



TEACHER GUIDE

Teacher guide + curriculum links
HUNTER WARBS



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Preparing for your visit

Location

The exhibition hangar is located at Scone Memorial Airport, Walter Pye Avenue, Scone, NSW.

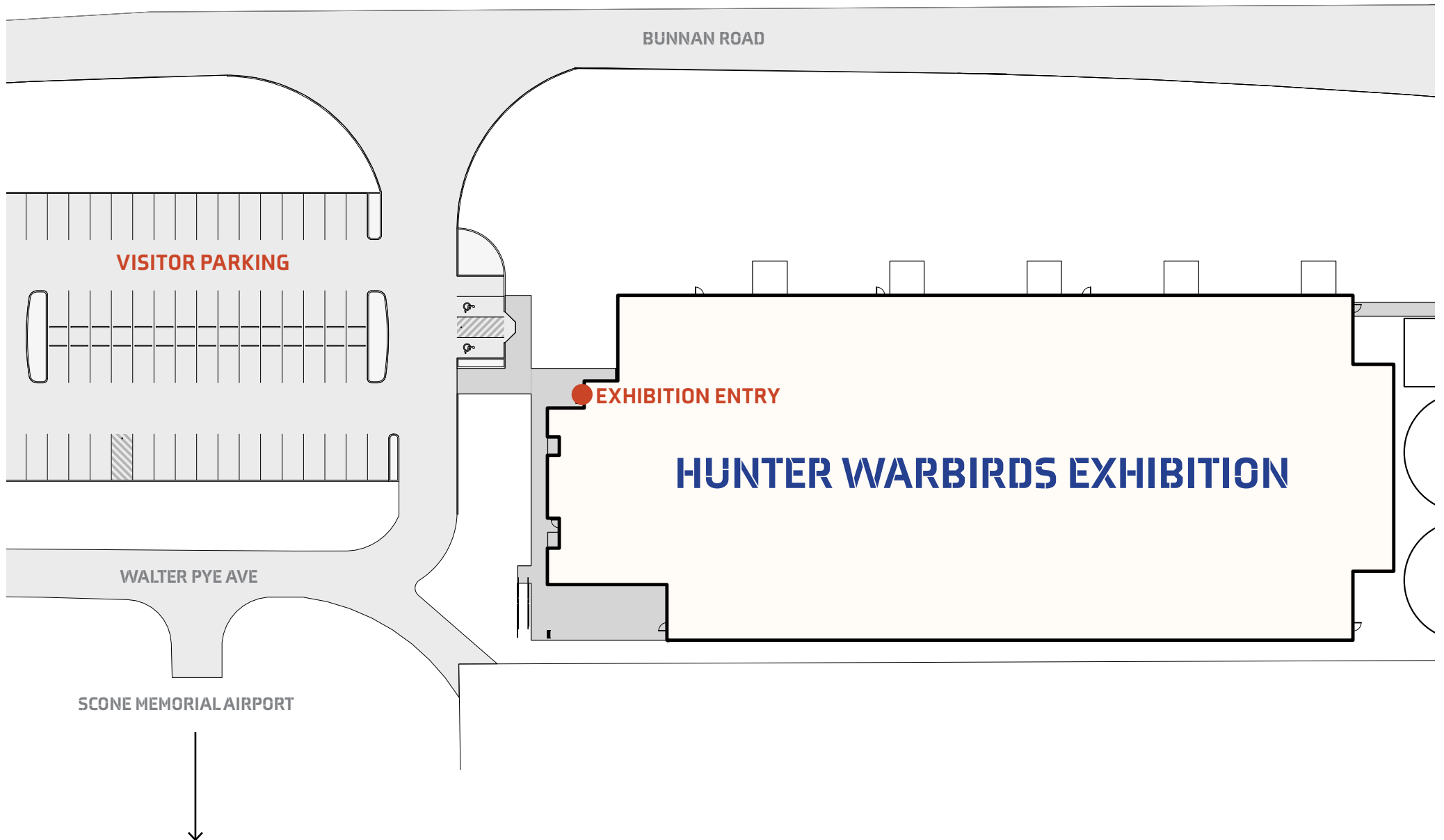
Travel distances: approximately 300km north of Sydney and 150km northwest of Newcastle by road.

Cost

Hunter Warbirds requests that all groups book in advance.

- Please contact us on (02) 6540 1370 to enquire about group ticket costs
- There is bus + coach parking available on site.
- The hangar is not heated in winter so clothing should be appropriate to the weather forecast.
- Hunter Warbirds complies with all current COVID19 Health Regulations as mandated by NSW Health. All visitors to Hunter Warbirds must comply with these or produce valid exemptions.





Planning your visit

Age suitability

Recommended for all ages, but ideal for children 8 and above.

Group size

45 people per timeslot, subject to availability.

Duration of exhibition experience

Recommended time - 60 minutes.

Supervision of students

Supervising adults are asked to manage group movement and timings, to ensure all exhibition sections are explored. We encourage supervisors to liaise with staff at the exhibition entry or inside the exhibition if assistance is required. Your session may include General Public visitors. We ask students and supervisors to be mindful of others.

Students must stay behind the rope barricades and not touch the aircraft.

Important points

We recommend visiting schools and groups arrive a minimum of 15 minutes ahead of any pre-booked visit experience. For your students to get the most out of their visit, please observe the scheduled start times on your itinerary.

- Label text is available in large print (booklet form) from reception.
- You are welcome to use cameras inside the exhibition, but please turn off the flash as it can damage our artefacts
- Food or drink is not permitted in any exhibition areas
- Toilets are not available inside the exhibition but can be found in the main terminal building
- Please note there is a multimedia sensory experience within the theatre space which can be bypassed if necessary.
- The exhibition includes a gift shop.

Hunter Warbirds is a living exhibition, fluid and constantly evolving. The collection and exhibition elements can and will vary over time creating a fresh experience for the returning visitor.



Booking your visit

We are open

Monday to Sunday: 9am - 5pm
Public holidays: 9am - 3pm

Closed:
Christmas Day, Boxing Day, ANZAC Day, Good Friday

Web

Go to Visit + Book, Group bookings.

www.hunterwarbirds.com.au

Phone

Hunter Warbirds Booking Office on (02) 6540 1370

Email

info@hunterwarbirds.com.au

Your visit to Hunter Warbirds can also include additional experiences such as a behind the scenes tour of the restoration workshops, heritage simulator and a joy ride in one of our heritage aircraft.

Introduction

Experience Hunter Warbirds, the history of aviation and pilot training that has played out in the fields and communities of the Hunter Region for over 100 years and meet the local people who supported military and civil aviation during times of war and peace, from WWI to present day.

Discover what it takes to become a pilot and restore these historic aircraft to the skies and get a glimpse of the exciting restoration projects being undertaken by PAYS Group.

