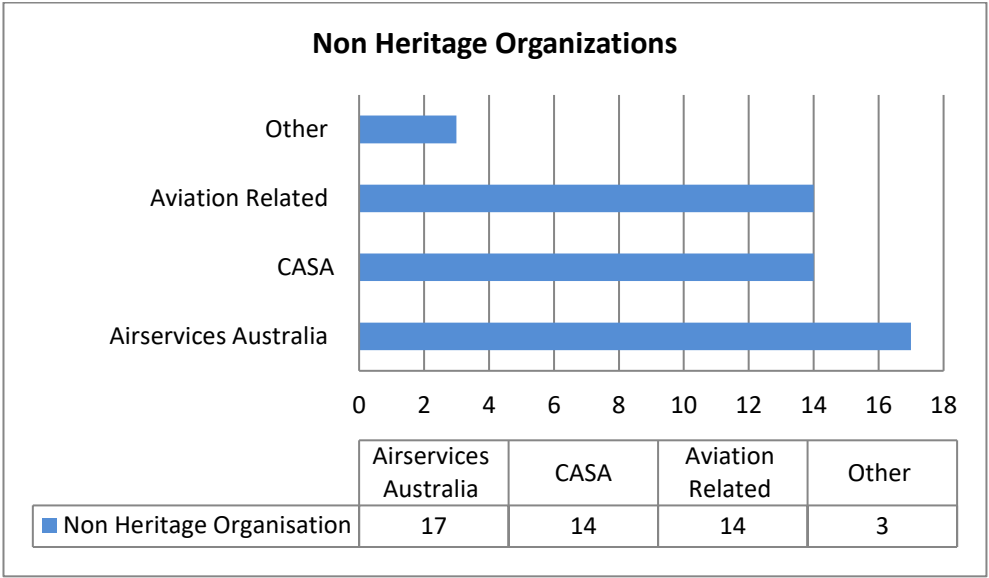


Figure 3: Distribution of non-heritage organisations.

These data demonstrate that the survey successfully reached the relevant stakeholder groups targeted by the project and that the views of a varied audience from different backgrounds with interest and experience in aviation and its heritage were represented.



## 4.2 Question 2 and 3

In response to Question 2, *"Are you happy to be contacted for further information?"* 97.3% were happy to be contacted for further information regarding their aviation heritage knowledge.

### **Breakdown**

<b>Are you happy to be contacted for further information?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
YES	97.3%	109
NO	2.7%	3
<b>Answered question</b>		<b>112</b>
<b>Skipped question</b>		<b>1</b>

Question 3 *"Would you like us to keep you informed about the progress of the project?"* 96% indicated they would like to be kept informed about the progress of the project.

### **Breakdown**

<b>Would you like us to keep you informed about the progress of the project?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
YES	95.5%	106
NO	4.5%	5
<b>Answered question</b>		<b>111</b>
<b>Skipped question</b>		<b>2</b>

Question 2 and 3 indicated an overwhelming response in support of the project and also the willingness of individuals and organisation to be involved in *Connecting the Nation*.

### 4.3 Question 4

In reference to Question 4, *“What is your role in relation to Australia’s aviation heritage? Please tick all that are applicable.”* 52% of the respondents said that they work or volunteer at an organisation that holds aviation related heritage material.

It is also of note that 41.1% of respondents indicated that they possess a personal collection of aviation heritage (Fig. 4), this suggests that aviation heritage is avidly collected by enthusiasts who will have diverse ideas about what items are significant and collectable, and why. The data also suggests that respondents’ involvement in aviation heritage goes beyond their work or volunteering to personal connections with aviation heritage through their own private collections.

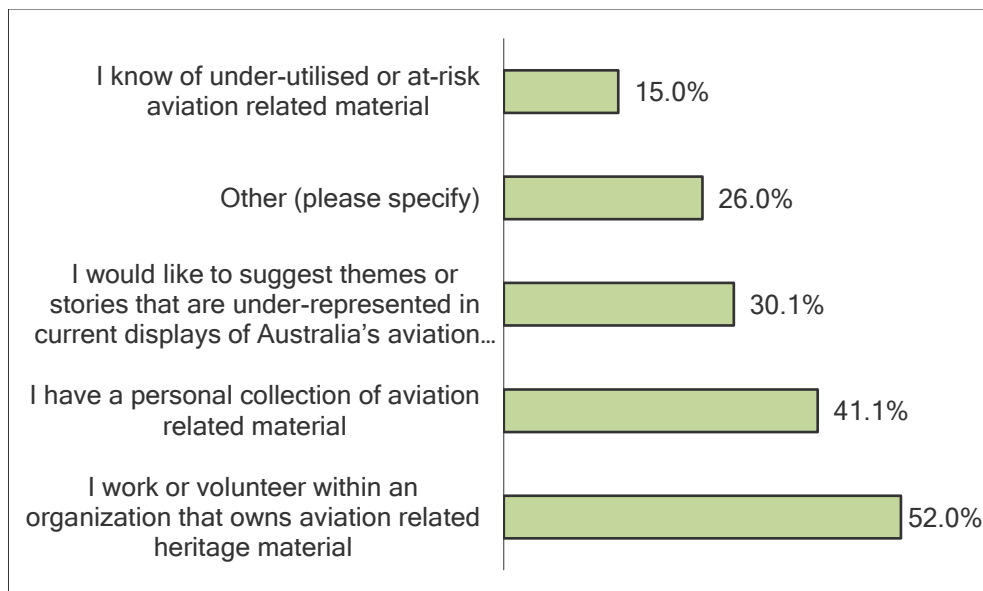


Figure 4: Roles in relation to aviation heritage.

#### Breakdown

What is your role in relation to Australia’s aviation heritage? Please tick all that are applicable.		
Answer Options	Response Percent	Response Count
I know of under-utilised or at-risk aviation related material	15.0%	11
Other (please specify)	26.0%	19

## Connecting the Nation: Australia's Aviation Heritage

I would like to suggest themes or stories that are under-represented in current displays of Australia's aviation heritage	30.1%	22
I have a personal collection of aviation related material	41.1%	30
I work or volunteer within an organization that owns aviation related heritage material	52.0%	38
<b>Answered question</b>		<b>73</b>
<b>Skipped question</b>		<b>40</b>

26.0% of respondents chose the category 'Other' for their role in aviation heritage. There was a free text section for respondents to elaborate here and most chose to give more information about their roles and interests, ranging from specific information about aviation objects and personal collections, to associations with the aviation industry.

#### 4.4 Question 5

In reference to Question 5, *“From your perspective what are the most important aviation places, items or stories that you or your organization cares for? Please describe some of them below and tell us why you think they are important”*.

53.9% answered this question while 46.1% skipped this question. Analysis of the responses reveals some patterns in the types of heritage that respondents considered to be the most important. Most respondents identified moveable cultural heritage items or objects as the most important aviation heritage items that they cared for.

The different types of aviation heritage identified or mentioned were classified into the categories shown below, along with the frequency that they were referenced.

	<b>Classifying codes for types of heritage</b>	<b>Frequency referenced</b>
1	Objects	154
2	Organizations	86
3	Places and Sites including infrastructure	82
4	Time Periods	60
5	People/Communities	44
6	Historical Themes	41

These data indicate that tangible aviation heritage is seen as most important to respondents. This importance is also reflected in the large number of references that sites and places received. This suggests that, for most respondents, aviation heritage is largely vested in aviation objects and in memories and narratives of the role that aviation plays in terms of connecting people and communities through air travel. Aviation organizations were referenced 86 times, which points to the significance of the contributions made by the large number of Australian aviation companies and organizations to aviation history. The significance of aviation businesses and companies (often now defunct) to stakeholders is a striking feature which deserves further study. These companies have had strong communities of interest formed around their memory.

The time period or 'era' in which aviation has played a key role was also a recurring theme in responses. This reflects the view of the respondents that aviation played a particularly significant role in several historic time periods.

Another recurring theme is that of individuals and communities, suggesting that particular individuals and/or communities played a prominent role in aviation. Historical themes and developments in aviation were also commonly identified in the responses. These themes reflect the view that different milestones in the development of aviation are important to concepts of aviation heritage. The themes are further analysed in subsequent sections.

## Objects

Types of heritage classified under this category included references to all moveable items, including aircraft and related technologies, documents, archives, photographs, and general collections that were not elaborated on in the survey.

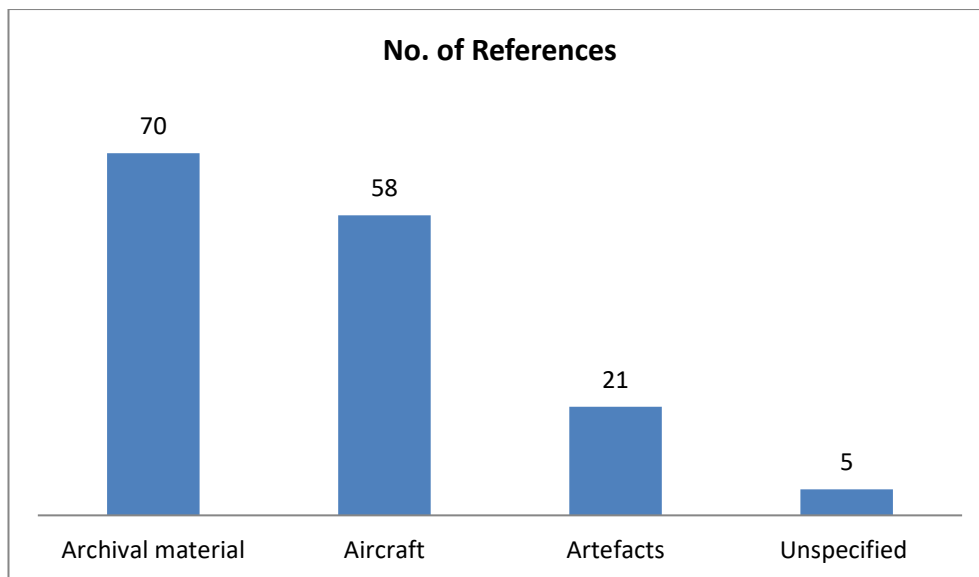


Figure 5: Sub-categories of objects, respondents identified as important.

Archival material, which includes documents, archives, photographs, maps and ephemera, was the most frequently mentioned type of object that respondents considered to be important.

Archival material provides the documentary evidence on which interpretations of heritage and history are formed and it is interesting to note that respondents mention this type of heritage more than aircraft. This suggests that respondents are concerned about the preservation of the documentary sources for aviation history.

***Responses re Archival Material from Q.5***

- Physical and digital material;
- Bob Norman and Ron Entsch's books;
- Archival Material, Ansett Airlines;
- Archival Material;
- Aviation Memorabilia;
- Air Traffic Control Documentation;
- In-house magazines in ATC;
- Material from DCA, Dept of Transport/Aviation, CAA et al;
- We have do have research material - books and a scrapbook donated by his family consisting of mainly newspaper articles;
- Photographs, objects, documents & ephemera relating to Holyman Airways;
- Photos of old senior groundsman at halls creek;
- Old articles how the 13/31 club was formed;
- Technical books and manuals relating to antique aircraft;
- DCA/DoA/CAA produced Airport Engineering plans/drawings;
- Aviation technical reference material;
- For training on now outdated navigation aids etc.;
- Old manuals;
- Aviation School documents 1916-17;
- State Aviation School documents 1918-19;
- Architectural plans/photos of disused/replaced airports;
- Posters and advertisements for early commercial airlines;
- Photographic material relating to roads and transport, including aviation for the period 1913-2001;
- Shell General Aviation Map of Australia with manuscript additions and typescript index of Australian Air Services, 1938;
- Archive of 'Flight Safety Australia' (FSA)magazines/articles;
- Archive of FSA's predecessor, 'Aviation Safety Digest';
- Archive of safety promotion products;
- Archive of safety promotion videos (late 1990s-present);
- Manuscripts of Charles Daniel Pratt - MS 9357;
- Posters Bush Pilots;
- Old charts;
- Out of print books;
- Local clippings file;
- Internal training film (none of which we can afford to digitise due to cost);

- E. A. Crome Collection of Pamphlets on Aeronautical Subjects (16 pamphlets, 1784-1928);
- E.A. Crome Collection of Qantas Labels and Stickers;
- Horrie Miller Aviation Photograph Collection (over 400 photos, 1906 to 1984);
- Norman Ellison Collection of Australian 1920s aviation search and rescue activities, aerial views and people (c.140 negs and photos, 1914-1970);
- Aviation records, 1928-1953 (various items of historical interest);
- A collection of approximately 1,500 aerial photographs of Melbourne and Victoria;
- 2,206 images relating to aviation history;
- Manuscripts of Shaw Ross Engineering and Aviation MS 13587;
- Manuscripts of John Yeates Mann MS 13553;
- Manuscripts of Ronald Wilson Cumming MS 13551;
- Manuscripts of Eric Douglas MS 15191;
- Manuscripts of Don Charlwood MS 15405;
- Photographs and records ;
- Original photos of aviation heritage;
- Internal library database;
- Digitized photographs;
- Huge library of photographs / film documenting;
- We have so far scanned over 12,000 slides relating to all aspects of the two airlines;
- Have a large collection of training aids manufactured by the TAA;
- Archive - rare plans, documents and manuals;
- DCA Archive material from 1921 including the Johnson and Bradfield papers;
- The Dr Bill Bradfield archive;
- The former Department of Civil Aviation image collection;
- Original Qantas negatives, photos and films;
- Qantas magazines and newspapers 1920s-current;
- Documents and archives of Qantas operations since 1920;
- Thousands of Aviation Images, digitally restored, some are only held by the museum

The types of aircraft that have been identified as important include significant aircraft that are associated with an event or milestone in aviation history or those that have connections with a particular organization or individual. Aircraft represent

the central motif of aviation heritage and the large proportion of references reflects this importance.

***Responses re Aircraft from Q.5***

- Swearingen Metro II (VH- BPV) and a Cessna 402 (VH- DZY);
- Bushies DC3 (VH- MAL);
- Ex-Bushies/AQ aircraft;
- Cathays first aircraft;
- Cessna Ag Wagon - aerial spraying aircraft;
- Miss Flinders - Significant aircraft;
- De Havilland D.H.114 Heron aircraft operated by Airlines of Tasmania from 1985 to 1994;
- Avro-Anson Aircraft;
- Southern Cross;
- Skycycle - constructed between 1988 and 1993 by Burnie TAFE. Broke record for longest human-powered flight;
- USAF B-52G bomber - one of only 3 on display outside of the continental USA;
- Mitsubishi Zero Japanese fighter plane from the air war over Dawin in WW2;
- Retired RAAF F-111 fighter bomber;
- RAAF Sabre fighter jet;
- RAAF Mirage 1110 fighter jet;
- Replica Mk VIII RAAF Spitfire WW2 fighter from WW2;
- RAN Wessex helicopter - flew rescue missions in Darwin post Cyclone Tracy in 1974/5;
- USAAF B-25D Mitchell bomber -one of few remaining D models that saw active war service;
- De Havilland Dove passenger aircraft - flew the last mission out of East Timor prior to the Indonesian incursion;
- Beet Hinkler's aircraft;
- DH60 aircraft;
- RV4 aircraft;
- DH 82a Tiger Moth;
- DHC1 Chipmunk;
- L-19 Birdog;
- AT6 Harvard;
- CA-18 Mustang;
- MkIX Spitfire;



- Hawker Hurricane;
- P40-E Kittyhawk;
- A37-B Dragonfly;
- Kookaburra;
- CAC Wirraway A20-10 Oldest surviving CAC Aircraft;
- TAA's first aircraft DC-3 Reg. VH-AES "Hawdon";
- DAP Beaufort A9-13 Oldest Surviving Beaufort in world;
- DAP Beaufighter A8-328 one of five remaining in world;
- Fokker Oil Tank possibly Red Baron's Aircraft WW1;
- PBV Catalina - last surviving Black Cat;
- BE2A Wings WW1;
- Replica of first Qantas Avro 504 aircraft;
- Sir Fergus McMaster scrapbooks 1919-1945;
- Restoration of an ex RAAF B24 Liberator aircraft;
- Restoration to flying condition of Australian Built DAP Bristol Beaufort No. A9-141;
- Fokker Universal aircraft-first aircraft;
- WWII Avro Anson aircraft under restoration to taxiing status;
- Remains of Westland Widgeon "Kookaburra" aircraft from Anderson & Hitchcock;
- Remains of Wackett aircraft from James Knight January 1962;
- Remains of "Balanced" propeller;
- DH 114 "Heron" aircraft from Connellan Airways ex VH-CLW;
- Ex Aero Medical "Dove" aircraft ex VH-DHH;
- DC3 (C47) aircraft ex Brain & Brown freight Bass Straight run, ex VH-BAA;
- ES52 Glider ex gliding club, Design & construction E Schnider Australia;
- "Bunny 2", a Cessna Birdog built from three wrecks during the Vietnam war by Australian fitters and test flown serviceable and returned to Australia;
- A2-649, Australia's most deployed Huey;
- The Millingimbi Ghost, a WW2 Boomerang Australian Designed and built Fighter, restored to as new condition.

Other types of artefacts are less frequently mentioned in the responses and were often objects directly related to aircraft or affiliated aviation industries. A small number of references were made to general collections that contained a mix of objects. Although accounting for only 21 references, the artefacts identified by respondents are significant to understandings of the development of early aviation and its role in other industries.

