



WILDLIFE HAZARD MANAGEMENT PROGRAMS

Preparation and Implementation



Australian Aviation Wildlife Hazard Group

WHO WE ARE

Formed in 2003 and recognised as Australia's national bird strike committee in 2010

Executive Committee:



Australian Government
Civil Aviation Safety Authority



Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Executive Members:





Webinar Summary

1. PREPARING WHMPS

- Andrew Williams (Pest, Wildlife & Aviation Unit Project Coordinator) - Biodiversity Australia
- Kylie Patrick (Principal Consultant) – Avisure Pty Ltd

2. IMPLEMENTING WHMPS

- Anthony Conte (Manager Airfield Operations and Compliance) – Sydney Airport

3. AIRLINE RESPONSE TO WHMPS

- Simon Locke (Manager Boeing Programs / Fleet Engineering Management) – Qantas Airways Ltd

PREPARING WHMPS



Wildlife Hazard Management Plans

A plan that identifies the wildlife hazard risk and details the measures used to treat that risk.

This is also referred to in the Civil Aviation Safety Regulations Part 139 (Aerodromes) Manual of Standards (MOS) as a “wildlife hazard management plan”



Wildlife Hazard Management Plans

It sits in a greater framework of airport documents that includes:

1. Safety Management System.
2. Aerodrome Manual – some aerodrome operators provide a summary of the WHMP in the Aerodrome Manual, with the detail provided in a separate document. Others provide the detail in the Aerodrome Manual itself.
3. Standard Operating Procedures (SOPS) – SOPS related to wildlife management usually sit within the WHMP.
4. Aerodrome Emergency Plan.
5. Airport Master Plan.
6. Airport Environment Plan/Strategy.



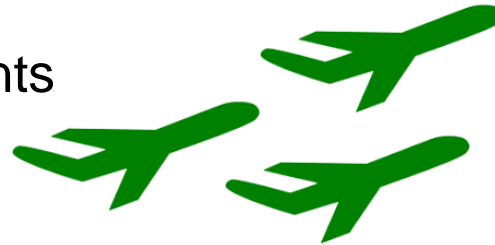
WHMP Triggers

- Has 50,000 or more air transport passenger movements



Or

- Has 100,000 or more aircraft movements



Or

- Is directed to have one by the Civil Aviation Safety Authority



WHMP Review Triggers

- An aircraft experiences multiple wildlife strikes
- Substantial damage following any wildlife strike
- Engine ingestion of wildlife
- The ongoing presence of wildlife is observed on the aerodrome capable of causing an event mentioned above
- Every 12 months





WHMP Annual Reviews

The CASR Part 139 MOS requires a review of the WHMP as part of each technical inspection and is supported where necessary with the assistance of a suitably qualified and experienced aviation ecologist.

The annual review should:

- Be based on performance indicators and assessment findings
- Detail progress of the plan against the key performance indicators (KPIs)
- Recommend management actions to further reduce the strike risk
- Ensure compliance with all current legislation
- Re-assess the risk to determine current high and moderate risk species
- Ensure all procedures, roles, and responsibilities are current and relevant.



Requirements

A wildlife hazard management plan must be prepared in consultation with a suitably qualified or experienced person.

- Ornithologist
- Biologist
- Demonstrated expertise in the management of wildlife hazards.

The aerodrome operator must implement the wildlife hazard management plan keep the plan under continuous review.

- Monitoring
- Reporting



Preparing the WHMP: key inclusions

1. Include relevant airport staff (and contractors) and their responsibilities
2. Identify wildlife attractions (on and off the aerodrome)
3. Establish procedures to monitor, assess, and manage wildlife
4. Specify liaison arrangements with local planning authorities (up to 13km from the aerodrome)
5. Set out the aerodrome's wildlife hazard reduction strategy
6. Include records/qualifications of key WHMP personnel

Let's look at each in more detail ...