Hunter Warbirds displays a collection of the most significant fighter and trainer from the Australian Flying Corp and RAAF and the exhibition captures the significance of aviation both locally in the Hunter Region, around Australia and the world.

Explore wonderful, curious aviation objects from the past. Understand what it takes to restore an aircraft. Learn to fly a Bristol Fighter and Spitfire in state of the art aircraft simulators. The exhibition presents exciting learning experience for everyone to enjoy.

Students will have opportunity to:

- Step into the shoes of local aviation pioneers.
- Experience the thrill of early flight in wood and fabric biplanes.
- Engage with authentic artefacts, primary texts and imagery from a wide range of eras including WWI & WWII.
- Connect with key moments in Australian history through large scale imagery and original film footage.
- See large scale artefacts, aircraft, engines and propellers and learn first hand about these technologies.
- Go behind the scenes at the restoration workshop and see the skill and technology required to rebuild aircraft.



Thematic Framework

Celebrating Warbird Aircraft and the history of aviation in the Upper Hunter Region

THEMES

FIGHTER ACES

HIT MY SMOKE

QUIET HEROES

FIGHTERTOWN

EARNING YOUR WINGS

LEGACY IN FLIGHT



Fighter aircraft pushed the limits of piston-engine performance between 1914 and 1945. Pilots tested this new technology and themselves in combat.

During the Vietnam War, Australian Forward Air Controllers flying smaller aircraft, searched at low altitude for targets in the thick jungle.

Ordinary Australians have risen to the many challenges of flight and have made history along the way.

Williamtown RAAF Base has been the home of RAAF fighter pilot training since the 1940s. Generations of RAAF fighter pilots have honed their skills over the Hunter Valley.

Learning to fly is the first challenge of any aspiring aviator. Every experience in the air is an opportunity to face real-life tests and develop new skills.

Pay developed an international reputation for excellence based on his experience returning rare Second World War fighters to the air.



Bristol Fighter

Young Gunner: James Traill

Making a Difference:
Australian Air
Squadrons Fund

CAC Wirraway

Doing the Impossible:
John Archer

Messerschmitt

Desert Ace: Bobby Gibbes

Kittyhawk

Spitfire

Young Hero: Don Ellis

Mustang

Sluggo-22:
Ronald 'Slats' Slater

Bird Dog

Fearless Sister: Ella Tucker

Two World Wars:
Roy Phillipps

Young Ace: John Crossman

Trailblazer: Mardi Gething

Engineering Excellence:
Kenneth Norman McRae

Driver to Pilot:
Alf 'Sinbad' Clare

Post-War Vanguard:
Noni Pears + Heather
McDougall

Enduring Fighter:
Phil Frawley

Mirage Jet Fighter

Macchi Trainer

Air Relief:
Maitland Floods

Winjeel + RAAF

Last Fighter Ace:
William 'Ron' Cundy

Harvard T6

Tuskegee Airmen

Texan War Effort

Stearman

Aerial Pioneer: Col Pay

Wreckage Revived:
Aircraft Restoration

Tiger Moth

STORIES

Bristol F.2 Fighter

CAC Wirraway

Curtiss P40 Kittyhawk

Messerschmitt Bf 109

Supermarine Spitfire

CAC Mustang

Showcase Artefacts

Cessna O-1

Showcase Artefacts

Replica Scale Models of
Display Aircraft

CAC CA-25 Winjeel

Aermacchi MB-326

Dassault Mirage III

Showcase Artefacts

Boeing-Stearman Model 75

North American T6 Harvard

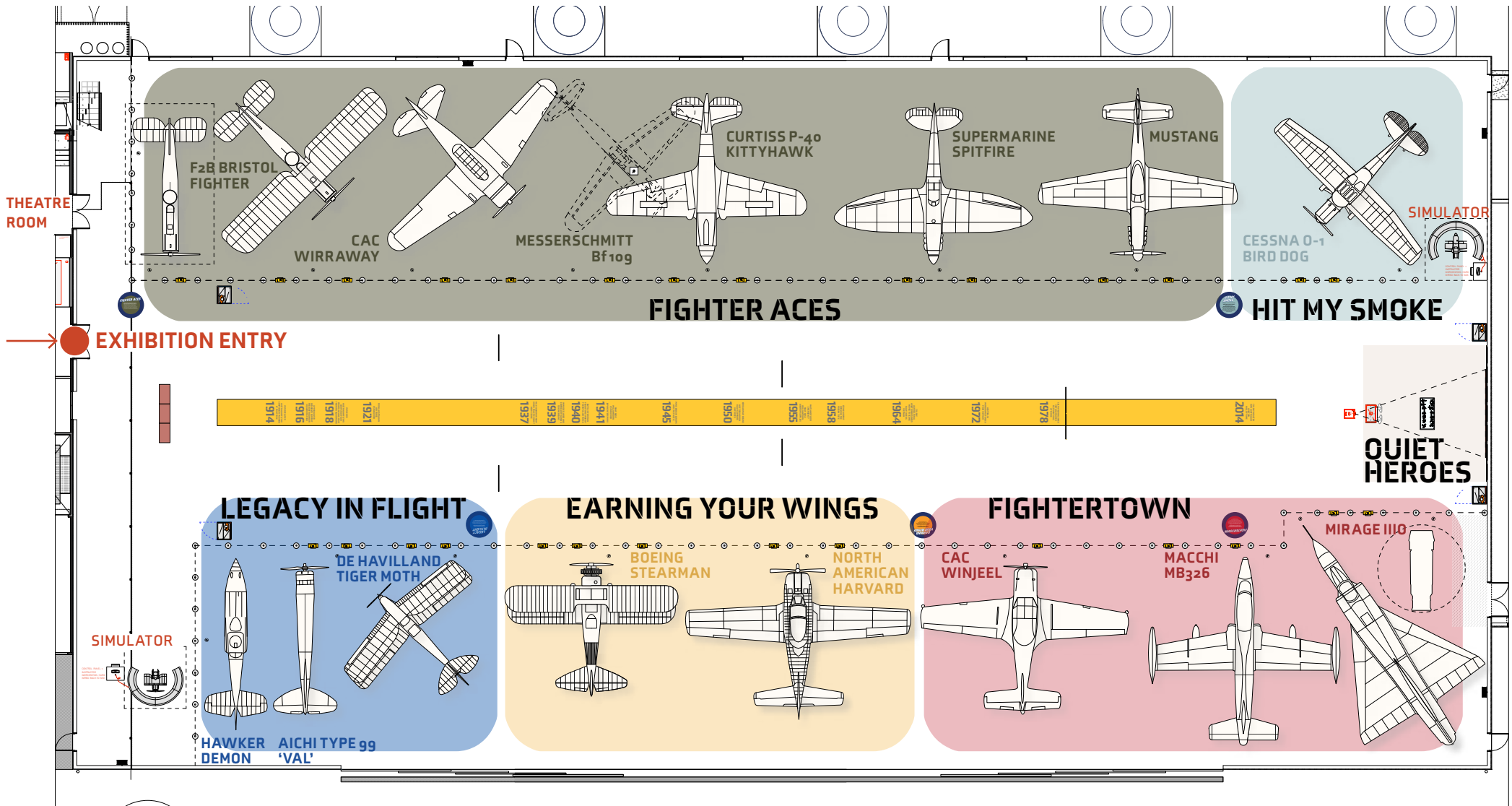
De Havilland DH.82
Tiger Moth

Aichi D3A Val

Hawker Demon Fuselage

Showcase Artefacts

ARTEFACTS



Investigate and learn

Thematic discussion questions targeting key themes in the exhibition, have been developed by the exhibition curatorial team to assist your students to get the most from their exhibition experience.