***Responses re Artefacts from Q.5***

- Elements of the GAF Factory;
- Air Traffic Control Equipment;
- Aerial Agricultural related equipment;
- Link Trainer A13-92 (mechanical flight simulator);
- Cheetah cylinder barrel;
- 9.2 metre Skylark solid propellant Rocket;
- Wild aerial camera;
- Structures at Essendon Airport now mostly disused;
- Relics from several Japanese and allied aircraft;
- Briefing desks Brisbane circa 1982;
- Australian manufacture of aviation-related radio equipment;
- Radio Communication systems;
- Rotary engine still in operating condition;
- Flight Office.

**Organizations**

Organizations were the second most referenced type of heritage that respondents identified as important. Further breakdown of this revealed several sub-categories of organizations with airlines the most represented in the survey (Fig. 6). Next are heritage organizations including museums, societies and clubs that are affiliated with aviation or have collections of aviation material. Aviation industry organizations are also strongly represented in the results together with other affiliated aviation organisations.

The high representation of organizations, in particular airlines, museums and societies, suggests that great importance is placed on aviation companies and organisations as sources of identity and community for particular stakeholder groups. The organisations that care for aviation heritage perform a similar function for stakeholder groups. Airlines in particular, attract remarkable loyalty and levels of identification amongst stakeholders, in many cases long after the companies have ceased to exist.

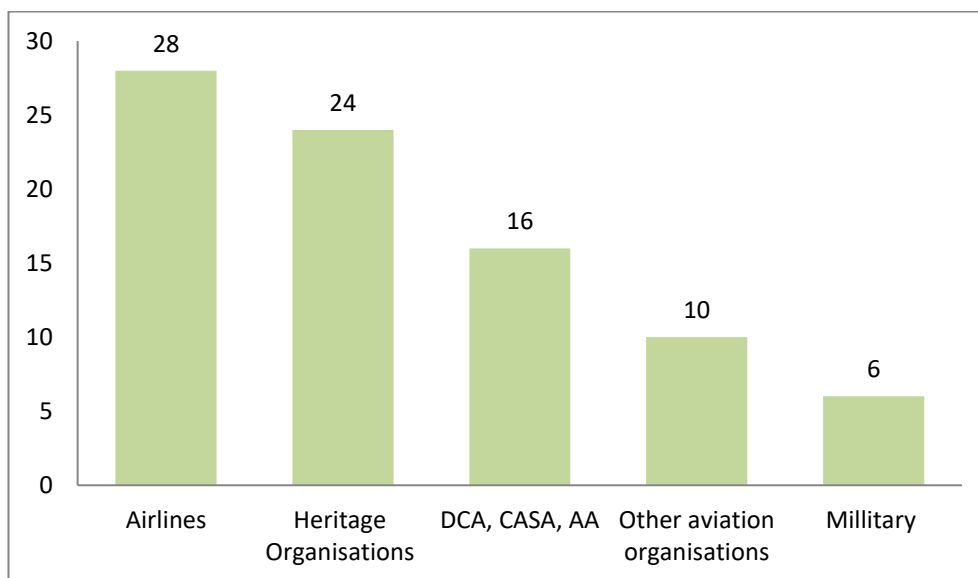


Figure 6: Sub-categories of organisations.

Respondents' answers to this question are quoted below.

***Responses re Airlines from Q.5***

- Bushies;
- Cathays first aircraft;
- Bush Pilots Airways;
- Air Queensland;
- Ansett Airlines group of companies;
- Iona Airways;
- Flinders Island Airways;
- Tasmanian Aerial Services;
- Holyman Airways;
- Australian National Airways;
- Guinea Airways;
- Trans Australia Airlines (TAA);
- Connellan Airways, Flying Doctors.

***Responses re Heritage Organizations from Q.5***

- Cairns Historical society;
- Cairns Museum;
- The Queensland Air Museum;
- Qantas Founders Museum;
- Hong Kong museum;
- Qld Air Museum;

- Commonwealth Heritage List;
- National Heritage List;
- Powerhouse Museum and Discovery Centre;
- Australian Aviation Museum, Bankstown Airport;
- Narellan Aviation Museum;
- Australian Gliding Museum, Bacchus Marsh Aerodrome;
- RAAF Bullcreek Aviation Museum, WA;
- Aviation Museum, Beverley WA;
- Nhill Aviation Heritage Centre Ahrens Hangar.

***Responses re Other Aviation Organizations from Q.5***

- Cairns Airport (North Queensland Airports);
- Boeing Australia (GAF);
- 13/31 club;
- Various (24) record series of the Royal Flying Doctor Service of Australia (SA Section);
- Manuscripts of Shaw Ross Engineering and Aviation MS 13587;
- Department of Civil Aviation;
- Director General of Civil Aviation;
- International Organisation of Women Pilots;
- NAHC Radio Station subcommittee.

**Places and Sites**

The importance of places and sites was reflected in 82 references in the survey. They included infrastructure such as air-traffic control towers and hangars that had historical or social significance to the surrounding communities. Sites referenced were often regional centres which have strong historical links with the aviation industry or which developed and thrived around regional aviation centres. These centres were often stops on air routes and thus became hubs for regional development.

The high occurrence of unspecified or general sites, such as airports, hangars and infrastructure such as air traffic control towers and factories, present an interesting view that all sites and infrastructure associated with aviation are considered to be important aspects of aviation heritage. Queensland and Victoria were strongly represented in the survey and this is consistent with the historical connections these states have with aviation such as pioneering airlines and flight schools.

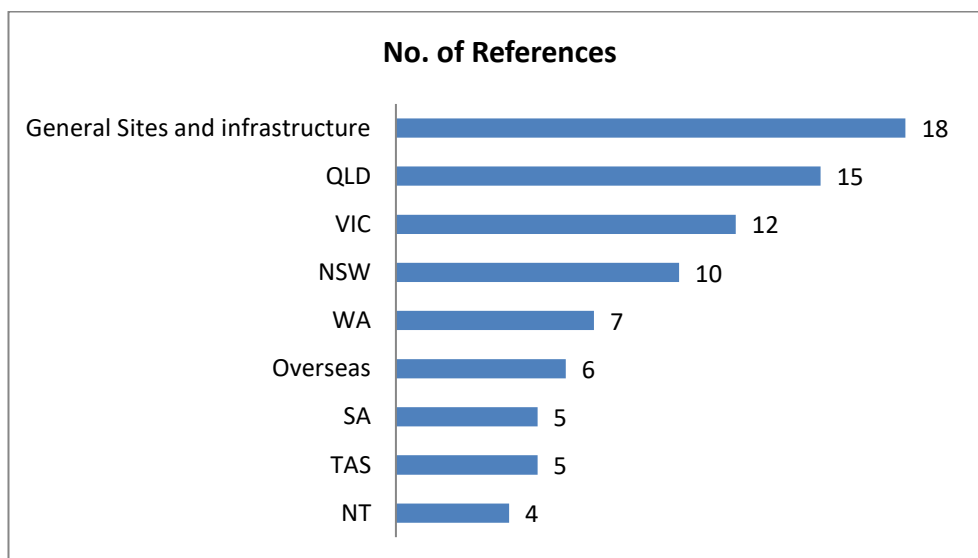


Figure 7: Geographical distribution of places and sites.

***Responses re General Sites, Places and Infrastructure from Q.5***

- Aerodromes;
- Aviation Schools;
- State Aviation Schools;
- Architectural plans/photos of disused/replaced airports;
- Aviation sites of significance, crash sites & memorials;
- Historical airport buildings;
- Australian civil airports and aerodromes;
- Air Traffic Control Towers;
- Maintenance of a WWII aircraft hangar;
- 1942/3 built Bellman hangar;
- CAC Factory.

***Responses re Places, Sites and Infrastructure in QLD from Q.5***

- Cairns;
- Longreach;
- Winton;
- Brisbane;
- Cairns;
- Cairns airport;
- Caloundra, Sunshine Coast, Queensland;
- Longreach;
- Cairns and Brisbane;
- Cairns Domestic Airport Terminal Display;

- Caloundra Sunshine Coast;
- Longreach;
- Brisbane or Cairns;
- Closed ATC Training College Brisbane 1996;
- Winton/Longreach.

***Responses re Places, Sites and Infrastructure in VIC from Q.5***

- Point Cook;
- Element of Laverton;
- Essendon - the oldest /most intact Civil Aerodrome;
- Ballarat;
- Structures at Essendon Airport now mostly disused;
- Australian Gliding Museum, Bacchus Marsh Aerodrome;
- Diggers Rest, Vic;
- Hamilton;
- Ansett Airways hangar-Hamilton.

***Responses re Places, Sites and Infrastructure in NSW from Q.5***

- Parramatta;
- Sydney Airport;
- Victoria Park, site of first powered flight in Sydney;
- Waverley Cemetery, Memorial to Lawrence Hargraves;
- Powerhouse Museum and Discovery Centre;
- Australian Aviation Museum, Bankstown Airport;
- Narellan Aviation Museum;
- WWII RAAF Base at Nhill Aerodrome;
- Nhill Aviation Heritage Centre Ahrens Hangar;
- DCA Radio Station;
- Nhill from 1919 when the first aircraft landed in Nhill and the centenary in 2019.

***Responses re Places, Sites and Infrastructure in WA from Q.5***

- A drive from Wyndham via Fitzroy Crossing back to Derby along most of the Gibb River Road;
- Halls Creek;
- Meekatharra;
- RAAF Bull Creek Aviation Museum, WA;
- Aviation Museum, Beverley WA.

***Responses re Places, Sites and Infrastructure in SA from Q.5***

- Woomera;
- The story of Woomera - rockets on display;
- South Australian;
- SA aviation.

***Responses re Places, Sites and Infrastructure in TAS from Q.5***

- The first commercial air service in Tasmania;
- Western Junction, TAS;
- Launceston railway workshop;
- Aerial mapping in Tasmania;
- Helped close ATC Training College in Launceston 1995.

***Responses re Places, Sites and Infrastructure in NT from Q.5***

- Over Darwin;
- Ross & Keith Smith Memorial. Darwin;
- Central Australia;
- Aviation in Central Australia;
- Alice Springs "Townsite" aerodrome with original hangar and Tarmac area (no runways).

***Responses re External Places, Sites and Infrastructure from Q.5***

- Ireland;
- Helicopter mount in Antarctica;
- Aerodrome on Norfolk Island;
- Mainly photos from my time with DCA in PNG after finding missing WW2 Aircraft.

**Time Periods**

Particular time periods or eras were frequently mentioned in the survey, often in association with objects, events and organizations. These time periods were classified into four broad groups covering significant periods between the late 19<sup>th</sup> century and the present.

1. The Pioneering Period: late 1890s - 1938;
2. World War 2 Period: 1939 – 1945;
3. Post War Period: 1946 – 1979;
4. Contemporary Period: 1980 - Present.

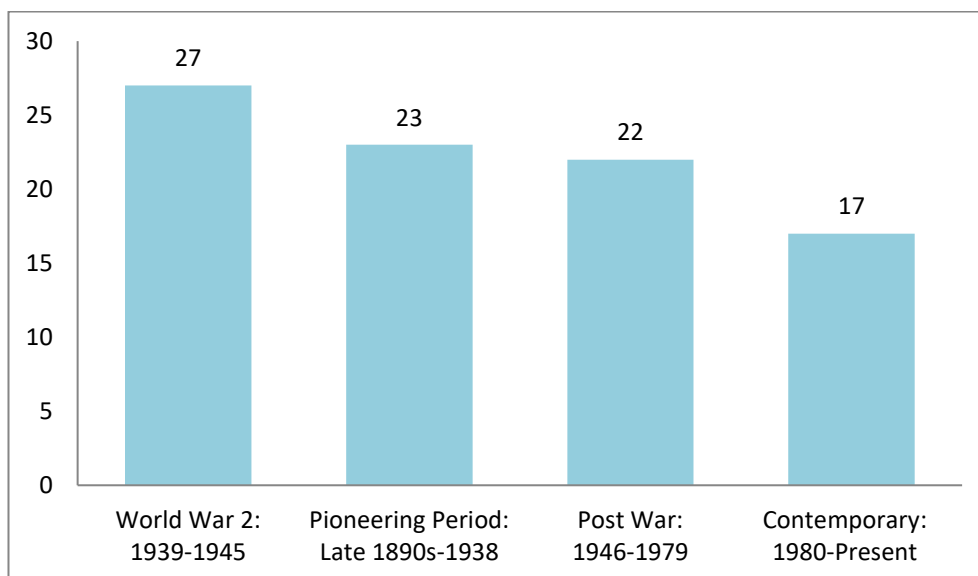


Figure 8: Frequency of time periods mentioned in the results.

The data shows that respondents have referenced the heritage associated with WW2 most frequently. This is followed closely by the early pioneering period of aviation. These periods reflect aviation's proliferation and rapid development in the early part of the 20<sup>th</sup> century, and also how memory stories, myths and narratives have developed around the early history of aviation and the heroism of early aviators, especially those involved in the World Wars.

***Responses re The Pioneering Period: late 1890s - 1938 from Q.5***

- The first commercial air service in Tasmania;
- Aviation School 1916-17; 1920-26 [20/12530-12531 (pt)];
- State Aviation School 1918-19 [20/12876];
- Photographic material relating to roads and transport, including aviation for the period 1913-2001 (ref: GRS 8096);
- Shell General Aviation Map of Australia with manuscript additions and typescript index of Australian Air Services, 1938 (ref: GRG 35/337 Maps and Plans - Surveyor General's Office, SA);
- WW1;
- E. A. Crome Collection of Pamphlets on Aeronautical Subjects (16 pamphlets, 1784-1928);
- 1920s aviation search and rescue activities, aerial views and people;
- Aviation records, 1928-1953 (various items of historical interest);
- All aspects of Airservices (DCA) past history from 1921 to the present day;
- Qantas - original documents and artefacts from 1920s, magazines and newspapers 1920s-current;



- Nhill from 1919 when the first aircraft landed in Nhill and the centenary in 2019.

***Responses re World War 2 Period: 1939 – 1945 from Q.5***

- Defending Australia in WW2;
- Avro-Anson Aircraft made during World War II;
- The contribution of the AFC in WWI;
- Recognising the contribution of the RAAF members who served in Article XV, RAF and other non-Australian units in WWII;
- Appreciation of other national air forces operating from Australia in WWII (NEI, USAAC/F, RAF, RN, etc.);
- Development and operations of the ADAT and Australian Airlines/Civil Operators in WWII;
- WW2, Post WW2;
- Mainly photos from my time with DCA in PNG after finding missing WW2 Aircraft;
- WW2 aircraft;
- The RAAF Flying Boats of WW2;
- 1942/3 built Bellman hanger.

***Responses re Post War Period: 1946 - 1979 from Q.5***

- Personal anecdotes/stories from ATC since the 1950s;
- In-house magazines in ATC since 1960s;
- 9.2 metre Skylark solid propellant Rocket used at Woomera for research. Of a type used since 1957, this one donated in 1981;
- Various (24) record series of the Royal Flying Doctor Service of Australia (SA Section) currently referenced as Government Record Group (GRG) 147 for the period 1936 – 1980;
- My recollections of employment of 42 years from 1960.

***Responses re Contemporary Period: 1980 - Present from Q.5***

- De Havilland D.H.114 Heron aircraft operated by Airlines of Tasmania from 1985;
- Skycycle - constructed between 1988 and 1993 by Burnie TAFE, broke record for longest human-powered flight;
- Closed civil ATC in Townsville 1994;
- Helped close ATC Training College in Launceston 1995;
- Closed ATC Training College Brisbane 1996;
- Briefing desks Brisbane circa 1982;
- Archive of safety promotion videos (late 1990s-present).

## People and Communities

The stories of people who worked in aviation have been identified by the respondents as an important aspect of aviation heritage in Australia.

These include not only famous aviators such as Lawrence Hargrave, Charles Ulm and Sir Reginald Ansett but also everyday people who worked behind the scenes in the development of aviation throughout its history.

A much smaller group identified by respondents in this question were the communities that relied on aviation and developed because of its influence and services. These communities, often in regional and rural Australia, had close connections with aviation in their daily lives and their stories and histories are noted as an important part of aviation heritage.

The people and communities listed below are the responses to this question. The responses have been sorted into the theme that best fits the response.

### ***Responses re People from Q.5***

- Airline Sir Bob Norman;
- General Manager Ron Entsch, former Director Air Services Australia;
- William Hart;
- Rick Spry and Ken Spry;
- I would love to see the personal stories of those involved in past airlines collected and displayed;
- Lawrence Hargraves;
- Waverley Cemetery, Memorial to Lawrence Hargraves;
- E.A. Crome Collection;
- Horrie Miller;
- Norman Ellison;
- Charles Ulm;
- Charles Daniel Pratt;
- Fred Morton;
- Charles Daniel Pratt;
- Manuscripts of Nigel Bilbrough Joyce MS 13552;
- Manuscripts of John Yeates Mann MS 13553;
- Manuscripts of Ronald Wilson Cumming MS 13551;
- Manuscripts of Eric Douglas MS 15191;
- Manuscripts of Don Charlwood MS 15405;
- My recollections of employment of 42 years from 1960;
- Bert Hinkler's aircraft;

- Jon Johnason flight;
- Famous aviators of SA;
- And not just pilots, but some of the first air traffic controllers, aircraft mechanics and navaid personnel;
- Aviation families - For instance, families of air traffic controllers and also airlines families, such as Kendalls, Hazletons etc.;
- Edgar Johnston;
- Dr Bill Bradfield;
- Sir Fergus McMaster;
- Involvement of veterans ex-Liberator Squadrons;
- Sir Reginald Ansett;
- Roger Meyer OAM;
- Remains of Wackett aircraft from James Knight, January 1962;
- Kurt Johannsen;
- Design and construction E Schnider Australia;
- Recognising the contribution of the RAAF members who served in Article XV, RAF and other non-Australian units in WWII;
- Before my father died in 2001 he wrote his memoir. One of his many passions was flying. While he never managed to complete his flying training, the story he tells of what it was like in 1937 to balance work and flying in those difficult economic times is an extremely interesting story. His description of his first solo flight over Brisbane with his only landmark being the newly constructed City Hall tower is amazing. I believe my father's story of the hardships of learning to fly in 1937 is a small but significant piece of aviation history that should be captured, particularly because it ends, as so many would have in those days, with a failed outcome – beaten by life's circumstances;
- Premiers Department; NRS, Special Bundles, [12/8794-97] 1948-72 Civil aviation (63/1966 Pt. I-IV): 1948-54 [12/8794]; 1955-64 [12/8795]; 1964 (Air Transport Act) [12/8796]; 1965-72 [12/8797];
- Records concerning individual aviators, for example, probate and divorce papers.