Preparing the WHMP: key inclusions

1. Include relevant airport staff (and contractors) and their responsibilities





Preparing the WHMP: key inclusions

2. Identify wildlife attractions (on and off the aerodrome)

- Identified via surveys, monitoring, patrols, inspections, assessments

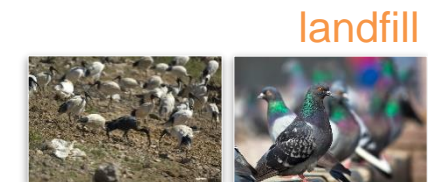
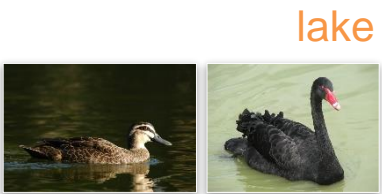




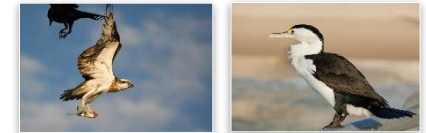
Preparing the WHMP: key inclusions

2. Identify wildlife attractions (on and off the aerodrome)

- Identified via surveys, monitoring, patrols, inspections, assessments



estuary



aquaculture



cattle grazing



Preparing the WHMP: key

4. Specify liaison arrangements (the aerodrome)

Australian airports are guided by:

- The National Airports Safeguards Act
- Wildlife committees
- Land use planning requirements

| Prepared | Land Use |
|----------|----------------------------------|
| | Agriculture |
| | Turf farm |
| | Piggery |
| | Fruit tree farm |
| | Fish processing |
| | Cattle /dairy farm |
| | Poultry farm |
| | Forestry |
| | Plant nursery |
| | Conservation |
| | Wildlife sanctuary |
| | Wildlife sanctuary |
| | Recreation |
| | Showground |
| | Racetrack / horse track |
| | Golf course |
| | Sports facility |
| | Park / playground |
| | Picnic / campsite |
| | Commercial |
| | Food processing |
| | Warehouse (food) |
| | Fast food / drive-in |
| | Shopping centre |
| | Office building |
| | Hotel / motel |
| | Car park |
| | Cinemas |
| | Warehouse (non-food) |
| | Petrol station |
| | Utilities |
| | Food / organic waste |
| | Putrescible waste |
| | Putrescible waste |
| | Non-putrescible waste |
| | Non-putrescible waste |
| | Sewage / wastewater |
| | Potable water treatment facility |

Diagram of Stakeholders:

- Airport Management
- Airport Environment
- Airlines
- Airport Safety
- Aviation Ecologist
- Air Traffic Control
- Local Govt. Waste
- Local Govt. Planning
- State Govt. Environment
- Off-airport Land Users

Document Cover: Guidance material for Airports, July 2017, Queensland Government



Preparing the WHMP: key inclusions

5. Set out the aer

- Explains the ai
- Should align w
- Should include
- Should include

| | Target | Performance Indicator | Type | Evidence | SOP |
|------------|--|--|---------|---|--------------|
| Regulatory | Objective: Develop and implement procedures and systems that comply with the regulatory framework | | | | |
| | Continual improvement to meeting legislative compliance. | Compliance to legal requirements is conducted at least annually. | Leading | Record of review. | WHMP Review |
| Assurance | Objective: Review the WHMP | | | | |
| | Regular reviews of the WHMP. | Review of WHMP and procedures conducted at least annually. | Leading | Record of review. | WHMP Review |
| Training | Objective: Maintain skilled and trained resources to develop, implement, and improve the WHMP. | | | | |
| | Develop and implement training program for all relevant personnel | Initial training provided. | Leading | Syllabus developed. Competency evaluation. | WHM Training |
| | | Advanced and refresher training provided. | Leading | Syllabus developed. Competency evaluation. | WHM Training |



Preparing the WHMP: key inclusions

6. Include records/qualifications of key WHMP personnel

- Name, position, qualifications and/or experience



Australian Aviation Wildlife Hazard Group

Wildlife strike and aviation

Aircraft and wildlife, especially birds, have been coming into contact with one another since the beginning of aviation. The first reported bird strike occurred in 1905, when the Wright Flyer flown by Orville Wright struck a bird over an Ohio cornfield.