Across themes

- Throughout history, aviation has played an important role in Australia's war efforts. What role did aircraft play in the outbreak of war? How did this change between the First World War and present day?
- How has aviation and the increasing accessibility of flight over the past 100 years influenced and shaped Australian society and the way we live our lives?



Investigate and learn

Case study

Compare propaganda posters from WWI and WWII. What techniques were used by the government to encourage people to enlist and contribute to the war effort?

In groups, students can use a poster as a starting point to carry out an investigation into the contribution of the artist to the war effort. Use critical thinking, analysis and literal comprehension. How did the artist use imagery and text to convey their message? What design elements of the poster (colour, typography etc) have been successful in conveying this message?





Fighter Aces

Thematic Description

Fighters pushed the limits of piston-engine aircraft performance between 1914 and 1945.

Evolving from wood and fabric biplanes to all-metal monoplanes, pilots tested this new technology and themselves in combat. They were supported by engineers, test pilots and aircraft factory workers including many women. In 1940, a small band of RAF fighter pilots defeated the Luftwaffe during the Battle of Britain, a turning point in the ultimate downfall of Nazi Germany.

'Fighter Tales' showcases the evolution of aerial warfare through an array of aircraft, introducing important figures with links to the Hunter Region, and celebrating their contributions to the aerial war effort.



Investigate and learn Fighter Tales

1914-1945

- In what ways did the Australian Flying Corps assist in the aerial warfare effort during World War I?
- How did the Hunter community support the war effort during World War I and World War II?
- What impact did the Australian Air Force have on the course of the Second World War?
- How did the Second World War alter Australia's relationship with Britain and the United States?

Case study

The aircraft and diorama on display in “Fighter Tales” provide students with an overview of how aircraft technology and the use of aircraft in warfare evolved between 1914 and 1945. Study the different skills pilots would have had to learn as well as learning to fly, for example aerial photography. What impact did the First and Second World Wars have on aircraft and did this influence the development of other technologies?



Hit My Smoke

Thematic Description

During the Vietnam War, 36 RAAF fighter pilots served on rotation with the US Air Force as Forward Air Controllers flying small aircraft including the Cessna O-1 to search for targets in thick jungle at low altitude. They marked a location with smoke rockets for an air strike by jet aircraft patrolling overhead, remaining in the area to guide further strikes if required.

Fifteen RAAF FAC pilots received the Distinguished Flying Cross. Australian Army pilots flew the similar Cessna 180 in Vietnam on dangerous low-level reconnaissance flights.



Investigate and learn

Hit My Smoke

1962-1972

- How did the advancement of military aviation after the Second World War influence Australia's role in Vietnam?
- Forward Air Controllers were specially trained aviators who had to master numerous tactics as well as undertaking the formidable challenges of combat aviation. What was their specific role in the Vietnam war?
- Discuss the climate and terrain of Vietnam. How does this differ to Australia and what challenges would this have meant for Australian pilots?

Case study

The Vietnam War was different in nature to previous wars Australia had been involved in. Pilots flew at low altitude in an intimidating operational environment. Have a look at the aircraft on display. The Cessna O-1 carries only smoke rockets with no weapons or defensive counter measures. Why was this unusual for a military aircraft and what would this have meant for the people who flew them?



Quiet Heroes

Thematic description

Aviation is demanding and success requires commitment. For over a century, ordinary Australians have risen to the many challenges of flight and have made history along the way.

This portion of the exhibition showcases a collection of pilots from the Hunter Region, providing a summary of their life and achievements in the aviation field. Students are able to learn about a wide range of individuals who are all linked through a passion for piloting Australian Warbirds, through large scale graphics, artefacts and multimedia.



Investigate and learn

Quiet Heroes

1914-Present Day

- Aviation was an attractive pursuit as becoming a pilot was perceived as a glamorous role. Analyse the wall of people in “Humble Heroes”. What type of people became pilots? Discuss their similarities and differences.
- How has the training of pilots changed between World War I and present day?
- What impact did the Second World War have on aviation and society in Australia?

Case study

Mardi Gething was a remarkable woman who undertook dangerous work throughout the Second World War. During her time spent in the Air Transport Auxiliary, she flew 233 Spitfires and went on to join the Australian Women's Pilots Association after the war. Discuss how the role of women changed with World War II including the Women's Auxiliary Australian Air Force (WAAF) and the impact on the women's movement in Australia. How did this pave the way for future female military and civilian pilots?



Fightertown

Thematic description

Known as 'Fightertown', Williamtown RAAF Base near Newcastle has been the home of RAAF fighter pilot training since the 1940s. Generations of RAAF fighter pilots have honed their skills over the Hunter Valley and today it is the location for the introduction of the F-35A Joint Strike Fighter into RAAF service.

During emergencies such as the 1955 Maitland floods, Williamtown also became the centre for rescue and relief operations.



Investigate and learn Fightertown

1941-Present Day

- How has the RAAF assisted in relief missions in the Hunter Valley?
- How did the development of Air to Air Missiles impact the Cold War and what was the impact on the RAAF?
- Analyse a fighter pilot uniform. Can you guess what each piece of equipment is used for? How have pilot uniforms changed over the last 100 years?

Case study

Williamstown is home to the RAAF's main fighter base where generations of fighter pilots have honed their skills, flying over the Hunter Valley. Have you ever seen a fighter aircraft fly above you? Although they are trained to defend our nation, often the RAAF provide outreach and relief missions within the local community. Can you think of examples where the RAAF supported Australian citizens in times of need?





Earning Your Wings

Thematic Description

Learning to fly is the first challenge for any aspiring aviator. Going solo and earning your wings is a great achievement but as any pilot will tell you, its just the start of a journey of discovery where you never stop gaining wisdom from experience in the air.

'Earning Your Wings' showcases the opportunities that becoming a pilot can offer, and explores the stories of ordinary Australians becoming wartime heroes.