***Responses re Communities from Q.5***

- Communities and Bushies;
- Strong connection with the communities;
- Bushies Facebook page has been established for former employees;
- Stanwell Tops.

## Historical Themes

Respondents also identified historical themes in Australian aviation heritage that they see as important. It is interesting to note that these themes are often general and concentrate on a particular subject and its development over time.

The themes represent broad categories of people or technology that have been identified as important to some respondents. These identified historical themes suggest several gaps in aviation history and heritage that may need to be investigated further.

The historical themes represented by respondents' answers include:

- Aerodromes, Airports, Airlines;
- Australian Manufacturing and Design;
- Aviation History (oral history);
- Training;
- Government Related;
- Aviation Safety.

The following list of historical themes includes the responses to this question. The responses have been sorted into the theme that best fits the response.

### ***Responses re Aerodromes, Airports, Airlines from Q.5***

- Development of major aerodromes over the last 100 years;
- Development/Loss of minor aerodromes over 100 years or more;
- Civil Air Transport;
- History of Australian civil airports and aerodromes;
- History of air traffic services;
- Australian airlines - not just focusing on the bigger airlines, but those smaller ones that help to connect regional Australia;
- Royal Flying Doctors Service - they have had a rich and interesting history in Australia;
- The development of the Australian airways system including airports, navigation aids and air traffic services - without all of which organised civil aviation would not have been possible;
- Transition to Satellite based infrastructure.

### ***Responses re Australian Manufacturing and Design from Q.5***

- Australian Manufacturing and design;
- Australian manufacture of aviation-related radio equipment;
- Technology - Aviation is a leader in technology;

- Australian built aircraft;
- Research.

***Responses re Aviation History from Q.5***

- Oral histories and stories of many DCA officers;
- Oral history;
- Aviation families;
- The history and development of aviation;
- Pioneers of Central Australian aviation;
- Pioneers;
- The restoration and study of the Liberator involvement in RAAF service reveals some important service, engineering and cooperation that existed but has largely been forgotten or overlooked in our national history.
- Airspy photographs;
- Photographs and stories - women pilots.

***Responses re Training from Q.5***

- For training on now outdated navigation aids etc.;
- Old manuals;
- Helped close ATC Training College in Launceston 1995;
- Closed ATC Training College Brisbane 1996;
- Defending Australia in WW2 (e.g. local Manufacturing, EATS program/training etc.);
- Aviation School 1916-17; 1920-26 [20/12530-12531 (pt)];
- State Aviation School 1918-19 [20/12876];
- Training aids manufactured by the TAA.

***Responses re Government Related from Q.5***

- Government agencies in the development and support of civil aviation in Australia;
- Premiers Department; NRS , Special Bundles, [12/8794-97] 1948-72 Civil aviation (63/1966 Pt. I-IV): 1948-54 [12/8794]; 1955-64 [12/8795]; 1964 (Air Transport Act) [12/8796]; 1965-72 [12/8797];
- Why was aviation regulated?;
- How have politics influenced aviation over time?;
- National register/preservation policy for aviation sites of significance, crash sites and memorials;
- Australian civil aviation administration;
- Creating a register of aviation artefacts of national significance.

***Responses re Aviation Safety from Q.5***

- Archive of safety promotion products;
- Archive of safety promotion videos (late 1990s-present);
- 1920s aviation search and rescue activities, aerial views and people.

#### 4.5 Question 6

Question 6, *"Please tick all the types of aviation heritage that you or your organization owns or cares for."*

This question revealed the diverse range of aviation heritage cared for or owned by respondents with strengths in documents, ephemera and audio-visual material (Fig 9).

Monuments and operational aircraft are the least owned or cared for by respondents, representing 11.1% and 12.7% respectively.

This result is consistent with Question 5 which lists archival material, objects and sites as the most important types of aviation heritage.

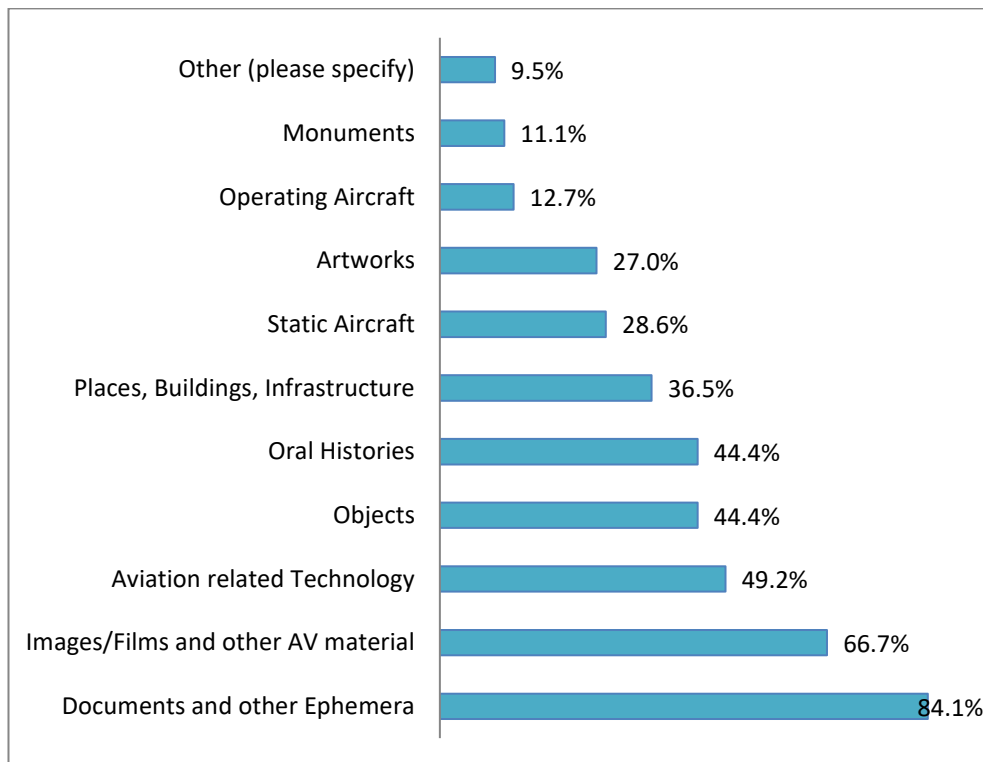


Figure 9: Types of Heritage owned or cared for by respondents.

#### 4.6 Question 7

Question 7, *“From your perspective, what are the most important themes or stories the aviation heritage identified above relates to.”*

Results indicate that respondents see stories and themes related to organizations, sites and aviation development as important to the organizations that own or care for these items.

These important themes or stories not only revolve around a particular organization, but its associated sites and historical development. Early aviation stories and identities were also seen as important to the aviation heritage that respondent's work or care for.

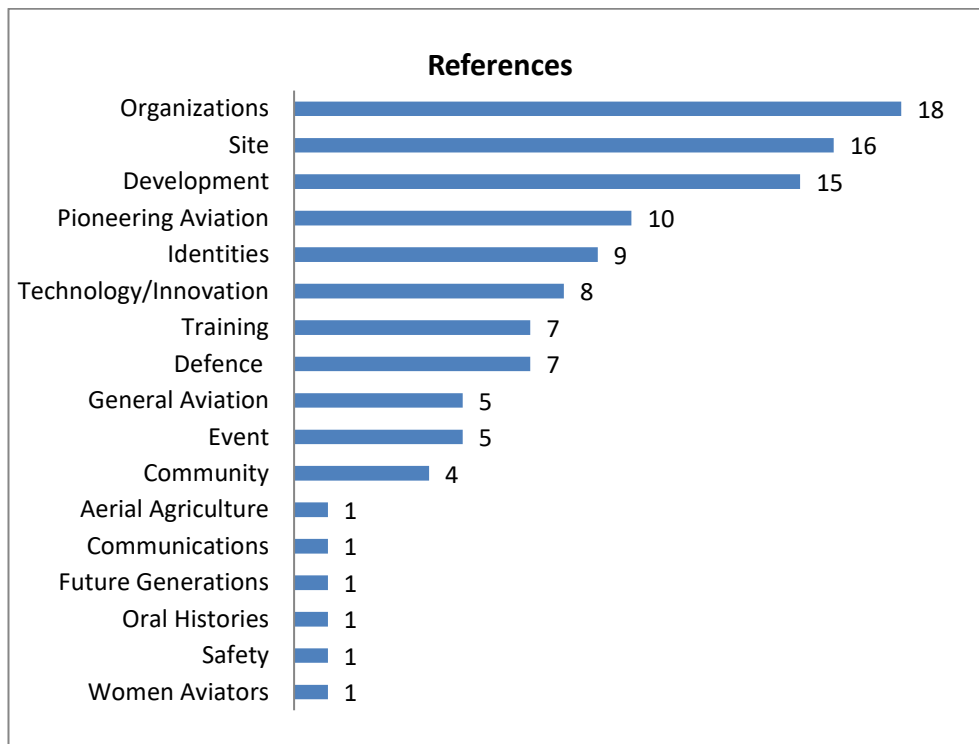


Figure 10: Important themes and stories relating to aviation heritage cared for by respondents.



***Responses re Organisations with Important Heritage Themes or Stories from Q.7***

Of the sixty-four responses to Question 7, eighteen respondents identified the following organisations as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- As it is over 26 years since AQ closed and we are all getting older it is important that the history be permanently recorded before we all fall off the perch;
- Air Traffic Control;
- The development of Holliman Airways/ANA;
- Commonwealth;
- Civil ATC;
- History of the Royal Flying Doctor Service of Australia;
- SA Department of Planning, Transport and Infrastructure (and its predecessor agencies);
- ATC;
- Royal Flying Doctors;
- Connellan Airways;
- ANAC to run TAA domestically and BCPA internationally;
- Dept. Civil Aviation;
- QANTAS, TAA, ANSETT and ANA Airlines among others;
- Founding of Qantas;
- 17 Feb 1936 - Ansett Airways first flight Hamilton to Essendon and return same day. 1 Pilot and 6 passengers;
- Connellan Airways est 1939;
- Australian Army Aviation;
- QANTAS - Early history.

***Responses re Sites with Important Heritage Themes or Stories from Q.7***

Sixteen respondents identified the following Sites as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Aerodromes in the Australian network;
- Tasmania;
- Operated airports;
- Brisbane (Archerfield) – 1937;
- Townsville;
- As such our records would provide insight into the NSW State government's role in aviation over the years;
- Australian & New Zealand;

- South Australia;
- The Northern Territory;
- Western Australia;
- The NT specifically;
- Historical knowledge particularly ATC in QLD;
- We try to relate to South Australia as a theme;
- Central Australia;
- Nhill;
- Ahrens Hangar and other Aerodrome buildings.

***Responses re Development with Important Heritage Themes or Stories from Q.7***

Fifteen respondents identified the following Developments as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Significant owners and developers of two tourist resorts (Lizard Island Lodge and Cape York Wilderness Lodge) designed to generate passengers onto Bushies scheduled flights to these destinations;
- The development of retail travel outlets throughout Queensland;
- Aerial Agriculture in Australia. This sector of Aviation in Australia has a rich history of using a wide range of aircraft to spray or spread to protect and help grow food and fibre in Australia. I am not sure that there is enough being done to help preserve this heritage and at best it may be very disjointed. A project like this could help bring it together;
- The development of Holyman Airways/ANA;
- Commonwealth owned and operated airports now owned/operated by private companies or local government bodies;
- Development;
- The development and expansion of commercial airline services over the last century;
- Photographic history of transport, including aviation;
- Evolution of aviation 1970s to 21st century;
- The opening up of Australia;
- Development of technology in the late 20th century in civil aviation;
- Technical support and changes in supporting the Air Traffic Control system with communications, navigation aids, radar, Message Switching and automated Pilot Briefing;
- Australia's historical contribution to international civil aviation;

- Behind the scenes and the significant effort of maintaining the systems which enable aircraft to find their way;
- The development of Air Traffic Control in Australia.

***Responses re Pioneering Aviation with Important Heritage Themes or Stories from Q.7***

Ten respondents identified the following Pioneering Aviation as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Early commercial aviation in Tasmania;
- Early aviation in the outback;
- Early aviation training;
- Early aviation;
- Mostly ex RAAF servicemen were the Foundation Members. Australia started to open up for quick, efficient travel driven by air. Country towns were made or faded if they had air services. And TAA covered all of Australia (and Papua New Guinea) unlike Qantas which only serviced the overseas routes;
- Development of Australian aviation across a century, both commercial and private;
- The role of government agencies in the development and support of civil aviation in Australia;
- Government Policy;
- 17 Feb 1936-Ansett Airways first flight Hamilton to Essendon and return same day, 1 Pilot and 6 passengers;
- QANTAS - Early history.

***Responses re Identities with Important Heritage Themes or Stories from Q.7***

Nine respondents identified the following Identities as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- William Hart was the first person in Australia to receive an aviation license. He built and flew his own plane in 1910/1911;
- The hard work by the early maintenance crews camping in tents;
- how such information was largely held in memory and tradition and now has to be written down as old maintenance engineers die;
- of individuals involved in aviation;
- Historical knowledge particularly ATC in QLD;
- My experiences working in DCA in the 1970s;

- They therefore focus on the personal relationships with aircraft and flying. They cover the period of pre-WWI to about 1965. In all 2,000-3,000 individual photos;
- Flynn;
- Australian Women pilots.

***Responses re Technology and Innovation with Important Heritage Themes or Stories from Q.7***

Eight respondents identified the following Technology and Innovation as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Australian Aviation Manufacturing and design;
- Aerial Agriculture in Australia. This sector of Aviation in Australia has a rich history of using a wide range of aircraft to spray or spread to protect and help grow food and fibre in Australia. I am not sure that there is enough being done to help preserve this heritage and at best it may be very disjointed. A project like this could help bring it together;
- Technology change;
- Technology;
- Technical support and changes in supporting the Air Traffic Control system with communications, navigation aids, radar, Message Switching and automated Pilot Briefing;
- Development of Australian Aircraft industry and technology;
- Air traffic control, aircraft / pilot development / airways engineering all aspects from day one;
- Technology.

***Responses re Training with Important Heritage Themes or Stories from Q.7***

Seven respondents identified the following Training as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Trained and qualified employees, to the extent that many of these employees are still valued employees of other airlines around the world;
- Technical descriptive maintenance engineering data;
- Aviation Training (Pilots);
- Early aviation training;
- Flying schools in Brisbane (Archerfield) – 1937;
- History of airworthiness standards and maintenance manuals etc.;
- Army Aviation Training Centre.

***Responses re Defence with Important Heritage Themes or Stories from Q.7***

Seven respondents identified the following Defence related areas as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Australian and New Zealand Military Aviation;
- WW2 and Vietnam;
- Military History - WW2;
- Korea & Vietnam;
- The recognition of the importance the role of the B24 played in RAAF service;
- The operation of Flying Boats, both military and civilian, and the role played by them during WW2;
- The creation of the Australian Army Aviation capability from a single flight of aircraft in the late 1940's to the present.

***Responses re General Aviation with Important Heritage Themes or Stories from Q.7***

Five respondents identified the following General Aviation as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- All are important - The owners, The pioneers, The operation, The workers untold stories. All too often we focus on the big names, what about the Joe or Jill who toiled for 25 years behind the scenes or on the front line or service;
- The National Library aims to collect, preserve and make accessible material relating to Australia and the Australian people. Aviation history is well represented in our collections by material of national significance in a variety of formats, including images, personal papers, records of organisations, books, journals, aerial photos, oral history interviews and more;
- Aviation history in Australia;
- Preservation of Australian aviation history in general and of the NT specifically;
- Aviation through History.

***Responses re Events with Important Heritage Themes or Stories from Q.7***

Five respondents identified the following Events as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Interwar Civil Aviation Defending Australia in WW2;
- William Hart was the first person in Australia to receive an aviation license. He built and flew his own plane in 1910/1911;
- Australian wartime production of Aviation material;
- WW2 and Vietnam;
- Flight of the Kookaburra.

***Responses re Community with Important Heritage Themes or Stories from Q.7***

Four respondents identified the following Community issues as having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- Customer focused and involvement with all communities serviced by the airline;
- Aviation supporting a remote Australia;
- As our community changes over time, the history of Nhill becomes even more important, as does education;
- To provide air links in remote Australia.

***Responses re Other Areas with Important Heritage Themes or Stories from Q.7***

Of the 64 responses to Question 7, the following six areas only received one response each relative to having important heritage themes or stories in relation to the aviation heritage they identified in Question 6.

- **Aerial Agriculture:** Aerial Agriculture in Australia - this sector of Aviation in Australia has a rich history of using a wide range of aircraft to spray or spread to protect and help grow food and fibre in Australia. I am not sure that there is enough being done to help preserve this heritage and at best it may be very disjointed. A project like this could help bring it together.
- **Communications:** Air traffic Controllers to communicate with and separate aircraft.
- **Future Generations:** To preserve aviation history both commercial and military for this and future generations.
- **Oral Histories:** Oral Histories.
- **Safety:** Snapshot of Australian aviation safety issues.
- **Women Aviators:** Australian women pilots.