Bird strikes happen every day, and occur most commonly at airports (90 per cent according to ICAO), when aircraft are landing, or taking off. The majority happen at low altitudes: 50–60 per cent of bird strikes occur at zero to 50 feet, and 30 per cent between 50–500 feet.

Bird strikes worldwide have accounted for 262 human fatalities since 1988 and destroyed 250 aircraft. Bird strikes cause over \$1.2 billion in aircraft damage annually.



File Home Insert Design Layout References Mailings Review View Help Tell me what you want to do

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Wildlife Hazard Management Plan Template

May 2011

Using this Template

This template has been prepared by the Australian Aviation Wildlife Hazard Group with the assistance of Australian Airports Association and Avature Pty Ltd.

It aims to assist regional and general aviation airports to document their own bird and wildlife management procedures to meet the requirements of Appendix 1 to CASR 1998 subparagraph 139.05(a)(i) pertaining to the Aerodrome Manual.

Section 10.14 of the Manual (Standards (MOS) part 139 requires an airport with an identified wildlife hazard to develop a wildlife hazard management plan (WHMP). CASA also requires a WHMP to be prepared by a suitably qualified person such as an ornithologist or a biologist. Whilst this template has been prepared with the assistance of an aviation ecologist, it is highly recommended that input from a suitably qualified person is also obtained. This will help ensure that a complete and effective plan is produced for each individual aerodrome that utilises this template.

The management plan deals with the particulars of the procedures to deal with hazards to aircraft operations caused by the presence of wildlife on or near the aerodrome. It is also designed to be incorporated as part of the aerodrome's overall Safety Management System (SMS).

Normal document control processes adopted by your organisation should be incorporated into the plan.

Sections provided in **green brackets, text and highlighted in yellow** are guidance notes to be deleted when the template is used - this page and the first cover included.

Sections provided in **green brackets, CAPS and highlighted in blue** indicates where details specific to your airport or aerodrome should be inserted.

Template Revision History

| Revision number | Revision date | Title | Prepared by |
|-----------------|---------------|--|---|
| 1 | November 2005 | Initial Airport Hazard Management Plan | Australian Airports Association |
| 2 | March 2010 | Wildlife Hazard Management Plan Template | Australian Aviation Wildlife Hazard Group |

Acknowledgments

The Australian Aviation Wildlife Hazard Group acknowledges the input from the Australian Airports Association and Avature Pty Ltd in revising the template and members of the group for their feedback on drafts. Transport Canada's "Template for the Development of an Airport Wildlife Management Plan" was used to guide aspects of the template.

Disclaimer

This Template proposes strategies for adoption by Airport Operators to minimise the risk of bird and wildlife strikes to aircraft and is produced in good faith based on practices generally adopted by the industry in October 2009. No responsibility what so ever is accepted to any party what so ever who may use or rely on whole or any part of this Template.

[AIRPORT NAME] Wildlife Hazard Management Plan

[DATE]

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(Note: remember to update the above page numbers when you have completed your Wildlife Hazard Management Plan)

[AIRPORT NAME] WILDLIFE MANAGEMENT PLAN (YEAR)

1 Background

1.1 Function

The function of this Wildlife Management Plan (WHMP), is to define the risk that wildlife poses to air traffic at [AIRPORT NAME] and to set objectives, performance indicators and procedures in place for the systematic management of that risk. It aims to support the requirements of Appendix 1 to Civil Aviation Safety Regulations 1998 (CASR 1998), subparagraph 139.05(a)(i) in relation to the content of the Aerodrome Manual. It also aims to support the requirements of Manual of Standards (MOS) Part 139, Section 10.14 in relation to the preparation of a WHMP. This template has been designed to be incorporated as part of the [AIRPORT NAME] Safety Management System.

1.2 Policy

[AIRPORT NAME] is committed to ensuring the safety of aircraft using [AIRPORT NAME]. While the safety of aircraft at [AIRPORT NAME] is paramount, it is not possible to prevent all wildlife strikes. The WHMP aims to reduce the frequency and severity of strikes by focusing management efforts on species and habitats that constitute significant hazards to aircraft that operate at [AIRPORT NAME].