A spotlight is also placed on the people on the ground, who worked tirelessly to maintain these Warbirds, and provide adequate training to the thousands of pilots that were needed to sustain a successful Air Force.



Investigate and learn

Earning Your Wings

1939-1945

- What was the Empire Air Training Scheme and how did it impact Australia and the RAAF?
- Aside from learning to fly, what skills and adventures would pilots joining the RAAF in the 1940's experienced?
- Training bases and factories were vital to maintain and repair aircraft during the war. What were some of the jobs performed by women at these bases?

Case Study

Encourage students to think about things that fly. Can they group them into different types: those that are man made or natural? Discuss Bernoulli's principle and study the aircraft in front of you. Aircraft can achieve lift because of the shape of its wings. They are shaped so that air flows faster over the top of the wing and slower underneath. Fast moving air equals low air pressure while slow moving air equals high air pressure. The high air pressure underneath the wings therefore pushes the aircraft up through the lower air pressure.





Legacy in Flight

Thematic description

Col Pay pioneered both aerial agriculture and vintage military aircraft restoration in Australia. Established in 1978, Vintage Fighter Restorations at Scone has an international reputation based on long experience in returning rare World War II fighters to the air. The collection of historic aircraft Col Pay established continues to grow under the care of his son Ross.

Hundreds of thousands of military aircraft were manufactured during World War II. Those that survived the conflict were usually scrapped and very few remain today.

Restoration involves the total rebuilding of an aircraft and is one way to preserve traditional engineering skills which are now disappearing as aeronautical technology changes.



Investigate and learn

Legacy in Flight

- What was Col's contribution to aerial agriculture and how has this influenced that industry in Australia today?
- What legacy did Col leave for the Australian Warbird community and next generation of pilots?
- On average, how long does it take to restore a Warbird and what are some of the skills required to do so?

Case study

Hundreds of thousands of aircraft were made during the Second World War. Many didn't survive the conflict, and those that did were often scrapped, so today only a rare few remain. Study the D3A 'Val' Bomber and discuss the merits of conserving and restoring this aircraft for future generations. What do you think is the most difficult part of restoration an aircraft?





Authentic Artefacts

The exhibition showcases artefacts that are inextricably linked to the history of Hunter Warbirds, giving students the opportunity to engage with authentic objects, and understand their significance in the evolution of aviation from WWI to the current day.

FLIGHT							RECORD			
YEAR 52		AIRCRAFT		Flt. in Command	Notes and Remarks	DEPARTMENT FLIGHT		Percentage of satisfactory	HOURS FLOWN	
Month	Day	Type	Reg. No.			To Flight	Ground Training		Day	Night
Tools Brought Forward										
30-12-81	DH 82	VH-BBX	NO. JOHNSTON		Air Experience	B.S.K.	2932			.15
Janua	11	DH 82	"	AVX B.I. KER.	EFFECT OF CONTROLS.	B.S.K.	2932			.30
"	14	DH 82	"	AVX B.I. KER.	CLIMB AND GLIDE STALL	B.S.K.	2932			.30
"	15	DH 82	"	AVX B.I. KER.	MEDIUM TURNS.	B.S.K.	2932			.20
"	21	DH 82	"	AVX B.I. KER.	TURNING CIRCUITS.	B.S.K.	2932			.40
"	28	DH 82	"	AVX B.I. KER.	CIRCUITS	B.S.K.	2932			.25
"	29	DH 82	"	AVX NG. JOHNSTON	"	B.S.K.	2932			.35
July	5	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932			.40
"	6	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932			.45
"	14	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932	1.00		
"	20	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932			.35
"	28	DH 82	"	AVX B.I. KER.	Spinning.	B.S.K.	2932			.30
August	2	DH 82	"	AVX NG. JOHNSTON	CIRCUITS	B.S.K.	2932			.45
"	3	DH 82	"	AVX NG. JOHNSTON	"	B.S.K.	2932			.55
"	3	DH 82	"	AVX SELF	FIRST SOLO	B.S.K.	2932			.10
"	9	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932			.30
"	9	DH 82	"	AVX SELF	SECOND SOLO	B.S.K.	2932			.15
"	10	DH 82	"	AVX B.I. KER.	"	B.S.K.	2932			.15
"	10	DH 82	"	AVX SELF	"	B.S.K.	2932			.10
"	17	DH 82	"	AVX NG. JOHNSTON	"	B.S.K.	2932			.10
"	17	DH 82	"	AVX SELF	"	B.S.K.	2932			.10
"	23	DH 82	"	AVX SELF	"	B.S.K.	2932			.10
"	31	DH 82	"	AVX SELF	"	B.S.K.	2932			.10
September	13	DH 82	"	AVX SELF	"	B.S.K.	2932			.10
"	21	DH 82	"	ATE B.I. KER.	"	B.S.K.	2932			.10
"	21	DH 82	"	ATE SELF	"	B.S.K.	2932			.10
* Total Approved Flights						TOTALS				9.30