#### 4.7 Question 8

Question 8, *“What place, item or story of aviation heritage do you work on or use the most?”*

Most respondents work on topical or thematic aspects of aviation heritage that are relevant to their heritage organizations.

Examples of topical or thematic heritage are aerial agriculture, flying boats, communications systems and women pilots.

Along with the topical or thematic heritage respondents work on, they also work on aviation heritage that centres on an organization such as an airline (Bushies, Qantas), an aviation service (Royal Flying Doctors) or the RAAF.

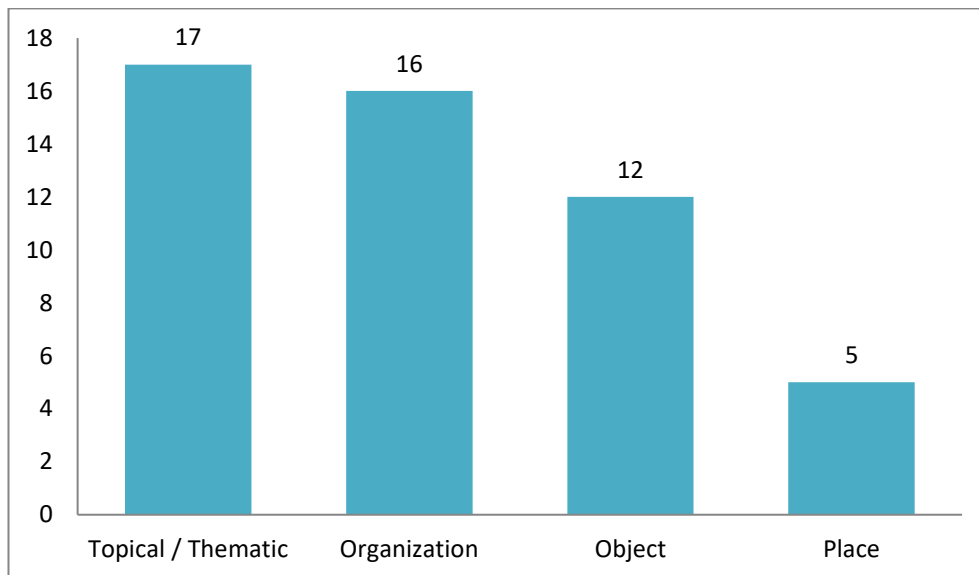


Figure 11: Response to aspects of aviation heritage respondents worked on the most.

#### ***Responses re Aviation Heritage Topics Most Worked On or Used from Q.8***

Of the fifty-two responses to Question 8, eighteen respondents aligned themselves with Topical or Thematic Aviation Heritage as follows:

- I work on preserving our manufacturing heritage the most, as this is uniquely Australian, and is a rich and important theme of our Nation's history that is poorly preserved and promoted to our public. I am also strongly supporting preservation of our interwar civil aviation, and civil air transport stories as these have no place in our Federally funded collections and museums as they are virtually limited to recording our Military Aviation

heritage. I do however think more should be done to tell the story of Defending Australia in WW2, and more from the manufacturing and training that occurred across the Nation, as against the combat / operational stories that are already well told in our Federally funded museums and collections. Separate to my involvement in the Australian National Aviation Museum (AARG), I have had deep involvement in the campaign to preserve Point Cook AFC/RAAF Base, as well as elements of Laverton RAAF Base, Essendon Airfield and Ballarat Airfield, as well as the CAC "Butler" Hangar - we need to preserve the unique large span buildings (hangars) that were uniquely developed for Aviation, as well as the best representative, intact of our early airfields, the 4 listed above are all located in Victoria, but represent the best preserved / most extant examples of 1. WW1/AFC airfield (Point Cook) 2. Interwar/WW2 RAAF Base (Laverton), 3. Interwar Civil Aerodrome (Essendon). 4. Wartime EATS RAAF Airfield (Ballarat). Any contemporaries of these sites elsewhere in Australia have either been lost/redeveloped or stripped of much of their original built heritage;

- Wee Waa is the Cotton Capital of Australia, so it has a great history of aerial spraying. Hence this area of aviation is where my interest lies;
- Aerodrome Inspector for 32 years. I was the last DOA trainee inspector in 1983;
- Airport operations;
- CNS technology change;
- Sharing history (oral tradition);
- Documents and manuals that show historical standards and regulatory requirements;
- Broad aviation safety issues: from GA to air transport, and everything in between;
- History from experience and artefacts;
- Air Traffic Control, and associated ground facilities (eg. radio navigation aids. Flight Service (now redundant);
- Airways System Maintenance;
- Technical aspects of Air Traffic Control Towers;
- My collection covers worldwide aviation - but because I have been collecting in Australia there are many items showing local aviation history;
- Air traffic control history but minimally;
- The role of government agencies in the development and support of civil aviation in Australia;
- Flying Boats of W2;



- Women pilots.

***Responses re Organisations and Aviation Heritage from Q.8***

Sixteen respondents aligned themselves with the following Organisations and related Aviation Heritage:

- Website Bushies.net. However all of the instrument detailed above have strong and committed involvement by many former employees. The Bushies spirit and pride is as strong today (2014) as it was when the doors were closed in 1988;
- I collect history and items for ALL Australian RPT Airlines and I display it all for FREE online my museum gets 90-110 K hits per year;
- Website [www.adf-serials.com.au](http://www.adf-serials.com.au) [www.nzdf-serials.co.nz](http://www.nzdf-serials.co.nz) Assist many Authors, Museums, individual researchers;
- Australian Aviation Heritage Centre (formerly Darwin Aviation Museum) - maintaining and updating displays;
- Our Museum is a public museum so there is a concentration on operating the Museum - preparing exhibits and restoration work;
- Royal Flying Doctors;
- Connellan Airways;
- Anything to do with TAA or its successor Australian Airlines;
- Airways Museum Essendon airport;
- We work at the Airways Museum Building 44, Essendon Airport maintaining and updating systems and material relating to DCA (Airservices);
- History of Qantas;
- Museum in the first Ansett Airways Hangar, Replica aircraft, engines;
- Governance of the NAHC organization;
- Australian Flying Corps and RAAF;
- Australian Army Aviation.

***Responses re Heritage objects Most Worked On or Used from Q.8***

Twelve respondents identified the following Objects as their most worked on or used Aviation Heritage:

- Miss Flinders is on permanent display. The Holymans story is due to be interpreted in future;
- Aviation maintenance data;
- Documents and manuals that show historical standards and regulatory requirements;
- Personal interest revolves around the B-24 Liberator;

- I have been collecting airline material, mostly timetables, since I started working in the commercial airlines in Britain in the 1950s: this is now a very large resource and I would like to see it curated and maintained;
- The Airspy photographs are very popular with users;
- ATCARDS Simulator Suite in Bullcreek Museum donated by Airservices on wind-up of ATC Training Annex in Perth AACC in 2000;
- I am currently digitising my collection of aviation photographs taken during my career, these are of aviation sites and aircraft taken between 1968 and 2013;
- Books on the above;
- The restoration of the B24 Liberator aircraft;
- DAP Bristol Beaufort No. A9-141;
- Museum in the first Ansett Airways Hangar, Replica aircraft, engines.

***Responses re Heritage places Most Worked On/At or Used from Q.8***

Five respondents identified the following Places as their most worked on/at or used Aviation Heritage:

- Aerodromes;
- Central Australia;
- Airways Museum Essendon Airport;
- We work at the Airways Museum Building 44, Essendon Airport maintaining and updating systems and material relating to DCA (Airservices);
- I am also researching the story of F.K McKenzie (Journalist with the local paper) without whom the Aerodrome would not have been developed, nor the RAAF Training Base established at the Nhill Aerodrome.

#### 4.8 Question 9

Question 9, “We are considering constructing a digital portal to help people find and be inspired by Australia’s aviation heritage. Would you be interested in having links to your heritage material available on this portal? Please tick all that are applicable.”

A large majority of respondents indicated they would like some form of recognition of their collection or museum to be represented on the portal.

Of importance are the respondents who would like their collection to be searchable from the portal. These respondents will be contacted to discuss the use of their collections to form the basis of the portal.

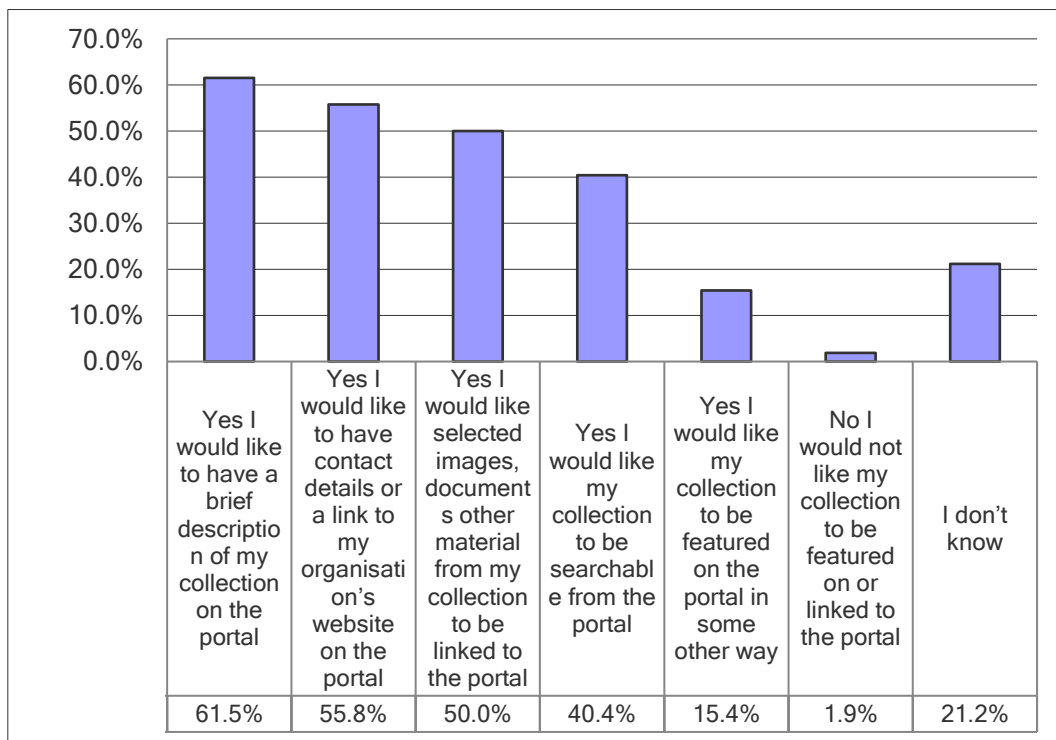


Figure 12: Responses to the construction of a digital portal.

#### 4.9 Question 10

The analysis from the responses to Question 10, *“Please tell us about any of Australia's aviation heritage that you feel is not well known or at risk of being lost.”* reveals some strong areas that have been identified as being at risk or unknown.

Only 41 out of 113 respondents answered this question.

Of the results from 41 respondents, ‘unknowns’ or ‘gaps’ in aviation heritage out-represented ‘risks’ by 34 to 15. This would suggest that the risk to aviation heritage was a knowledge gap in itself and needs to be investigated.

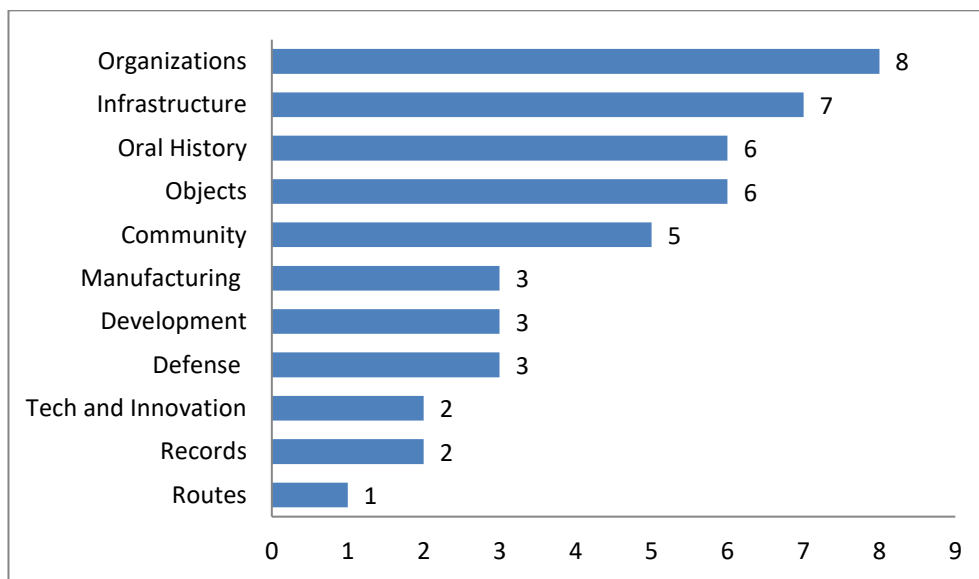


Figure 13: Types of heritage at risk.

Organisations, infrastructure, oral history and objects were the top four areas frequently mentioned in the results.

This is consistent with what respondents considered important in Question 5. Organisations such as the Department of Civil Aviation and its subsequent statutory bodies, Airservices Australia and Civil Aviation Safety Authority, were frequently identified as at risk or unknown.

Affiliated technologies and industries such as manufacturing were also listed as an unknown part of aviation heritage.

Oral histories and objects also ranked highly in the types of heritage that are at risk or unknown.

Infrastructure such as air traffic control towers and hangars of historic importance were identified of as at risk.

The types of aviation heritage that are identified as at risk or unknown reflect the changing landscape of aviation, such as the closure Ansett and TAA, the technological transitions and the passing of the old guard.

The reaction to these changes by the aviation community is reflected in the results and analysis of the risk and unknowns.

Following are the answers from respondents to Question 10.

***Responses re Organisations from Q.10***

- Organisations such as the original aircraft operators including Bushies, but others as well in the provision of medical items, fresh produce, school correspondence classes as well as Cairns Aerial services, Flying Surgeon services (pre Flying Doctor) etc.;
- Melbourne has an Aviation Museum;
- The Holyman Airways story, although known, is not as well-known as it could be. Further research into the claim that Holymans had the world's first airline hostesses is necessary - an American airline also claims the same thing;
- As written before the little people the little airlines;
- Other airlines, both extinct and extant, are less well served;
- History of ATC in WA;
- The TAA / Australian Airlines 25 Year Club & Museum is dependent on Qantas for our building and some other assistance;
- Ansett Airways - folded 2001 - panel boards on walls with signatures of aircrew arrival into Tullamarine.

***Responses re Infrastructure from Q.10***

- The old stories of early Aerodrome Inspection and survey techniques;
- Airport infrastructure supplied/managed by the Commonwealth until the early nineties;
- History of Aerodromes in the Sydney basin;
- Use of civil aerodromes for training in WW2 (eg., Cunderdin in WA);
- Townsville ATC history;
- Probably the old D.C.A messes which used to be scattered about inland & northern Australia together with some of the characters who lived in them;
- Operational buildings and structures relating to civil aviation infrastructure.

***Responses re Oral Histories from Q.10***

- William Hart story;
- As written before the little people the little airlines;
- Probably the old D.C.A messes which used to be scattered about inland & northern Australia together with some of the characters who lived in them;
- The role of the technical officer in the maintenance of airways equipment in remote and diverse locations in all weather conditions;
- The current operational front line military pilots are not having their stories told and published, This would be a shame to see those stories not see the light of day;
- Personal stories of former WW2 RAAF personnel living in Nhill recorded as living history. To also record the perspective of town people who had contact with the Base.

***Responses re Objects from Q.10***

- Moorabbin where I am involved, a rare DC-2 from 1934, a rare original pre-war DC-3 from 1941, are displayed outside, as are a Vickers Viscount and a Bristol Freighter. These are all rare and important relics of our Civil Air Transport heritage, yet they are at risk of being lost due to the constant action of the outside elements;
- The WW 2 relics at Truscott;
- Old equipment;
- The technology used to provide the air traffic control services, I was involved in projects for my last 5 yrs with Airservices and we throw out tonnes of material in this time with the modernisation of air traffic services;
- Out-of-print books at libraries are often weeded if not borrowed. There are fewer and fewer old books held in libraries;
- Ansett Airways-folded 2001 - panel boards on walls with signatures of aircrew arrival into Tullamarine.

***Responses re Community from Q.10***

- The plight of residents in remote and isolated communities and the role that aviation played to address these issues;
- Use of aircraft to fly to the remote areas of Australia and typically land in the main streets of some smaller towns is not a well-known aspect of aviation heritage;
- Aviation happening in the rural sector in Australia as well;
- Documentary or photographic material held by veterans and/or their families;

- RSL clubs across Australia often hold important military aviation material but this is not recorded anywhere.

***Responses re Manufacturing from Q.10***

- Outstanding inventiveness, history of the over 60 aircraft designed built flown in Australia and the metal testing e.g. the 87 complete Mustangs and I think 30 wings destruction tested to give empirical data on metal fatigue;
- Manufacturing organisations, for example G.A.F. and C.A.C;
- World War 2 aircraft production and the companies associated with it.

***Responses re Development from Q.10***

- Melbourne has an Aviation Museum which includes some material on development and progress through the years;
- Pre-Airservices;
- The role of government agencies in the development and support of civil aviation in Australia.