Aircraft Simulators

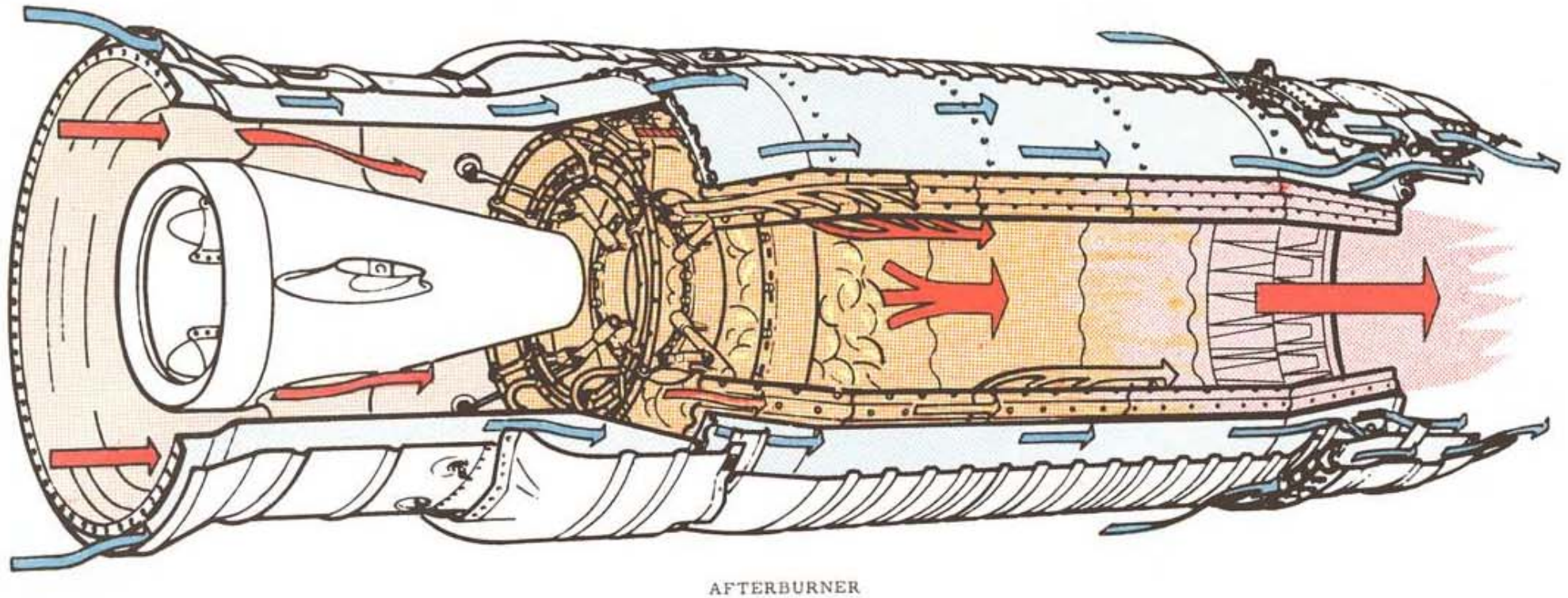
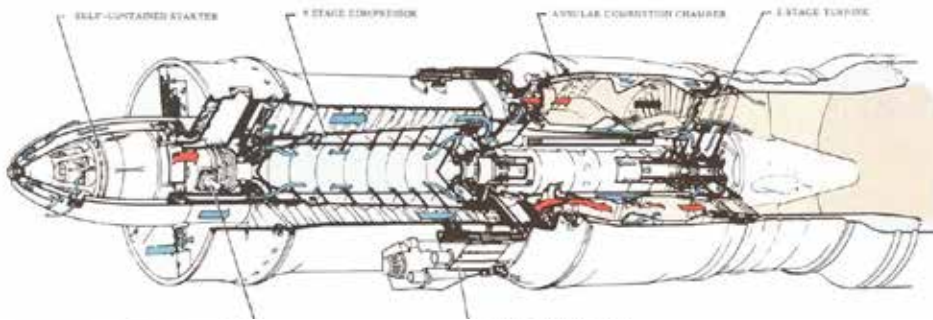
Two aircraft simulators are available in the hangar, a Spitfire and a Bristol Fighter. As well as being an important training tool for pilots, simulators provide visitors with a multi-sensory experience of flying in a Warbird, where they are able to sit in the cockpit and immerse themselves in an audiovisual display.

Simulators can be booked in addition to the general admission tickets.



Engines

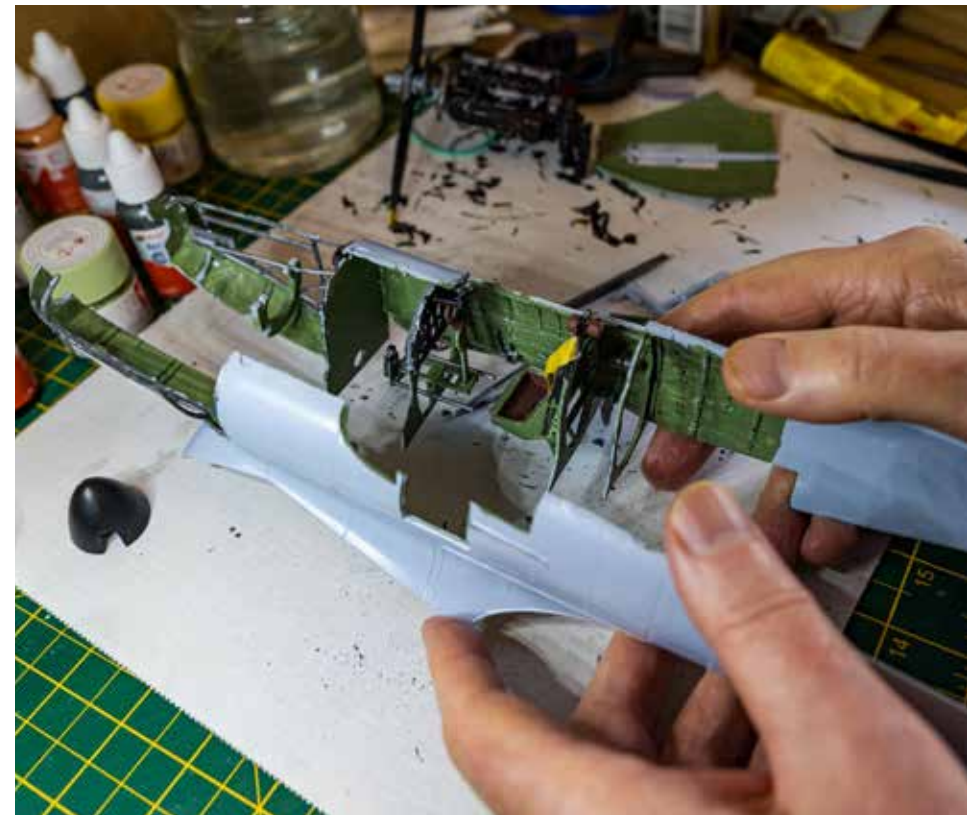
The exhibition features engines from various aircraft and across several decades. Students can investigate the science behind how these engines work and compare the different aircraft.





Aircraft Models

A collection of scale aircraft models are on display, showcasing the many Warbirds that are a part of Australia's aviation history. Model aircraft allow students to view the planes from new perspectives, and build on their understanding of how Warbirds are designed and manufactured.



Timeline Element

The timeline element within the exhibition act as a thread, linking each thematic area, helping the visitor make this transition through time and giving an opportunity for cultural context and reflection. The timelines have been developed to depict key moments in Australian Warbird history, and celebrate the role of the Hunter people in supporting military and civil aviation during times of war and peace, from WWI to present day.

Australian Curriculum Links

The following Australian Curriculum learnings may be supported by the Hunter Warbirds Exhibition content.



PRIMARY EDUCATION

Year 1

ACSHE022 Science (Science as a Human Endeavour)

People use science in their daily lives, including when caring for their environment and living things considering how science is used in activities such as cooking, fishing, transport, sport, medicine and caring for plants and animals.

The exhibition explores how technology has impacted the development of aviation, both for the aircraft and the people who flew them. The progression of aviation and aerial warfare is investigated.

ACHASSI018 HASS (Inquiry and skills)

Pose questions about past and present objects, people, places and events

The exhibition explores the stories of people in relation to specific aviation events or aircraft across a time frame. Key individuals are highlighted for each aircraft and historical event.