***Responses re Defence from Q.10***

- Use of civil aerodromes for training in WW2 (eg., Cunderdin in WA);
- The bombing of Darwin on 19th Feb 1942 and subsequent 64 raids through until 1944 are only now being recognised as a significant moment in our National History. The Society has a major collection of artefacts and aircraft from that period;
- The work of the aviation element of the ADF in peacetime in Australia, including disaster relief and protection of major events such as the 2000 Olympics.

***Responses re Technology and Innovation from Q.10***

- The old stories of early Aerodrome Inspection and survey techniques;
- Outstanding inventiveness, history of the over 60 aircraft designed built flown in Australia and the metal testing eg., the 87 complete Mustangs and I think 30 wings destruction tested to give empirical data on metal fatigue.

***Responses re Records from Q.10***

- Aviation regulations, advisory and accident investigations;
- Historical government records.

***Responses re Routes from Q.10***

- Not well known was the decade long involvement of the ANAC with BCPA running air services to NZ, US and Canada.

#### **4.10 Question 11**

With reference to Question 11, *"Do you know of any people or organizations that hold important private collections of aviation heritage? Please describe them briefly below"*, analysis of the response has garnered a substantial number of organisations and personalities who have private collections of aviation material.

Also, a number of people have been identified as having valuable stories and experiences relating to aviation. These will have to be followed up with the survey respondents to conform to ethical and privacy guidelines.

##### ***Responses re Museums Holding Important Collections from Q.11***

- Qantas Museum Longreach and Sydney;
- Ansett Museum, Melbourne;
- TAA Museum, Melbourne;
- State Museums, archives and historical societies;
- Australian Aircraft Restoration Group at Moorabbin Airport operate Australia's oldest Volunteer run Aviation Museum trading as "The Australian National Aviation Museum"- the collection has over 50 historic aircraft and 30 display engines;
- Aviation Historical Society of Australia Inc;
- The Darwin Military Museum;
- Araluen Aviation Museum;
- National Film and Sound Archive - has old videos of air traffic control in Sydney in the 70s and possible other important pieces;
- Australian Aviation Hall of Fame (AAHOF) Wagga Wagga;
- SA Aviation Museum;
- RAAF Bullcreek Museum.

##### ***Responses re Individuals Holding Important Private Collections from Q.11***

(Individual's details removed from this report)



#### **4.11 Question 12**

Question 12 asked *"Is there someone you think we should interview so that we can record their special aviation knowledge and experiences? Please describe them briefly below"*, to which 34 out of 113 respondents answered.

A broad list of names has been suggested for recording of oral histories. It reflects a wide range of individuals, from family members of aviation pioneers to people with long experience and involvement at many levels in the aviation industry. Many of those named will have very important and significant stories to tell. (Individual's details removed from this report).

## 5.0 Further Analysis of Aviation Heritage Sources

### 5.1 Content Analysis

The Stage One Report scoped the major sources of aviation heritage and identified key themes in aviation history. For the purposes of developing the digital portal content this content was further analysed in order to identify and summarise its core concepts and themes and to reflect the potential nature of portal content. The following tables list the key themes, areas and concepts identified.

#### ***Primary Historic Themes***

- |                      |             |
|----------------------|-------------|
| • Communication      | • Isolation |
| • Community Building | • Modernity |
| • Defence            | • Safety    |
| • Empire             | • Security  |
| • Environment        | • Tourism   |
| • Identity           | • Training  |
| • Innovation         |             |

#### ***Museum Collections: Types***

- |                      |                        |
|----------------------|------------------------|
| • Archives           | • Personal Effects     |
| • Collections        | • Uniforms             |
| • Documents          | • Commemorative Coins  |
| • Diaries            | • Books                |
| • Manuscripts        | • Ephemera             |
| • Films              | • Literature           |
| • Photos             | • Maps                 |
| • Oral/Audio Stories | • Objects - Aircraft   |
| • Art                | • Objects - Misc Large |
| • Portraits          | • Objects - Misc Small |
| • Posters            | • Objects - Technology |

#### ***Places and Buildings***

- |              |                |
|--------------|----------------|
| • Airports   | • Hangers      |
| • Aerodromes | • Headquarters |

- Airfields
- Airstrips
- Bases
- Crash Sites
- Houses
- Memorials
- Routes

***Organisations***

- Airlines
- Air Traffic Services
- Defence
- Government
- Aeromedical
- Agriculture
- Firefighting
- Maritime
- Religious
- Tourism
- Maintenance
- Manufacturing
- Research
- Safety
- Service Providers
- Supply
- Technology

***Technology***

- Communications
- Control Towers
- Flight Service Consoles
- Navigation
- Radar
- Safety

***People***

- Aviators
- Heroes
- Legends
- Founders
- Pioneers
- Inventors
- Researchers
- Technicians
- Photographers
- Sponsors

***Aircraft***

- Manufacturers
- Civil
- Military
- Aeromedical
- Agriculture
- Aquaculture
- Firefighting
- Maritime
- Religious
- Tourism
- Engine Type
- Wing Type
- Heritage

## 5.2 Analysis of the Airways Museum and Civil Aviation Historical Society Website Content

The Airways Museum website content was analysed in order to identify the range of content available on the website and to help identify what might enrich the content of the Airservices digital portal.

### ***Major themes identified on the Airways Museum website include:***

- Air Traffic Services: Tower Control, Approach Control, Enroute Control, Aeradio/Flight Service;
- Air/ground and ground/ground communications equipment;
- Radio navigation beacons and radar;
- Airport lighting and visual approach guidance;
- Flight calibration of navigation aids.

As expected, the site contains many and varied photographs related to the above themes. Based on the attribution references listed with photos on the site, the photos appear to be drawn from approximately 25 different collections. Some of these collections are attributed to The Airways Museum and Civil Aviation Historical Society, others appear to be used with permission of the collection owner or trustee. The majority of photos accompany a background story or information. Although there are no aircraft in this museum, there are numerous aircraft photos on the website.

The Airways Museum website was also analysed using VOSON, an Internet network analysis tool, which determined that there were 51 websites that currently contain links back to it (Figure 14). Because the Airways Museum site uses a frame structure it was difficult to analyse out-going links, but there appears to be approximately 50 outbound links to other websites. The Australian National Aviation Museum, TAA Museum and Wings Away Museum were included in the analysis purely for comparison sake. The dots clustered around each website in the image below represent external websites that have links back to these named websites.

*Possible Digital Portal Objects Currently on Airways' Museum Website*

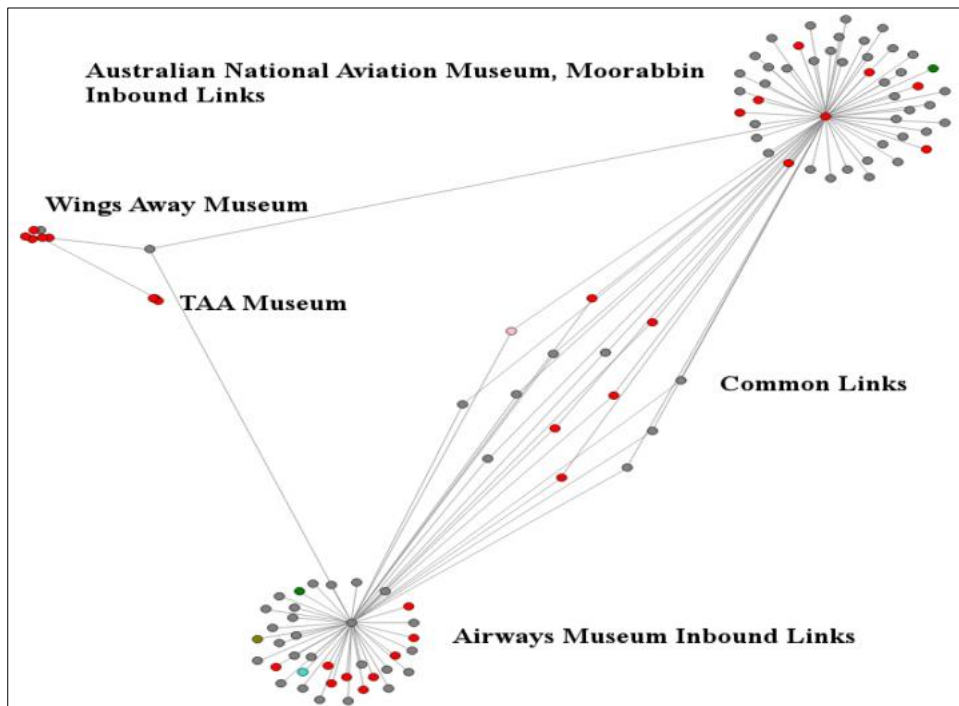


Figure 14: VOSON Internet analysis map showing number of inbound links to the Airways Museum website from other websites.

- Historic film, movie and audio recordings;
- Aviation pioneers, heroes, legends, founders, inventors, researchers, technicians, photographers, sponsors;
- Register of Aerodromes (PDF)
- Before (historic) and after (modern) photos of runways, airports and terminal buildings still in use (ground level and aerial photos);
- Historic hangars and buildings no longer in use or now museums;
- Flying boats;
- Selected other aircraft photos (numerous types);
- DCA's historic aircraft;

- Navigation equipment and aids, e.g., radio towers, controls towers, radar, aeradio, signal lamps etc.;
- Firefighting equipment, evolution of fire trucks, equipment etc.

### 5.3 Aviation Heritage Places

The Stage One Report lists and describes a variety of National and Commonwealth listed aviation related heritage places. These heritage places have now been listed together in a single Excel spreadsheet for use in the development of the digital portal listing the following details for each site:

- |                      |                 |
|----------------------|-----------------|
| 1. Type              | 5. State        |
| 2. Details           | 6. Legal Status |
| 3. Heritage Register | 7. URL.         |
| 4. Location          |                 |

The heritage places include items described and listed under the following categories:

- |                            |                          |
|----------------------------|--------------------------|
| 1. Aerodrome               | 14. Hanger               |
| 2. Airbase                 | 15. Headquarters         |
| 3. Airfield                | 16. Laboratory           |
| 4. Airport                 | 17. Maintenance Facility |
| 5. Airstrip                | 18. Memorial             |
| 6. Antenna                 | 19. Mess                 |
| 7. Archaeology Site        | 20. Precinct             |
| 8. Aviation Complex        | 21. QANTAS               |
| 9. Barracks, Buildings     | 22. RAAF Base            |
| 10. Bunker                 | 23. Radar                |
| 11. Control Tower          | 24. Transmitting Station |
| 12. Cottage                | 25. Wreck Site.          |
| 13. Flying Training School |                          |

## 5.4 Aviation Websites

Approximately 27 websites have been identified which are termed as 'aviation museums' or aviation museum portal sites (Figure 15). When closely examined, ten of these sites had little or no content relevant to the current project, another four have a small number of images of varying quality, and twelve have considerable or extensive online photo collections, again of varying quality.

Most of the photos are of aircraft, aircraft engines or aircraft components. There are some photos of other aviation heritage items. Access to copyrighted material and website images will need to be negotiated individually with the respective museums and collections owners. The websites are a mix of private collections, military owned or associated and museum owned. Other than a copyright disclaimer on most of the sites, there are no copyright policies listed on the sites.

Figure 15: Table of Aviation Heritage Websites.

State	Type	Aviation Museums	Online Collection	Theme
VIC	Civil	Airways Museum & Civil Aviation Historical Society	Extensive	Innovation
VIC	Civil	TAA Museum	Extensive	Multiple
NSW	Military	Fleet Air Arm Museum, Nowra	Extensive	Defence
NSW	Military	Fighter World Aviation Museum	Extensive	Defence
VIC	Military	RAAF Museum, Point Cook	Extensive	Defence
ACT	Military	Australian War Memorial	Extensive	Defence
QLD	Mixed	Queensland Air Museum, Caloundra	Extensive	Defence
NSW	Mixed	Temora Aviation Museum	Extensive	Multiple
NT	Mixed	Darwin Aviation Museum	Extensive	Multiple
SA	Mixed	South Australian Aviation Museum	Extensive	Multiple
VIC	Mixed	Australian National Aviation Museum (Moorabbin Airport)	Extensive	Multiple
WA	Mixed	Aviation Heritage Museum, Perth	Extensive	Multiple
VIC	Civil	Australian Gliding Museum	Fair	Community Building
AUS	Military	Fleet Air Arm Association of Australia	Fair	Defence



## Connecting the Nation: Australia's Aviation Heritage

SA	Mixed	Classic Jets Fighter Museum, Adelaide	Fair	Defence
NSW	Mixed	Powerhouse Museum	Fair	Multiple
NT	Civil	Central Australian Aviation Museum - Alice Springs Central	Insignificant	?
WA	Civil	Beverley Aeronautical Museum and Information Centre	Insignificant	?
QLD	Military	Royal Australian Air Force Townsville Museum	Insignificant	Defence
VIC	Mixed	Ballarat Aviation Museum	Insignificant	?
NSW	Mixed	Australian Aviation Museum, Bankstown	Insignificant (text, few photos)	Multiple
QLD	Civil	Qantas Founders Museum, Longreach	Minimal	Empire
NSW	Civil	Luskintyre Airfield Museum	Minimal	Isolation
QLD	Civil	Hinkler Hall of Aviation, Bundaberg	Some	Identity
NSW	Mixed	Historical Aircraft Restoration Society	Some	Connecting the Nation
NSW	Military	Camden Museum of Aviation	Under Construction	Defence

### 5.5 Analysis of the QANTAS, TAA and ANSETT Website Content

Although there are two physical museums related to QANTAS, there is very little heritage content on the associated websites. Likewise, ANSETT has a physical museum, but no heritage content on their website. The TAA website however includes both written and photo content about both QANTAS and ANSETT. It also includes a reasonable amount of written historical information and photos about TAA on its website, but the photos are quite small and of low resolution.

## **6.0 Digital Portal Development- Scoping**

### **6.1 Background**

The thematic history identifies themes, specific locations and individuals and narratives or anecdotes that could be used in development of website content. The Stage 1 report identified sites and collection material relevant to subject area. As the report notes, collection material is highly dispersed.

### **6.2 Content Types**

Content for the digital portal may include:

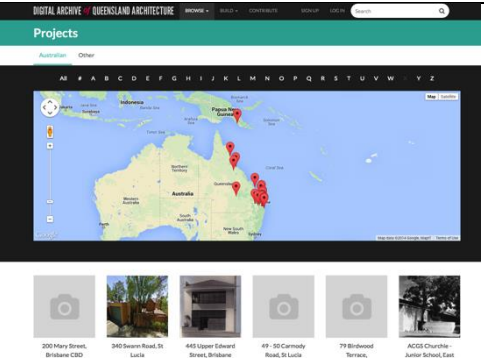
- thematic structure and descriptions
- catalogues/mapping of of collections (dispersed collection holders)
- identification and interpretation of archival material
- identification and interpretation of structures/buildings
- identification and interpretation of sites/locations/places
- historical biographical information about individuals and organisations
- oral histories (existing and recorded as part of the project).

Ability to map sites and connect them with collection items, images and oral histories and to make timelines is desirable.

## 6.3 Project Benchmarking

### General Approach

The following are provided as examples of websites using features identified as desirable for the Connecting the Nation Digital Heritage Portal; mapping, inclusion of oral history content, aggregation, collaboration and timelines. The features identified as most desirable may be used to inform the development of the portal.

<p><b>Interactive Maps:</b></p>	
<p><b>Digital Archive of Queensland Architecture</b></p> <p><a href="http://qldarch.net/beta/#/">http://qldarch.net/beta/#/</a></p> <p>Build your own map. Simple Google map. Users are able to drop pins using a search box of items included on the web page, also can add other items with location information.</p>	

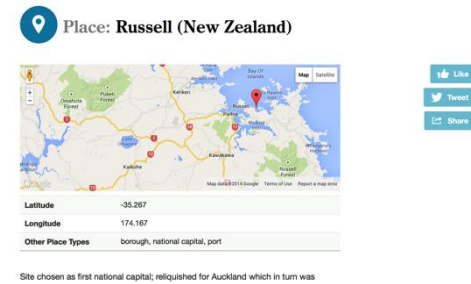
### Museum of New Zealand Te Papa Tongarewa

<http://collections.tepapa.govt.nz>

Collection items include related information display with links to 'place' or 'people'. Place connects through to map with pin identifying location.

Place is a category able to be searched to connect back to other collection items.

Also shows related objects link to that or similar location.



### State Library of NSW

Geographic location of some collection items shown on item record in collection webpage. Google map with pins. Place is not a search option and no links to other items.



## Dictionary of Sydney

<http://trust.dictionaryofsydney.org/about-the-trust/>

Variety of uses of maps: navigable overlays, plus curated Google maps with links to further information.



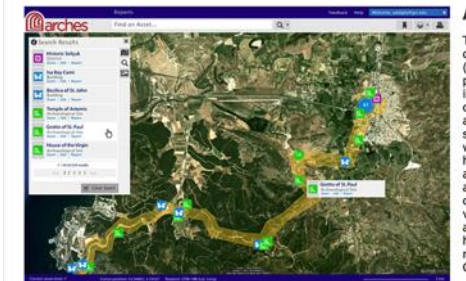
## Arches: Heritage Inventory & Management System

Getty

*Geospatial information system*

<http://archesproject.org>

Open source, web- and geospatially based information system that is purpose-built to inventory and manage immovable cultural heritage.