ACHASSI021 HASS (Inquiry and skills)

Sequence familiar objects and events

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACHASSI023 HASS (Inquiry and skills)

Compare objects from the past with those from the present and consider how places have changed over time

The exhibition showcases artefacts from World War I to present day. Historical imagery and artefacts such as uniforms can be used as a comparison to present day objects.

ACHASSK028 HASS (History - Knowledge and Understanding)

Differences in family structures and roles today, and how these have changed or remained the same over time

The exhibition showcases the changing role of women following the First and Second World Wars. The contribution of women and children to the war effort is explored.

ACHASSK031 HASS (Geography - Knowledge and Understanding)

The natural, managed and constructed features of places, their location, how they change and how they can be cared for

The exhibition touches on climate and terrain of Vietnam in comparison to Australia, and the difficulty this posed for Australian Pilots.

ACELA1453 English (Language)

Compare different kinds of images in narrative and informative texts and discuss how they contribute to meaning

The exhibition contains many historical image sources such as photographs and posters.

ACELY1660 English (Literacy)

Use comprehension strategies to build literal and inferred meaning about key events, ideas and information in texts that they listen to, view and read by drawing on growing knowledge of context, text structures and language features

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts and imagery.



Year 2

ACHASSI034 HASS (Inquiry and skills)

Pose questions about past and present objects, people, places and events

The exhibition explores the stories of people in relation to specific historical events and aircraft from World War I to present day.

ACHASSI037 HASS (Inquiry and skills)

Sequence familiar objects and events

The exhibition explores the stories of people in relation to specific historical events and aircraft from World War I to present day.

ACHASSI039 HASS (Inquiry and skills)

Compare objects from the past with those from the present and consider how places have changed over time identifying how objects and activities are similar or different depending on conditions in local and distant places (for example, clothes, transport, technology)

The exhibition explores how aviation made connections to distant and remote places both within Australia and internationally. Historical imagery and artefacts such as uniforms can be used as a comparison to present day objects.

ACHASSI040 HASS (Inquiry and skills)

Interpret data and information displayed in pictures and texts and on maps

The exhibition includes historical maps, primary source texts and imagery which can be used as a comparison to present day sources.

ACHASSK046 HASS (History - Knowledge and Understanding)

How changing technology affected people's lives (at home and in the ways they worked, travelled, communicated and played in the past)

The exhibition explores how aviation made connections to distant and remote places both within Australia and internationally, as well as new roles for women in the workforce.

ACHASSK050 HASS (Geography - Knowledge and Understanding)

The connections of people in Australia to people in other places in Australia and across the world

The exhibition explores how aviation made connections to distant and remote places both within Australia and internationally

ACELY1670 English (Literacy)

Use comprehension strategies to build literal and inferred meaning and begin to analyse texts by drawing on growing knowledge of context, language and visual features and print and multimodal text structures

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts and imagery.



Year 3

ACHASSI055 HASS (Inquiry and skills)

Sequence information about people's lives and events

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACHASSI052 HASS (Inquiry and skills)

Pose questions to investigate people, events, places and issues

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACHASSK063 HASS (History - Knowledge and understanding)

How the community has changed and remained the same over time and the role that people of diverse backgrounds have played in the development and character of the local community

The exhibition explores local stories from the Hunter Region and the impact World War I and World War II on Australian and local community is explored.

ACHASSK064 HASS (History - Knowledge and understanding)

Days and weeks celebrated or commemorated in Australia (including Australia Day, Anzac Day, and National Sorry Day) and the importance of symbols and emblems

The exhibition explores stories from World War I and World War II, showcasing the progression of aerial warfare and the impact this had on Australians at home and overseas. The post war impact on aviation and society is explored.

ACELY1680 English (Literacy)

Use comprehension strategies to build literal and inferred meaning and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts and imagery.

ACTDEK011 Design and Technologies (Knowledge and understanding)

Investigate how forces and the properties of materials affect the behaviour of a product or system

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 4

ACHASSI073 HASS (Inquiry and skills)

Pose questions to investigate people, events, places and issues

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACHASSI076 HASS (Inquiry and skills)

Sequence information about people's lives and events

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACMMG090 Mathematics (Measurement and Geometry)

Use simple scales, legends and directions to interpret information contained in basic maps

The exhibition includes historical maps used by pilots

ACELY1686 English (Literacy)

Identify and explain language features of texts from earlier times and compare with the vocabulary, images, layout and content of contemporary texts

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts and imagery.

ACTDEK011 Design and Technologies (Knowledge and understanding)

Investigate how forces and the properties of materials affect the behaviour of a product or system

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 5

ACHASSI097 HASS (Inquiry and skills)

Sequence information about people's lives, events, developments and phenomena using a variety of methods including timelines

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACHASSI098 HASS (Inquiry and skills)

Examine primary sources and secondary sources to determine their origin and purpose

The exhibition contains a number of primary and secondary sources from the First World War to present day.

ACELY1703 English (Literacy)

Use comprehension strategies to analyse information, integrating and linking ideas from a variety of print and digital sources

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts, imagery and posters.

ACTDIK014 Digital Technologies (Knowledge and understanding)

Examine the main components of common digital systems and how they may connect together to form networks to transmit data

The exhibition includes navigational technology and equipment, both historic and from present day and emphasises the development of technology, networks on data on the aviation industry.

ACTDEK019 Design and Technologies (Knowledge and understanding)

Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 6

ACHASSI125 HASS (Inquiry and skills)

Sequence information about people's lives, events, developments and phenomena using a variety of methods including timelines

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACHASSI123 HASS (Inquiry and skills)

Locate and collect relevant information and data from primary sources and secondary sources

The exhibition contains a number of primary and secondary sources from the First World War to present day.

ACHASSK141 HASS (Geography - Knowledge and Understanding)

Australia's connections with other countries and how these change people and places

The exhibition explores Australia's relationship with Britain and the USA 1914-1945 and after the Vietnam War.

ACELT1613 English (Literature)

Make connections between students' own experiences and those of characters and events represented in texts drawn from different historical, social and cultural contexts

The exhibition profiles key individuals from the Hunter region and showcases local stories. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACTDIK014 Digital Technologies (Knowledge and understanding)

Examine the main components of common digital systems and how they may connect together to form networks to transmit data

The exhibition includes navigational technology and equipment, both historic and from present day and emphasises the development of technology, networks on data on the aviation industry.

ACTDEK019 Design and Technologies (Knowledge and understanding)

Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



SECONDARY EDUCATION

Year 7

ACSSU117 Science (Science understanding)

Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

Through the variety of aircraft on display the exhibition showcases the development of aircraft and flight and provides an understanding of how aircraft fly including airflow and air pressure.