## Mapping Our Anzacs

<http://mappingouranzacs.naa.gov.au/map.aspx>

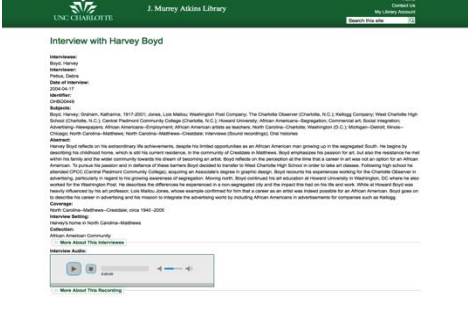
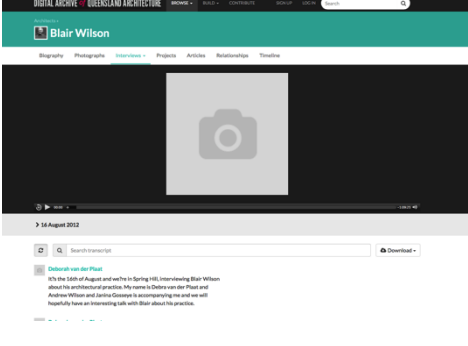
*Mapping our Anzacs* is a tool to browse records of service in the Australian Army during World War I according to the person's place of birth or enlistment- giving a new way of seeing Australia's involvement in World War I.

Utilises the over 375,000 World War I service records in the National Archives. Includes further searchability; can see the full service record, other people who enlisted in the same place, next of kin of the same name, and so on.

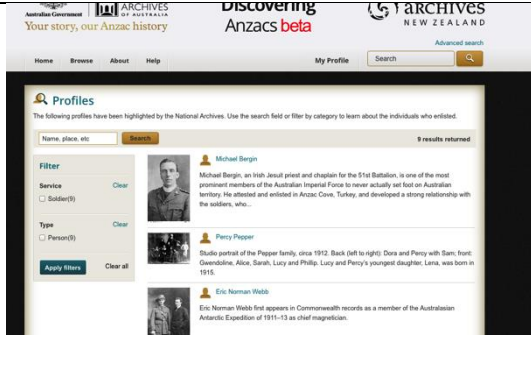
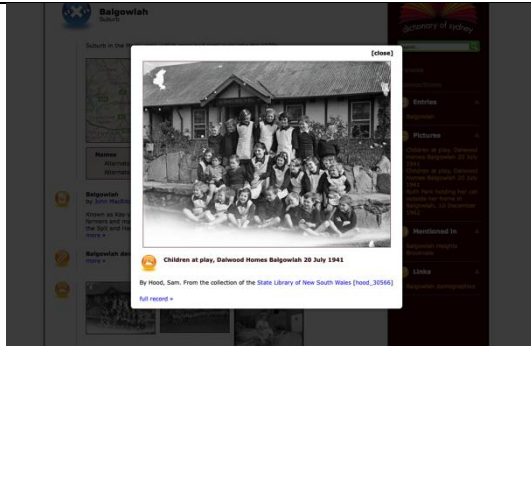
Created using the [Google maps API](#) and the Google geocoding service.



## Connecting the Nation: Australia's Aviation Heritage

<h3>Oral History</h3>	
<h3>UNC Charlotte</h3> <p><a href="http://nsv.uncc.edu/interview/ohbo0449">http://nsv.uncc.edu/interview/ohbo0449</a></p> <p>Audio file displayed as catalogue info plus transcript.</p>	
<h3>Digital Archive of Queensland Architecture</h3> <p><a href="http://qldarch.net/beta/#/interviews">http://qldarch.net/beta/#/interviews</a></p> <p>Thumbnail menu. Single page of audio with transcript.</p> <p>No catalogue information as in previous example.</p>	

## Connecting the Nation: Australia's Aviation Heritage

<b>Aggregation</b>	
<b>Discovering Anzacs</b>  <a href="http://discoveringanzacs.naa.gov.au/about/">http://discoveringanzacs.naa.gov.au/about/</a>  Site contains collected records from a number of Aust. and NZ Govt. institutions.  No links to external collections sites.	
<b>Dictionary of Sydney</b>  <a href="http://trust.dictionaryofsydney.org/about-the-trust/">http://trust.dictionaryofsydney.org/about-the-trust/</a>  Developed as a permanent historical digital repository, the Dictionary gathers resources from multiple repositories.  Entries based on story or site content with selected associated documents shown with links to collection holding websites.	



## Connecting the Nation: Australia's Aviation Heritage

### Lives of the First Word War: DC Thomson Family History and IWM.

<https://livesofthefirstworldwar.org>

DC Thomson Family History and IWM.

Aggregating platform that brings material from museums, libraries, archives and family collections (co-creation) from across the world together in one place.

Paying users can access 500 million military and genealogy records.



### Collaborative

### Lives of the First Word War: DC Thomson Family History and IWM.

<https://livesofthefirstworldwar.org>

Includes facilities for co-creation and relies heavily on contributors material.

Registered users (paying users) can upload documents, search from integrated collections, add to records and build communities connecting records and events.

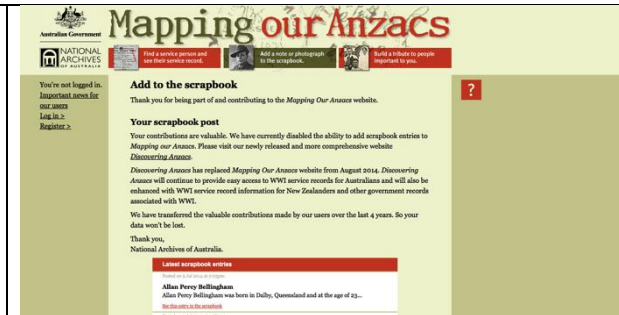


## Connecting the Nation: Australia's Aviation Heritage

### Mapping Our Anzacs

<http://mappingouranzacs.naa.gov.au/scrapbook.aspx>

*Mapping our Anzacs* includes scrapbook facility for users to post information using a Tumblr format.



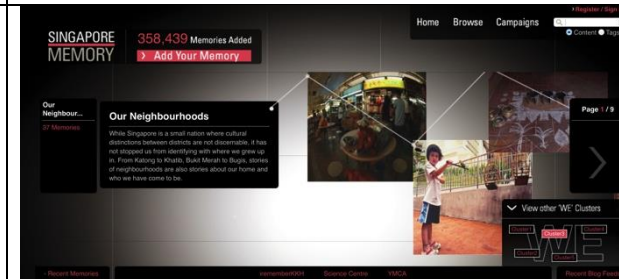
### Singapore Memory Portal

<http://www.singaporememory.sg>

Platform of sorts for gathering of images and memories in comment or tag form. Organised into themes. Includes other material as downloads- books etc.

Not mapped but places named and appear to be grouped. Contributors leaving images of places and comments of the values they attach to them.

Hard to navigate and a little dispersed. Needs an overview perhaps to aid navigation.

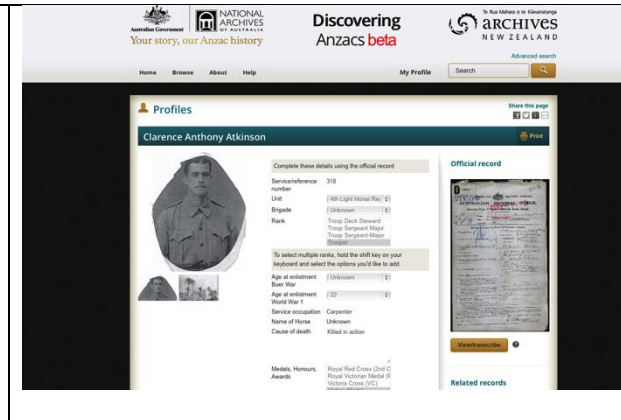


## Connecting the Nation: Australia's Aviation Heritage

### Discovering Anzacs

<http://discoveringanzacs.naa.gov.au/help/#contribute>

Registered users can contribute information to profile pages, share memories, upload images etc and link related records. Use of moderators.



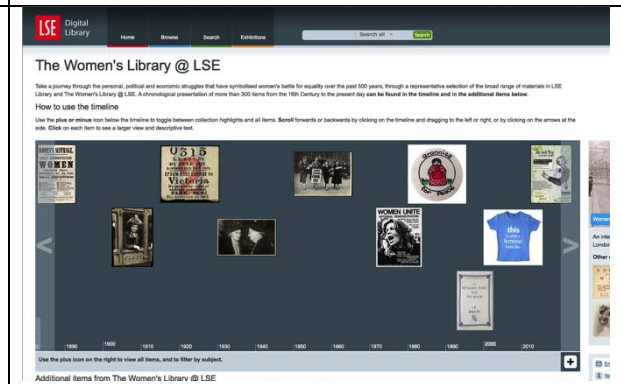
### Timeline:

#### London School of Economics,

#### The Women's Library collection:

<http://digital.library.lse.ac.uk/collections/thewomenslibrary>

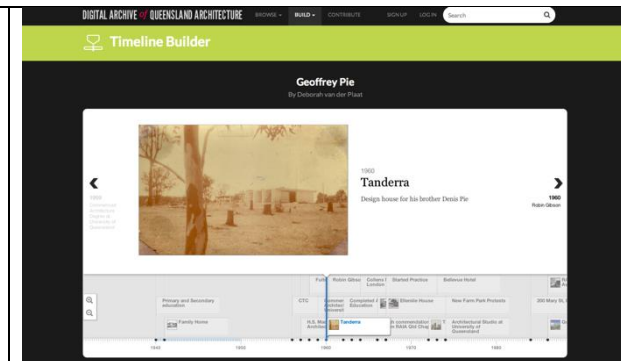
Collection items shown as an image along an interactive timeline. Includes sorting options.



### Digital Archive of Queensland Architecture

<http://qldarch.net/beta/#/ugc/timeline/edit>

Build your own timeline. Plot data on a timeline and build temporal relationships.

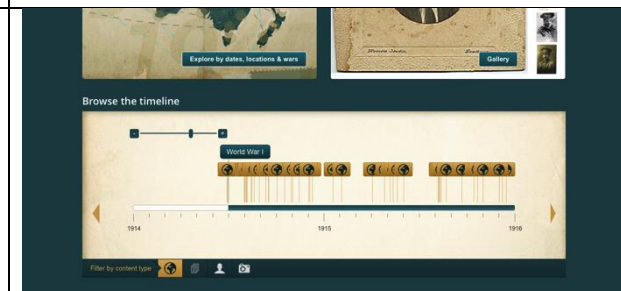


### Discovering Anzacs

<http://discoveringanzacs.naa.gov.au/home/>

Home page includes timeline with options to display world events, records, people or images.

Individual records also include interactive map and timeline options.




## Sites Using Omeka



The Rockefeller Foundation site is outlined below as an example of a comprehensive Omeka site containing both thematic information and collection items. Other Omeka sites with other capabilities such as contribution facility are included below as examples of what could be added to an Air Services Australia site.

Further examination of Omeka's functionality and capacity and the available collection data is required. An extensive list of sites is shown here:

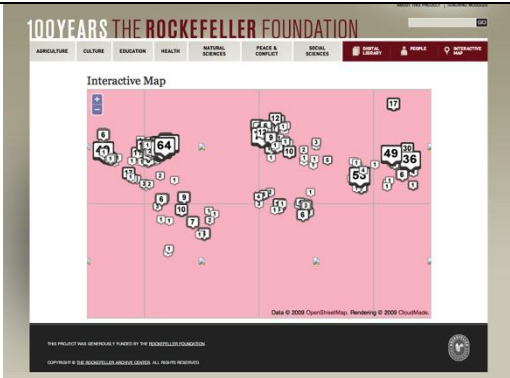

[http://omeka.org/codex/Sites\\_Using\\_Omeka](http://omeka.org/codex/Sites_Using_Omeka)

Site	Features	Drawbacks	
<p><b>The Rockefeller Foundation-centenary site.</b></p> <p><a href="http://rockefeller100.org">http://rockefeller100.org</a></p> <p>Omeka Plugins: Exhibit Builder, CVS import, Geolocation, GoogleAnalytics, Biographical, Simple Pages, SolrSearch</p>	<p>Includes interactive map and geographic info search capabilities in digital library.</p> <p>Display and interpretation of primary documents/archival collection.</p> <p>Includes only a section of total collection.</p> <p>Content divided into 7 themes (on banner and home page scroll).</p> <p>Additional content sections at side bar and footer eg: 'Evolution of a Foundation' and 'People'.</p>	<p>Use of single collection-not aggregation.</p> <p>No co-creation facility.</p> <p>No visual display of timelines</p>	

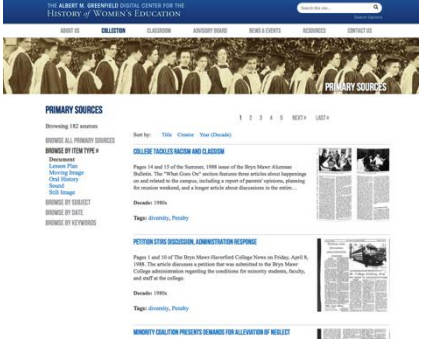
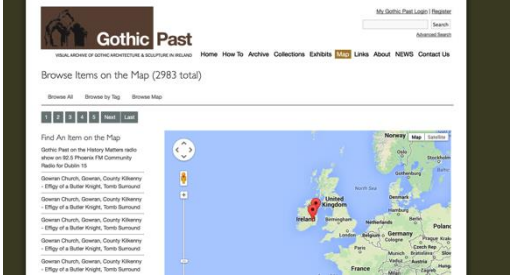
## Connecting the Nation: Australia's Aviation Heritage

Site	Features	Drawbacks	
	Teaching modules.		
	<p><b>Digital Library</b></p> <p>Landing page with introductory description- links through to collection divided into 'Documents', 'Images' and 'Videos'.</p> <p>Includes search box.</p> <p><b>Items include:</b> Tags (links). Text items include PDF download.</p>		
	<p><b>Search</b> Includes- creator, date, geographic term, item type and tagged- with suggested options (see screen shot below).</p>		

## Connecting the Nation: Australia's Aviation Heritage

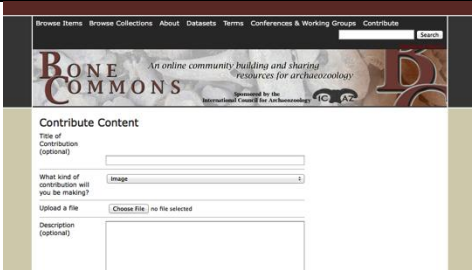
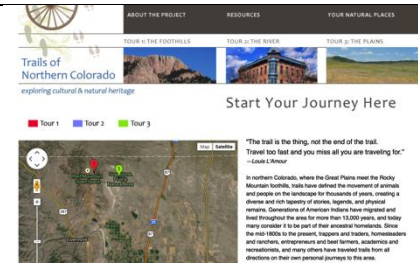
Site	Features	Drawbacks	
	<p><b>Interactive Map.</b> Using Open Street Map (not working..?).</p> <p>Location tagging of country only.</p> <p>Tag displays number of items- also in a linked list when hovering over tag (appears to be images only).</p>		
<p><b>Albert M Greenfield Digital Centre for the History of Women's Education</b></p> <p><a href="http://greenfield.brynmawr.edu">http://greenfield.brynmawr.edu</a></p> <p>Omeka Plugins:</p>	<p>Site includes:</p> <p>Thematic stories- 'exhibits'.</p> <p>Collection of primary sources with a number of search options.</p> <p>Includes photos, documents etc.</p> <p>Resources page with further info links.</p>	<p>Drawbacks:</p> <p>Use of single collection.</p> <p>No timelines or mapping options.</p> <p>No co-creation facilities.</p>	

## Connecting the Nation: Australia's Aviation Heritage

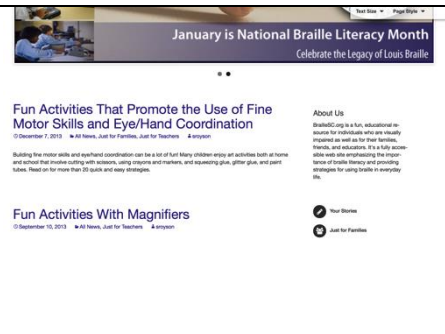

Site	Features	Drawbacks	
Docs Viewer, Dropbox, Exhibit Builder, SimpleContactForm, Simple Pages, Simple Vocab.			
	Collection interface:		
<b>Gothic Past</b> <a href="http://gothicpast.com">http://gothicpast.com</a>  Plugins: Exhibit Builder, MyOmeka, Simple Pages, Geolocation, Simple Contact Form, Intense Debate	Includes collection items and links to dispersed collection items (limited).  Includes interactive map of site locations.		



## Connecting the Nation: Australia's Aviation Heritage

Site	Features	Drawbacks	
Comments, CSV Import, Social Bookmarking.			
<b>Alexandria Archives Bone Commons.</b> <a href="http://alexandriaarchive.org/bonecommons/about">http://alexandriaarchive.org/bonecommons/about</a>  Omeka Plugins: Exhibit Builder, Contribution.	Includes user contributions.  Datasets is an interface with larger datasets published in Open Context site. (ie a form of aggregation).  Includes search options for Open Context dataset.	Drawbacks:  Functionality of 'contribution' limited.	 <p>The screenshot shows the 'Bone Commons' website with a navigation bar at the top. Below the navigation bar is a banner with the text 'An online community building and sharing resources for archaeology'. The main content area is titled 'Contribute Content' and contains a form with fields for 'Title of Contribution (optional)', 'What kind of contribution will you be making?' (with a dropdown menu set to 'image'), 'Upload a file' (with a 'Choose File' button and 'no file selected' text), and 'Description (optional)'.</p>
<b>Fort Collins Museum of Discovery</b> <a href="http://www.fcmod.org/trails/">http://www.fcmod.org/trails/</a>  Plugins: Contribution, Geolocation, Social Bookmarking, Simple Pages.	Includes Tours with interactive map and descriptions.  Its not apparent what the contribution facility is..?		 <p>The screenshot shows the 'Trails of Northern Colorado' website. It features a navigation bar with 'ABOUT THE PROJECT', 'RESOURCES', and 'YOUR NATURAL PLACES'. Below the navigation bar are four tour thumbnails: 'TOUR 1: THE FOOTHILLS', 'TOUR 2: THE RIVER', 'TOUR 3: THE PLAINS', and 'TOUR 4: THE MOUNTAINS'. A section titled 'Start Your Journey Here' includes a map with three tour routes (Tour 1, Tour 2, Tour 3) and a text box with a quote: 'The trail is the thing, not the end of the trail. Travel too fast and you miss all you are traveling for.' -Leland Jensen. Below the quote is a paragraph of text about the history of trails in northern Colorado.</p>

## Connecting the Nation: Australia's Aviation Heritage

Site	Features	Drawbacks	
<b>BrailleSC</b> <a href="http://www.braillesc.org">http://www.braillesc.org</a>  Omeka with wordpress	Site doesn't function very well and some links inactive- possibly badly put together..?		
<b>Indian University Bloomington</b> <a href="http://collections.libraries.iub.edu/warof1812/timeline">http://collections.libraries.iub.edu/warof1812/timeline</a>	Collection items displayed within interactive timeline.		

## Appendix 1.1 Museums, Collections, Archives

State	Organisation	Types of Heritage	Themes Represented	Accessibility
ACT	Australian War Memorial	Aircraft, objects, ephemera, oral histories and records	Defence, Empire, Isolation	Public
ACT	CSIRO	Objects, Ephemera and records	Communication, innovation	Private
ACT	Geosciences Australia	Photographs, cartography	Environment	Public
ACT	National Archives Australia	Documents, ephemera, records and photographs	Communications, community building, defence, empire, environment, identity, innovation, modernity, safety, security, tourism and training	Public
ACT	National Film Sound Archive	Audio visual material and objects	Community building, defence, empire, identity, modernity and tourism	Public
ACT	National Library of Australia	Documents, ephemera, objects and oral histories	Communications, community building, empire, identity, innovation, modernity, safety, tourism and training	Public
ACT	National Museum of Australia	Aircraft, objects, documents, ephemera and photographs	Communications, community building, defence, empire, identity, innovation, modernity, safety and tourism	Public

# Connecting the Nation: Australia's Aviation Heritage

ACT	National Portrait Gallery	Artwork	Empire and identity	Public
ACT	Royal Australian Mint	Objects – Coins	Identity	Private
NSW	Australian Aviation Museum, Bankstown	Aircraft, objects and ephemera	Defence, empire, identity and training	Public
NSW	Australian National Maritime Museum	Photographs and ephemera	Defence and empire	Public
NSW	Butler Air Transport Museum Tooraweenah	Aircraft, objects and ephemera	Community building, identity and isolation	Public
NSW	Fighter World	Aircraft, objects and ephemera	Defence and empire	Public
NSW	Fleet Air Arm Museum	Aircraft, objects and ephemera	Defence	Public
NSW	Luskintyre Airfield and Aviation Museum	Aircraft	Defence	Private
NSW	Narromine Aviation Museum	Aircraft, objects and ephemera	Community building, isolation and training	Public

# Connecting the Nation: Australia's Aviation Heritage

NSW	Pay's Air Services – Col Pay Collection	Aircraft	Defence	Private
NSW	Powerhouse Museum	Aircraft, objects, documents, models, ephemera and photographs	Empire, identity, safety and tourism	Public
NSW	RAAF Museum, Point Cook	Aircraft , objects , ephemera	Defence, Empire and Training	Public
NSW	State Library NSW	Documents, ephemera, photographs and records	Communication and tourism	Public
NSW	Temora Aviation Museum	Aircraft	Defence	Public
NSW	The Camden Museum of Aviation	Aircraft, Engines and vehicles	Defence	Public
NSW	The Qantas Heritage Collection	Objects, ephemera, documents, photographs and records	Community building, empire, Identity, isolation, tourism and training	Public

# Connecting the Nation: Australia's Aviation Heritage

NSW	Tocumwal Historic Aerodrome Museum	Aircraft and objects	Defence	Public
NSW	Walcha Pioneer Cottage	Aircraft	Environment	Public
NT	Central Australian Aviation Museum	Aircraft, objects and ephemera	Community building, identity and isolation	Public
NT	Nevil Shute Memorial Library, Alice Springs	Books	Identity	Public
NT	Northern Territory Library	Documents, ephemera and photographs	Communication	Public
NT	Royal Flying Doctor Service, Alice Springs Tourist Facility	Aircraft, objects, memorabilia and ephemera	Community building, Identity and isolation	Public
NT	The Australian Aviation Heritage Centre, Darwin's Aviation Museum	Aircraft and objects	Defence	Public
NT	The Katherine Museum	Aircraft	Identity	Public

Connecting the Nation: Australia's Aviation Heritage

QLD	Australian Stockman's Hall of Fame	Objects, photographs and ephemera	Identity and isolation	Public
QLD	Caboolture Warplane Museum	Aircraft, objects, photographs and ephemera	Defence, empire and training	Public
QLD	Hinkler Hall of Aviation & Hinkler House Memorial Museum	Aircraft, objects, ephemera, photographs and building	Empire, identity and innovation	Public
QLD	Museum of Australian Army Flying	Aircraft, objects, photographs and memorabilia	Defence and empire	Public
QLD	Qantas Founders Outback Museum	Aircraft, objects, ephemera, records, photographs and documents	Community building, empire, identity, isolation, tourism and training.	Public
QLD	Queensland Air Museum	Aircraft and objects	Defence, empire, identity and training	Public
QLD	Queensland Museum Network	Aircraft, object, ephemera and photograph	Community building, empire and identity	Public
QLD	Queensland State Archives	Documents, records, ephemera and photographs	Safety	Public

# Connecting the Nation: Australia's Aviation Heritage

QLD	State Library of Queensland	Documents, records, ephemera and photographs	Community building, empire and environment	Public
QLD	The Beaufort Restoration	Aircraft	Defence and empire	Public
QLD	The Beck Museum	Aircraft, objects and ephemera	Defence and empire	Public
QLD	Townsville RAAF Museum	Aircraft, objects, ephemera, records and photographs	Defence, Empire and training	Public
QLD	Victoria Barracks Historical Society, Brisbane Inc. Queensland Military Memorial Museum	Objects, ephemera and photographs	Defence and empire	Public
SA	South Australian Aviation Museum	Aircraft, objects, ephemera, records and photographs	Communication, defence, empire, environment, safety, tourism and training	Public
SA	Greenock Aviation Museum	Aircraft, objects and ephemera	Defence and empire	Public
SA	Classic Jets Fighter Museum	Aircraft	Defence and empire	Public



# Connecting the Nation: Australia's Aviation Heritage

SA	State Library of South Australia	Documents, ephemera and photographs	Empire	Public
SA	South Australian Museum	Objects, photographs and ephemera	Environment	Public
SA	Minlaton Museum	Objects, photographs and ephemera	Identity and empire	Public
SA	Art Gallery of South Australia	Artwork	Identity	Public
VIC	Airways Museum	Objects, ephemera, documents and photographs	Communication, empire, environment, identity, innovation, isolation, modernity, safety and training	Public
VIC	Australian Gliding Museum	Aircraft	Tourism and training	Public
VIC	Australian National Aviation Museum	Aircraft, objects, ephemera and photographs	Defence, empire, training and tourism	Public
VIC	B-24 Liberator Restoration Australia	Aircraft, photographs and ephemera	Defence and empire	Public
VIC	Ballarat Aviation Museum	Aircraft, objects, ephemera and photographs	Defence and identity	Public
VIC	Friends of the Anson Museum	Aircraft, objects and ephemera	Defence and empire	Public

# Connecting the Nation: Australia's Aviation Heritage

VIC	Lake Boga Flying Boat Museum	Aircraft, objects, ephemera and photographs	Defence and empire	Public
VIC	Museums Victoria	Objects, ephemera, documents and photographs	Communications, community building ,empire, identity and innovation	Public
VIC	National Vietnam Veterans Museum	Aircraft, objects, ephemera and photographs	Defence and empire	Public
VIC	Nhill Aviation Heritage Centre	Aircraft, objects, photographs, ephemera and memorabilia	Communication, defence, empire and isolation	Public
VIC	Old Aeroplane Company	Aircraft	Defence and empire	Private
VIC	RAAF Museum, Point Cook	Aircraft, objects, photographs and ephemera	Defence, empire and training	Public
VIC	Sir Reginald Ansett Transport Museum	Objects, ephemera, documents and photographs	Community building, identity, isolation and tourism	Public
VIC	State Library of Victoria	Documents, ephemera and photographs	Empire and identity	Public
VIC	TAA Museum	Objects, records, documents, photographs and memorabilia	Identity, isolation, modernity and tourism	Public

# Connecting the Nation: Australia's Aviation Heritage

VIC	The Derelict Aircraft Museum	Aircraft	Defence	Private
WA	The Aviation Heritage Museum	Aircraft, objects, photographs and ephemera	Defence, identity, tourism and training	Public
WA	Beverley Aeronautical Museum and Information Centre	Aircraft, objects, photographs and ephemera	Identity, isolation and safety	Public
WA	State Library of Western Australia	Documents, ephemera and photographs	Identity	Public

## Appendix 1.2 Places on the Australian Heritage Database

NHL: National Heritage List

CHL: Commonwealth Heritage List

RNE: Register of National Estate (Defunct)

State	Site	List	Status	Themes Represented
ACT	Air Disaster Memorial, Pialligo Av, Oaks Estate	CHL, RNE	Others (CHL), Listed (RNE)	Safety
ACT	RAAF Base Fairbairn Group Glenora Dr , Majura,	CHL , RNE	Indicative (CHL), Listed (RNE)	Defence
EXT	Qantas Huts (former) Sydney Hwy , West Island Settlement, EXT	CHL, RNE	Listed	Defence, identity and isolation
NSW	Bankstown Airport Air Traffic Control Tower, Tower Rd, Bankstown,	CHL	Nominated	Communication
NSW	Bankstown Airport, Airport Av , Bankstown Airport	RNE	Indicative	Defence and community building
NSW	Camden Airport, Airport Rd Camden	RNE	Indicative	Tourism and training

Connecting the Nation: Australia's Aviation Heritage

NSW	Cottage rear Macquarie Grove House Macquarie Grove Rd Camden	CHL	Indicative	Defence and training
NSW	Hoxton Park Airport, Cowpasture Rd, Cecil Park	RNE	Listed	Defence and tourism
NSW	Llandilo International Transmitting Station Stoney Creek Rd , Shanes Park	CHL	Listed	Communication and innovation
NSW	Old Bar - Farquhar Inlet Old Bar Rd Old Bar	RNE	Listed	Empire
NSW	RAAF Base Richmond McNamara Av , Richmond RAAF Base	CHL, RNE	Listed	Defence and training
NSW	Sydney ( Kingsford Smith ) Airport Group Airport Dr , Sydney Airport	CHL, RNE	Indicative (CHL), Interim (RNE)	Empire, communication, innovation and modernity
NSW	Sydney Airport Air Traffic Control Tower General Holmes Dr, Sydney Airport	CHL	Nominated	Communication, innovation and modernity
NT	Daly Waters Aviation Complex, Daly Waters	RNE	Listed	Defence
NT	Parap Hangar 22 MacDonald St, Parap	RNE	Listed	Defence
QLD	Amberley RAAF Base Group Southern Amberley Rd Amberley	CHL, RNE	Listed	Defence

Connecting the Nation: Australia's Aviation Heritage

QLD	Archerfield Aerodrome Beatty Rd Archerfield	CHL , RNE	Indicative	Defence and empire
QLD	Archerfield Airport Administration Building, Grenier Dr, Archerfield	CHL ,RNE	Others(CHL), Listed (RNE)	Defence and empire
QLD	Archerfield Airport, Beatty Rd, Archerfield	NHL , CHL	Nominated	Communications and training
QLD	Eagle Farm Women's Prison and Factory Terminal Dr, Brisbane Airport	CHL, RNE	Indicative (CHL), Listed (RNE)	Defence
QLD	Longreach Airport, Landsborough Hwy, Longreach	NHL	Nominated	Community building, empire, identity, isolation, safety , training
QLD	QANTAS Hangar Longreach, Landsborough Hwy, Longreach	NHL	Listed	Community building, empire, identity, isolation, safety and training
QLD	Second World War Hangar No 7, Terminal Dr, Eagle Farm	NHL	Rejected	Defence
SA	Parafield Airport Air Traffic Control Tower Kittyhawk Ln, Parafield,	CHL	Nominated	Communication
TAS	Hobart Airport Air Traffic Control Tower, Tower Rd , Cambridge	CHL	Nominated	Communication

Connecting the Nation: Australia's Aviation Heritage

TAS	Launceston Airport Air Traffic Control Tower Evandale Rd, Western Junction	CHL	Nominated	Communication
TAS	Morrison Street Newsagency 5 Morrison St Hobart	RNE	Listed	Identity and tourism
VIC	Buildings 103 and 104, Essendon Airport Lionel St Airport West	CHL , RNE	Indicative (CHL), Listed (RNE)	Isolation
VIC	DSTO Aeronautical and Maritime Research Laboratory Lorimer St Port Melbourne	CHL, RNE	Indicative	Defence and innovation
VIC	Elementary Flying Training School No 11 (former) Samaria Rd, Benall	RNE	Indicative	Training
VIC	Essendon Airport Air Traffic Control Tower Wirraway Rd, Strathmore	CHL	Nominated	Communication
VIC	Essendon Airport Tullamarine Fwy , Strathmore	CHL, RNE	Indicative (CHL), Listed (RNE)	Defence, empire, isolation & innovation
VIC	Microwave Landing System Antennas at Melbourne Airport, Tullamarine Fwy, Melbourne Airport	NHL, CHL	Nominated	Innovation

Connecting the Nation: Australia's Aviation Heritage

VIC	Officers Mess - RAAF Williams Laverton Base Wrigley Pde , Laverton	CHL, RNE	Listed	Defence and empire
VIC	OTS Headquarters Williams Rd, Point Cook	RNE	Listed	Training
VIC	RAAF Base Complex Betka Rd, Mallacoota	RNE	Interim	Defence and empire
VIC	RAAF Base Point Cook, Aviation Rd, Point Cook	NHL , CHL , RNE	Listed	Defence and training
VIC	RAAF Williams Laverton - Eastern Hangars and West Workshops Precincts Tangmere Rd , Williams RAAF	CHL	Listed	Defence and empire
VIC	Victoria Barracks J Block St Kilda Rd , Southbank	CHL, RNE	Listed	Defence
VIC	Victoria Barracks Precinct St Kilda Rd , Southbank	CHL, RNE	Listed	Defence
WA	Albany Bell Castle Buildings 86 Guildford Rd Mount Lawley	RNE	Listed	Innovation
WA	C53 Wreck Site, Kalumburu	RNE	Indicative	Safety
WA	Kalumburu Airfield Kalumburu	RNE	Indicative	Defence



# Connecting the Nation: Australia's Aviation Heritage

WA	Maylands Aerodrome (former) Precinct 2 Swan Bank Rd Maylands	RNE	Indicative	Empire, isolation and innovation
WA	Truscott Airbase, Kalumburu	RNE	Indicative	Defence

### Appendix 1.3 State and Local Government Heritage Registers

State	Site	List	Theme represented
EXT	Wilkins Aerodrome, Antarctica	NA	Environment and identity
NSW	Arthur Butler Memorial Aerodrome Tooraweenah, Aerodrome Road, Tooraweenah	NSW Heritage	Community building, identity and isolation
NSW	Bankstown Aerodrome, Marion Street, Georges Hall, Bankstown	NSW Heritage	Defence
NSW	Billy Hart memorial Parramatta Park, Parramatta	NSW Heritage	Identity
NSW	Broadmeadow Aero Club (Incl. Former Main Hangar & Preparation Bay Building)	NSW Heritage	Training
NSW	Butler Airlines Hangar (Former), Warren Road, Gilgandra	NSW Heritage	Community building and identity
NSW	Camden Airport	NSW Heritage	Training
NSW	Moruya Airport and World War II Installations	NSW Heritage	Defence
NSW	Old Bar Airfield 0.5km off Old Bar Road, Old Bar, Greater Taree	NSW Heritage	Empire
NSW	Original Hangar (Temora Airport)	NSW Heritage	Defence

# Connecting the Nation: Australia's Aviation Heritage

NSW	Qantas House (No. 1 Chifley Square) 68-96 Hunter Street,	NSW Heritage	Identity and modernity
NSW	RAAF Hut (Former)	NSW Heritage	Defence
NSW	RAAF Rathmines	NSW Heritage	Defence
NSW	Southern Cross Memorial, Cooma	NA	Safety
NT	Conellan Airways Hangar	NA	Safety
NT	Daly Waters Aviation Complex, Daly Waters	NT Heritage	Defence
NT	De Havilland DH 114 Heron Aircraft	NT Heritage	Defence
NT	Former Katherine Airport	NT Heritage	Identity
NT	Lot 5601, Town of Darwin (Qantas/Guinea Airways Hangar)	NT Heritage	Defence
NT	Pine Creek Township Airstrip	NT Heritage	Defence
NT	WW11 Anti-Aircraft Searchlight (AASL) Battery Elizabeth River	NT Heritage	Defence
NT	WWII B-24J Liberator Aircraft Wreck	NT Heritage	Defence
NT	WWII Coomalie Airstrip	NT Heritage	Defence
NT	WWII Fenton Airfield	NT Heritage	Defence