ACHASSI155 HASS (Inquiry and skills)

Sequence information about events, developments, periods and phenomena using a variety of discipline-appropriate formats and conventions including chronological frameworks that use dating conventions

The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACHASSI157 HASS (Inquiry and skills)

Analyse primary sources and secondary sources to identify values and perspectives on people, actions, events, issues and phenomena, past and present

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts, imagery and posters.

ACHASSK171 HASS (History - Knowledge and Understanding)

The importance of conserving the remains of the ancient past, including the heritage of Aboriginal and Torres Strait Islander Peoples

The exhibition displays rare aircraft from the First and Second World War with a focus on restoration and conservation of these artefacts and their history.

ACHASSK175 HASS (History - Knowledge and Understanding)

Contacts and conflicts within and/or with other societies, resulting in developments such as the conquest of other lands, the expansion of trade, and peace treaties

The exhibition explores Australia's relationship with Britain and the USA 1914-1945 and after the Vietnam War.

ACHHS205 History (Historical Skills)

Sequence historical events, developments and periods

The exhibition showcases a chronological exploration of stories from 1914 to present day. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACTDEK031 Design and Technology (Knowledge and Understanding)

Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions

The exhibition displays large scale engines and aircraft from the early days of aviation and explores the technology of more modern aircraft.

ACTDEK034 Design and Technology (Knowledge and Understanding)

Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 8

ACHHS148 History (Historical Skills)

Sequence historical events, developments and periods

The exhibition showcases a chronological exploration of stories from 1914 to present day. A large floor timeline highlights key moments and individuals from the Hunter Region in sequence with larger global and Australian events.

ACHHS152 History (Historical Skills)

Identify the origin and purpose of primary and secondary sources

ACHHS153 History (Historical Skills)

Locate, compare, select and use information from a range of sources as evidence

ACHHS154 History (Historical Skills)

Draw conclusions about the usefulness of sources

ACHHS155 History (Historical Skills)

Identify and describe points of view, attitudes and values in primary and secondary sources

The exhibition explores stories of people and events from World War I to present day, using both primary source text, historical artefacts, imagery and posters.

ACTDEK031 Design and Technology (Knowledge and Understanding)

Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions

The exhibition displays large scale engines and aircraft from the early days of aviation and explores the technology of more modern aircraft.

ACTDEK034 Design and Technology (Knowledge and Understanding)

Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 9

ACDSEH021 History (Historical knowledge and understanding)
An overview of the causes of World War I and the reasons why men enlisted to fight in the war
The exhibition profiles individuals who enlisted to fight in World War I and their achievements during the war.

ACDSEH095 History (Historical knowledge and understanding)
The places where Australians fought and the nature of warfare during World War I, including the Gallipoli campaign
The exhibition explores stories of aerial combat and individuals who flew in them during World War I.

ACDSEH096 History (Historical knowledge and understanding)
The impact of World War I, with a particular emphasis on Australia including the changing role of women
The exhibition explores the roles of women and children during World War I, in particular from the local Hunter region and the involvement in the Australian Air Squadrons Fund.

ACHHS164 History (Historical skills)
Use chronological sequencing to demonstrate the relationship between events and developments in different periods and places
The exhibition showcases a chronological exploration of stories relating to key moments in history and of specific aircraft and individuals from World War I to present day.

ACHHS172 History (Historical skills)
Identify and analyse the perspectives of people from the past
The exhibition profiles key individuals using primary source text, imagery and artefacts.

ACAMAR079 Media Arts
Analyse a range of media artworks from contemporary and past times to explore differing viewpoints and enrich their media arts making, starting with Australian media artworks, including media artworks of Aboriginal and Torres Strait Islander Peoples, and international media artworks
The exhibition contains a range of World War I and II Propaganda posters produced by a variety of Australian artists.

ACTDEK043 Design and Technology (Knowledge and Understanding)
Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineered solutions
The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 10

ACOKFH023 History (Historical knowledge and understanding)

The nature of the Cold War and Australia's involvement in Cold War and post-Cold War conflicts (Korea, Vietnam, The Gulf Wars, Afghanistan), including the rising influence of Asian nations since the end of the Cold War

The exhibition presents aviation stories from the RAAF's contribution to the Vietnam war and displays aircraft which served in Vietnam, Korea and the Cold War.

ACDSEH024 History (Historical knowledge and understanding)

Overview of the causes and course of World War II

The exhibition presents key stories from World War II, including Australia's involvement and the advancement of aerial warfare after the Second World War. Key individuals and stories are highlighted.

ACDSEH108 History (Historical knowledge and understanding)

Experiences of Australians during World War II (such as Prisoners of War (POWs), the Battle of Britain, Kokoda, the Fall of Singapore)

The exhibition presents key stories from World War II, including Australia's involvement and the advancement of aerial warfare after the Second World War. Key individuals are highlighted with a focus on local stories from the Hunter region.

ACHHS109 History (Historical knowledge and understanding)

The impact of World War II, with a particular emphasis on the Australian home front, including the changing roles of women and use of wartime government controls (conscription, manpower controls, rationing and censorship)

The exhibition explores Australia's relationship with Britain and the USA after World War II and showcases the changing role of women. The contribution of women and children to the war effort is explored.

ACDSEH146 History (Historical knowledge and understanding)

The impact of at least ONE world event or development and its significance for Australia, such as the Vietnam War and Indochinese refugees

The exhibition presents aviation stories from the RAAF's contribution to the Vietnam war and the influence of advancement of military aviation.

ACHHS110 History (Historical knowledge and understanding)

The significance of World War II to Australia's international relationships in the twentieth century, with particular reference to the United Nations, Britain, the USA and Asia

The exhibition touches on Australia's relationship with Britain during World War II, with a strong emphasis on the RAAF's involvement in the Battle of Britain. Australia's relationship with the USA is explored including the influence of the advancement of military aviation post World War II.

ACHHS190 History (Historical skills)

Identify and analyse the perspectives of people from the past

The exhibition highlights key individuals from 1914 to present day using primary source text and imagery.

ACTDEK043 Design and Technology (Knowledge and Understanding)

Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineered solutions

The exhibition showcases and explores the development of aircraft from wood and fabric to all metal construction and the impact this had on flight and pilots in times of war and peace as well as the influence aviation technology had on other industries.



Year 10

ACAMAR079 Media Arts

Analyse a range of media artworks from contemporary and past times to explore differing viewpoints and enrich their media arts making, starting with Australian media artworks, including media artworks of Aboriginal and Torres Strait Islander Peoples, and international media artworks

The exhibition contains a range of World War I and II Propaganda posters produced by a variety of Australian artists.



Imagery Credits and Sources

This report has been prepared by Freeman Ryan Design Pty Ltd. for the exhibition “Hunter Warbirds”.

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Cover Image

Close call at the airfield with a De Havilland Tiger Moth and an Oldsmobile. The car is a 1946 Oldsmobile.