## Connecting the Nation: Australia's Aviation Heritage

NT	WWII Gorrie Airfield Precinct	NT Heritage	Defence
NT	WWII Gould Airfield	NT Heritage	Defence
NT	WWII Gould Airfield Camp	NT Heritage	Defence
NT	WWII Hughes Airfield	NT Heritage	Defence
NT	WWII K5 Anti-Aircraft Battery Site	NT Heritage	Defence
NT	WWII Livingstone Airfield, Camp & Anti-aircraft Gun Site	NT Heritage	Defence
NT	WWII Long Airfield & associated camp	NT Heritage	Defence
NT	WWII Manbulloo Airfield Ops Centre & Abattoir	NT Heritage	Defence
NT	WWII Pell Airstrip Camp A, 4RSU, Workshop Stuart H'Way	NT Heritage	Defence
NT	WWII Quarantine Anti-Aircraft Battery Site	NT Heritage	Defence
NT	WWII Strauss Airstrip	NT Heritage	Defence
NT	WWII Strauss Airstrip, Anti-Aircraft Gun Emplacement	NT Heritage	Defence

Connecting the Nation: Australia's Aviation Heritage

NT	WWII Winnellie Camp Buildings, Sidney Williams Hut and the Bellman Aircraft Hangar at Royal Australian Show Society Grounds	NT Heritage	Defence
SA	Smith Brothers Memorial, James Schofield Drive, Adelaide, SA	NA	Isolation
QLD	Breddan Airfield, Gregory Developmental Road, CHARTERS TOWERS	QLD Heritage	Defence
QLD	Qantas Museum/Formers Qantas Hangar, Landsborough Highway, LONGREACH	QLD Heritage	Community building, empire, identity, isolation, safety and training
VIC	Ansett's First Hangar, Ballarat Road HAMILTON, Southern Grampians Shire	VIC Heritage	Community building, identity, isolation and tourism
VIC	B-24 Liberator Bomber - Hanger 2 Former Werribee Satellite Airfield, Cnr Farm & Old Geelong Roads, POINT COOK, WYNDHAM	VIC Heritage	Defence
VIC	B-24 Liberator Bomber A72-176, Cnr Farm and Old Geelong Roads, POINT COOK, Wyndham	VIC Heritage	Defence

# Connecting the Nation: Australia's Aviation Heritage

VIC	Bluestone Cottage & Ruinous Timber Dwelling, 2-88 Mt Cottrell Road PLUMPTON, MELTON SHIRE	VIC Heritage	Community building
VIC	Building No 104 - RAAF Base, Point Cook Road, POINT COOK, WYNDHAM	VIC Heritage	Defence
VIC	Building No 210 - RAAF Base, Point Cook Road, POINT COOK, WYNDHAM	VIC Heritage	Defence
VIC	CJ Melrose Memorial Cairn, 398-446 Clarkes Rd BROOKFIELD, Melton Shire	VIC Heritage	Identity and safety
VIC	CLIFTON HOMESTEAD COMPLEX, Clifton Road HAMILTON, Southern Grampians Shire	VIC Heritage	Community building
VIC	Department of Aircraft Production (Bristol) Beaufighter, Mk 21, A8-328, Moorabbin Air Museum, Second Avenue, KINGSTON	VIC Heritage	Defence
VIC	Former Ballarat Royal Australian Air Force (RAAF) Base, 1 AIRPORT ACCESS ROAD MITCHELL PARK, Ballarat	VIC Heritage	Defence and training
VIC	Former Essendon Technical School, 36 - 44 Buckley Street, ESSENDON,	VIC Heritage	Training
VIC	Former Point Cook RAAF Base, Point Cook Road, POINT COOK	VIC Heritage	Defence and training

# Connecting the Nation: Australia's Aviation Heritage

VIC	Hangar No 95 - R.A.A.F. Base - Point Cook, Point Cook Road, POINT COOK, WYNDHAM	VIC Heritage	Defence and training
VIC	Kyeema Memorial and environs, 9 Eyre Road (off Ridge Road), Mt Dandenong	VIC Heritage	Safety
VIC	Point Cook RAAF Complex, POINT COOK ROAD POINT COOK, Wyndham	VIC Heritage	Defence and training
VIC	Reg Ansett's House, 12 Learmonth Street HAMILTON, Southern Grampians Shire	VIC Heritage	Community building and identity
VIC	Strathbogie Aerial Navaid, Polly McQuinns Road Strathbogie, Strathbogie Shire	VIC Heritage	Communication
WA	Air Beef Abattoir and Aerodrome (ruins) and Glenroy Homestead Group (Glenroy Meatworks, Glenroy Abattoir), Glenroy Station, via Derby-Gibb River Rd West Kimberley	WA Heritage	Isolation
WA	Aircraft Hangar, Carnarvon Airport Carnarvon	WA Heritage	Empire and identity
WA	Airfield (Rifle Range (fmr)), 5 k S of Narembreen	WA Heritage	Defence
WA	Barloweerie Aerodrome, Meeberrie-Mt Wittenoom Rd on Pia Aboriginal Reserve Murchison	WA Heritage	Community building, isolation and training

# Connecting the Nation: Australia's Aviation Heritage

WA	Beverley Air Strip (Aerial Landing Ground), Off Bremner Rd, Beverley	WA Heritage	Defence
WA	Carnarvon Aerodrome, Babbage Island Rd Morgantown	WA Heritage	Empire and identity
WA	Corrigin Airstrip Site, Brookton Hwy 4 k W of Corrigin	WA Heritage	Community building and isolation
WA	Cunderdin Airfield (RAAF Station (fmr), Bellman Hangar and associated Buildings), 82 Aerodrome Rd Cunderdin	WA Heritage	Defence
WA	DCA Air Navigation Beacon, Narembreen	WA Heritage	Communication
WA	Derby Hostel (MMA Staff Quarters), 233-235 Villiers St Derby	WA Heritage	Community building, isolation and tourism
WA	Fleet Air Arm Aerodrome (fmr) (Caversham Racing Circuit, Middle Swan Aerodrome, Caversham Air Strip, Caversham Signal Station), West Swan Rd West Swan	WA Heritage	Defence
WA	Langley Park (Reserve 12510) Riverside Dr Perth	WA Heritage	Empire, identity and isolation
WA	Maylands Aerodrome (fmr) (WA Police Department Transport Section, WA Police Academy & Reserve), 21 Swan Bank Rd Maylands	WA Heritage	Community building and innovation



# Connecting the Nation: Australia's Aviation Heritage

WA	Mooliabeenie Airstrip, Bindoon Gingin Rd Mooliabeenie	WA Heritage	Defence
WA	Morning Valley Airstrip, Aldersyde-Kweda Rd Aldersyde	WA Heritage	Community building and isolation
WA	Perth Airport Hangars, Perth Domestic Airport (Maintenance Sheds, Ansett Aircraft Maintenance Complex), Millar Rd Belmont	WA Heritage	Tourism and safety
WA	Roy Hill Directional Beacon, Marble Bar Rd Nullagine	WA Heritage	Communication
WA	Royal Flying Doctor Service, House and Office (Royal Flying Doctor Service Base, Derby), Cnr Clarendon & Fairbairn Sts Derby	WA Heritage	Isolation
WA	Telecom site and fmr aircraft factory, 15 Crowther St Bayswater	WA Heritage	Defence
WA	Town Aerodrome/First Golf Course (site), Banninster St area, Narrogin	WA Heritage	Defence and training
WA	Truscott Air Base (ANJO), Anjo Peninsula Doongan	WA Heritage	Defence
WA	Van Emmerick Air Crash - Site of, Hawkstone Peak	WA Heritage	Safety
WA	World War Two Airfield (Pinjarra North), Fairbridge Rd Fairbridge	WA Heritage	Defence

Connecting the Nation: Australia's Aviation Heritage

WA	Wyalkatchem Airfield, Wyalkatchem to Tammin Rd Wyalkatchem	WA Heritage	Community building and isolation
----	---	-------------	-------------------------------------

## References

---

<sup>1</sup> Australian Heritage Commission 2001, Australian historic themes: a framework for use in heritage assessment and management, The Commission, Canberra.

<sup>2</sup> Pigott, P.H., Australia. Planning Committee on the Gallery of Aboriginal Australia & Australia. Committee of Inquiry on Museums and National Collections 1975, *Museums in Australia 1975: report of the Committee of Inquiry on Museums and National Collections including the report of the Planning Committee on the Gallery of Aboriginal Australia*, Australian Government Publishing Service, Canberra.

<sup>3</sup> Air Navigation (General) Regulations, 1930, accessed 20 September 2014 <[bailii.austlii.edu.au/ie/legis/num\\_reg/1930/0026.html](http://bailii.austlii.edu.au/ie/legis/num_reg/1930/0026.html)>

<sup>4</sup> Department of the Environment, 2011, *Australian Heritage Database: Llandilo International Transmitting Station*, accessed 15th July 2014 <[http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place\\_detail;search=state%3DNSW%3Blist\\_code%3DCHL%3Blegal\\_status%3D35%3Bkeyword\\_PD%3D0%3Bkeyword\\_SS%3D0%3Bkeyword\\_PH%3D0;place\\_id=106101](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=state%3DNSW%3Blist_code%3DCHL%3Blegal_status%3D35%3Bkeyword_PD%3D0%3Bkeyword_SS%3D0%3Bkeyword_PH%3D0;place_id=106101)>

<sup>5</sup> Brasch, N., 2001, *Royal Flying Doctor Service of Australia*, Heinemann, Port Melbourne.

<sup>6</sup> Department of the Environment, 1991, *Australian Heritage Database: Connellan Hangar*, accessed <[http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place\\_detail;search=keyword%3Dhangar%3Bkeyword\\_PD%3Don%3Bkeyword\\_SS%3Don%3Bkeyword\\_PH%3Don%3Blatitude\\_1dir%3DS%3Blongitude\\_1dir%3DE%3Blongitude\\_2dir%3DE%3Blatitude\\_2dir%3DS%3Bin\\_region%3Dpart;place\\_id=16403](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=keyword%3Dhangar%3Bkeyword_PD%3Don%3Bkeyword_SS%3Don%3Bkeyword_PH%3Don%3Blatitude_1dir%3DS%3Blongitude_1dir%3DE%3Blongitude_2dir%3DE%3Blatitude_2dir%3DS%3Bin_region%3Dpart;place_id=16403)>

<sup>7</sup> Brogden, S., 1999, *Australia's Two-Airline Policy*, Cambridge University Press for Melbourne University Press, New York, 1968. See also John Gunn, *Contested Skies: The History of Trans-Australia Airlines, 1946-1992*, Queensland University Press, St. Lucia.

<sup>8</sup> Simpson, M., 2004, *On the Move: a history of transport in Australia*, Powerhouse Publishing, Sydney.

---

<sup>9</sup> Dupas R., n.d., *John Hopton Collection*, 1000aircraftphotos.com, accessed 14<sup>th</sup> July 2014, <<http://www.1000aircraftphotos.com/Contributions/Hopton/Hopton.htm>>

<sup>10</sup> Naughton, R., 2000, *The Duigan Pusher Biplane of 1909-11 by Keith Meggs*, Hargrave: Aviation and Aeromodelling-Independent Evolutions and Histories, The Centre for Telecommunications and Information Engineering, Monash University, accessed 1<sup>st</sup> August 2014, < [http://www.ctie.monash.edu.au/hargrave/duigan\\_ahs\\_meggs.html](http://www.ctie.monash.edu.au/hargrave/duigan_ahs_meggs.html) >

<sup>11</sup> See "Spitfire aircraft sound recording", Australian War Memorial, < <http://www.awm.gov.au/collection/S05933/>>

<sup>12</sup> See "Airservices Australia: Environment", Airservices Australia, <<http://www.airservicesaustralia.com/environment/>>

<sup>13</sup> See "Aerial Photography", Geosciences Australia, < <http://www.ga.gov.au/scientific-topics/earth-obs/accessing-satellite-imagery/aerial-photography> >

<sup>14</sup> Bmag, n.d., *Restoring Smithy's Southern Cross*, Brisbane Airport Corporation, accessed 12 July 2014, <<http://www.bne.com.au/sites/all/files/content/files/bmag265%20pg%2028.pdf>>

<sup>15</sup> See "Duigan Biplane, Mia Mia, Victoria, 1910", Museum Victoria, < <http://museumvictoria.com.au/collections/items/405751/aeroplane-duigan-biplane-mia-mia-victoria-1910/> >

<sup>16</sup> Op cit Brasch S., 2001.

<sup>17</sup> Department of the Environment, 1991, *Australian Heritage Database: Microwave Landing System Antennas at Melbourne Airport*, accessed 28<sup>th</sup> June 2014, < [http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place\\_detail;search=keyword%3Dmicrowave%3Bkeyword\\_PD%3Don%3Bkeyword\\_SS%3Don%3Bkeyword\\_PH%3Don%3Blatitude\\_1dir%3DS%3Blongitude\\_1dir%3DE%3Blongitude\\_2dir%3DE%3Blatitude\\_2dir%3DS%3Bin\\_region%3Dpart;place\\_id=106187](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=keyword%3Dmicrowave%3Bkeyword_PD%3Don%3Bkeyword_SS%3Don%3Bkeyword_PH%3Don%3Blatitude_1dir%3DS%3Blongitude_1dir%3DE%3Blongitude_2dir%3DE%3Blatitude_2dir%3DS%3Bin_region%3Dpart;place_id=106187) >

---

<sup>18</sup> CSIRO, 2011, *Interscan aircraft landing system*, CSIROpedia, accessed 25 June 2014,

<<http://www.csiropedia.csiro.au/display/CSIROPedia/Interscan+aircraft+landing+system> >

<sup>19</sup> Department of the Environment, 2009, *Australian Heritage Database: Sydney Airport Air Traffic Control Tower*, accessed 28<sup>th</sup> June 2014,

<[http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place\\_detail;search=keyword%3Dairport%3Bkeyword\\_PD%3Don%3Bkeyword\\_SS%3Don%3Bkeyword\\_PH%3Don%3Blatitude\\_1dir%3DS%3Blongitude\\_1dir%3DE%3Blongitude\\_2dir%3DE%3Blatitude\\_2dir%3DS%3Bin\\_region%3Dpart;place\\_id=106116](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=keyword%3Dairport%3Bkeyword_PD%3Don%3Bkeyword_SS%3Don%3Bkeyword_PH%3Don%3Blatitude_1dir%3DS%3Blongitude_1dir%3DE%3Blongitude_2dir%3DE%3Blatitude_2dir%3DS%3Bin_region%3Dpart;place_id=106116) >

<sup>20</sup> See 'Heritage Flightgear Displays', accessed 13<sup>th</sup> July 2014, ,  
<http://heritageflightgeardisplays.wordpress.com/> >

<sup>21</sup> See : Cliff Muskiet's Stewardess / Flight Attendant Uniform Collection", accessed 20<sup>th</sup> June 2014, < <http://www.uniformfreak.com/> >

<sup>22</sup> See : Cliff Muskiet's Stewardess / Flight Attendant Uniform Collection", accessed 20<sup>th</sup> June 2014, < <http://www.uniformfreak.com/> >

<sup>23</sup> National Archives of Australia, 2014, "Commonwealth Government Records about South Australia: Civil Aviation", National Archives of Australia, accessed 22<sup>nd</sup> June 2014 < <http://guides.naa.gov.au/records-about-south-australia/chapter18/18.3.aspx> >

<sup>24</sup> Airways Museum, n.d., *Arthur Brownlow Corbett MBE (1877 – 1970)*, Airways Museum, accessed 29<sup>th</sup> July 2014,  
<<http://www.airwaysmuseum.com/Arthur%20Brownlow%20Corbett%20biog.htm> >

<sup>25</sup> 'Convention on International Civil Aviation Done at Chicago on the 7th Day of December 1944', accessed 7 March 2014,  
<[http://www.icao.int/publications/Doicuments/7300\\_orig.pdf](http://www.icao.int/publications/Doicuments/7300_orig.pdf)>, Preamble. The Convention was signed on Australia's behalf by Arthur S. Drakeford, Minister for Air and Minister for Civil Aviation.

<sup>26</sup> Webb, E., 2012, 'Crew battles mid-air terrorist Alex Hildebrandt in hijacking of TAA flight 408, in 1960s trials', Herald Sun October 25<sup>th</sup>, accessed 14<sup>th</sup> June 2014, < <http://www.heraldsun.com.au/news/law-order/crew-fights-back-mid->

---

air-terrorist-alex-hildebrandt-in-hijacking-of-taa-flight-408/story-fnat7jnn-1226502591369 >

<sup>27</sup> Cameron D.G., n.d., *Henri Mignet and the Flying Fleas - An Incomplete Overview*, Queensland Air Museum Papers and Research Projects, accessed 20<sup>th</sup> July 2014, < <http://www.qam.com.au/papers/flying-flea.pdf> >

<sup>28</sup> Marquis-Kyle, P., Walker, M., Australian Heritage Commission & Australia/ICOMOS 1992, *The illustrated Burra Charter: making good decisions about the care of important places*, Australia ICOMOS Inc. with the assistance of the Australian Heritage Commission, Sydney.

<sup>29</sup> Australia. Attorney-General's Dept. Office of Legislative Drafting 2003, Environment Protection and Biodiversity Conservation Act 1999: reprinted on 1 January 2004 (taking into account amendments up to and including those made by Act no. 88, 2003), The Dept., Canberra.

<sup>30</sup> Australia. Attorney-General's Dept. Office of Legislative Drafting 2003, Environment Protection and Biodiversity Conservation Act 1999: reprinted on 1 January 2004 (taking into account amendments up to and including those made by Act no. 88, 2003), The Dept., Canberra.

<sup>31</sup> Russell, R., Winkworth, K. & Collections Council of Australia 2009, *Significance 2.0: a guide to assessing the significance of collections*, Collections Council of Australia, Rundle Mall, S. Aust.