Source: State Library of Queensland

Pg2

WWII Fighter Formation of CAC Mustang and Curtiss P40E

Credit: John and Anne Parker

Pg3

“Redheads subscribe 5000 pounds to Spitfire fund.” Shows the Marquis of Donegall handing over a cheque to Squadron-leader K. Truscott watched by members of his squadron.

Source: Argus Newspaper Collection of Photographs, State Library of Victoria.

Pg6

Parachute Rigger 3rd Class Lorna Peterson, USNR climbs out of the after cockpit of a Stearman NzS training plane, following an orientation flight at Naval Air Station, Ottumwa, Iowa, circa 1944-45. The pilot is Lieutenant (Junior Grade) Keith W. Sharer, USNR, a flight instructor at the Station.

Source: Courtesy National Archives, 80-G-K-14309

Pg10

A flying instructor inspects a trainees navigation log, alongside a Harvard. Believed to be No. 2 Service Flying Training School. RNZAF Station, Woodbourne, 1943.

Source: Courtesy RNZAF Official, PR2086

Pg11

Recruitment poster for the RAAF air crew c1940

Source: Australian War Memorial, ARTV04297

Pg12

Main Image: Kittyhawk P40 flying over Scone, pilot Paul Bennet.

Credit: Natalie Hardbattle

Robert Henry Maxwell (Bobby) Gibbes RAAF, and Commanding Officer of No. 3 (Kittyhawk) Squadron RAAF

Source: Australian War Memorial, 011962

Pilot Officer John S. (Jack) Archer, No. 4 Squadron, RAAF

Source: Australian War Memorial, 014032

First Officer Mardi Gething, Air Transport Auxiliary (ATA) c.1942

Source: Australian War Memorial, P03100.018

Pg13

Ground crew working on a Hurricane with the pilot looking on and a fuel tanker at left.

Believed to be during the Battle of Britain. C1940

Source: Courtesy RNZAF Official, MUS0800148

Pg14

Cessna Bird Dog in flight, Anzac Day 2016

Credit: Mark Jessop and Ross Pay

Pg15

Wing Commander A.W. Powell, piloting an Cessna O-1 Bird Dog, was one of the first RAAF Forward Air Controllers (FAC) in Vietnam, 1967

Source: copyright: © Australian War Memorial, P01953.010



Imagery Credits and Sources

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Main Image: Mardi Gething in Air Transport Auxiliary, 1943

Source: *Australian Stockman's Hall of Fame and Outback Heritage Centre - Object number 20642 - Copyright Licence All rights reserved*

Pilot Officer John Crossman, 46 Squadron

Source: *Courtesy Crossman Family collection*

Pat Toole, Elizabeth Buston, Heather McDouglas, Australian Womens Pilots. Newcastle c1980

Source: *Australian Stockman's Hall of Fame and Outback Heritage Centre - Object number 15407 - Copyright Licence All rights reserved*

Portrait of Captain Roy Cecil Phillipps MC, cropped from a group portrait of the officers of No. 2 Squadron of the Australian Flying Corps, March 1918

Source: *Australian War Memorial, A03716*

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Air Transport Auxiliary Pilots with their equipment, 1942.

Source: *Getty Images*

Pg18

Main Image: CAC Winjeel A85 405 flying in formation with a Macchi and Vampire.

Credit: *The Royal Australian Air Force Collection*

1966 Royal Australian Air Force (RAAF) - Mirage Fighters, New South Wales - Left to right: Mirage Instructor, Flight Lieutenant Terry Carter of the Operational Conversion Unit at the Williamtown RAAF Base, New South Wales explaining Mirage fighter pre-flight checks to Flying Officer Bruce Searle; Flying Officer Reg Meissner and Pilot Officer Ron Magrath.

Source: *National Archives of Australia, 11736326*

Squadron Leader Phil Frawley with his Mirage in Malaysia

Source: *Courtesy Phil Frawley*

Royal Australian Air Force (RAAF) - Mirage Fighters, New South Wales - A young Mirage fighter pilot ready to 'scramble' on a night exercise at the RAAF base at Williamtown.

Source: *National Archives of Australia, 11736338*

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RAAF relief mission, dropping supplies in Maitland, 1955

Source: *Lucey Collection, Special Collections, The University of Newcastle, Australia.*

Pg20

Main Image: Harvard T-6G in flight, Anzac Day 2016

Credit: *Mark Jessop and Ross Pay*

Portrait of 402732 Flight Lieutenant (Flt Lt) William Ronald Cundy DFC DFM.

Source: *Australian War Memorial, P00523.004*

Trainee pilot receives final instructions before flight in a Harvard. Believed to be No. 2 Service Flying Training School. RNZAF Station, Woodbourne, 1943.

Source: *Courtesy RNZAF Official, PR2076*

Painting the American insignia on airplane wings is a job that Mrs. Irma Lee McElroy, a former office worker, does with precision and patriotic zeal, 1942. Mrs. McElroy is a civil service employee at the Naval Air Base, Corpus Christi, Texas. Her husband is a flight instructor.

Source: *Library of Congress Prints and Photographs Division*

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Flying Instructor, Flight Lieutenant DI Stewart, climbs down from a Tiger Moth as a pupil pilot prepares to go on his first solo. Believed to be No. 3 Elementary Flying Training School, RNZAF Station, Harewood, 1943.

Source: *Courtesy RNZAF Official, PR2175*



Imagery Credits and Sources

Pg22

Main Image: VH PCL Tiger Moth after being restored by Pays Air Service.

Credit: Pays Group

CAC Mustang after being restored by Pays Air Service

Credit: Pay Family

Col Pay in CAC Mustang A68-107

Credit: Pay Family

Spitfire Restoration

Credit: Pay Family

Pg23

Col Pay and Spitfire restoration

Credit: Pay Family

Pg24

Col Pay's Flight helmet and goggles

Credit: Pay Family, Photograph: Natalie Hardbattle

Col Pay's Flight Log Books

Credit: Pay Family, Photograph: Natalie Hardbattle

Pg25

Bristol Fighter Simulator Cockpit

Credit: GeoSim Technologies

Simulator scenery system

Credit: GeoSim Technologies

Pg26

Engine Diagrams of a SNECMA ATAR gC, used in the Mirage III-O

Credit: Aircraft Engine Historical Society

Pg27

Child playing with World War II airplane

Source: Petr Bonek / Alamy Stock Photo, Image ID: DHY1TA

Constructing Spitfire model aeroplane

Source: Sally Anderson / Alamy Stock Photo, Image ID: 2E3RDMP

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Artist impression of Hunter Warbirds exhibition

Credit: Freeman Ryan Design

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A U.S. Navy North American SNJ-1 trainer airplane in flight, circa 1940-1941

Source: Courtesy National Archives, 80-G-K-13549