(Add to or delete as appropriate or insert your existing airport policy relating to wildlife management)

1.3 Goals and Objectives

Table 1 - [AIRPORT NAME] general information

| Content | Description |
|-----------------------|---------------|
| Airport location | [DESCRIPTION] |
| Surrounding land uses | [DESCRIPTION] |
| Geography | [DESCRIPTION] |
| Elevation | [DESCRIPTION] |
| Airport ownership | [DESCRIPTION] |
| Airport operator | [DESCRIPTION] |
| Traffic profile | [DESCRIPTION] |
| Runways | [DESCRIPTION] |
| Navigation aids | [DESCRIPTION] |
| Communications | [DESCRIPTION] |
| Hours of operation | [DESCRIPTION] |
| Class | [DESCRIPTION] |
| Other | [DESCRIPTION] |

2 Structure

[AIRPORT NAME] adopted a rigorous risk-based approach to develop the WHMP and established management procedures to ensure the WHMP is properly implemented in accordance with the relevant requirements of CASR 1998. The planning, implementation and review structure detailed in this document is provided in Figure 1 below.

3 Planning

[AIRPORT NAME] has adopted a three-step approach to assessing and reducing the risk posed by wildlife to aircraft:

- Hazard identification** - broad assessment of the airport's hazard profile, including aircraft movements, the habitat and activities that attract wildlife both on and off airport, the species most observed on and off airport, and the trends observed in wildlife strikes
- Risk assessment** - a risk assessment based on the information available on wildlife numbers, characteristics and/or strikes for each species encountered on and around the airport
- Wildlife Management Plan** - a plan comprising actions for each of the highest risk species, supported by a summary of their relevant characteristics, identified by key airport staff that help the airport reduce the degree of risk and meet its wildlife management goals and objectives

3.1 Hazard Identification

3.1.1 Aircraft movement and types

Generally, the more aircraft movements at an aerodrome the greater the chances of wildlife strikes. Different aircraft have different susceptibility to wildlife strikes. Large turbo fan aircraft tend to fly low, have

IMPLEMENTING WHMPS

Implementation at an Aerodrome





Roles and Responsibilities

Competent staff who are trained in wildlife management

- Identify bird species - list contained in SOP, database and species action plans
- Knowledge on how to use a database to enter data
- Trained in the use of firearms/pyrotechnics and other tools (habituation) e.g. vehicle-mounted gas cannon, stock whip, handheld pistol
- Refresher training

Stakeholders

- Airline pilots - reporting all strikes if known
- Air traffic control - advising the AD OPR of all reported strikes

Ornithologist - important in helping you manage wildlife

- Reviewing the data
- Independent monthly surveys
- Train staff during surveys e.g. bird identification, dispersal methods





Reporting and Data Collection

Standard Operating Procedures

- Livestock transfers (prevent animals escaping airside)
- Wildlife monitoring (serviceability inspections)
- Wildlife hazard surveillance (routine patrols and recording bird activity)
- Wildlife dispersal (harassment to unsettle birds)
- Wildlife culling (if there is a threat to the safety of aircraft)
- Wildlife strike reporting (mandatory requirement)
- Guidelines on the use of gas canon

Recording and reporting all bird or animal strikes - Confirmed or suspected

Identify the locations where the bird counts will be conducted - consistency for personnel

Identifying your high and medium risk species & targeting management actions towards them





Reviewing Data Collected & Investigations

Reviewing the Data

- Monthly
- Quarterly
- Half yearly
- Yearly
- Update risk profiles for high and medium risk species

Investigations

- Investigating multiple or damaging strikes
- Implementing recommendations and corrective actions

SYD

Sydney Airport
Level 2: 5 Whys Investigation Report

Effective date: 11/02/2016

| | | | |
|-----------------------|-----|--------|---------------|
| SIR Number | | Status | |
| Incident Title | | | |
| Incident Date | | | |
| Incident Time | | | |
| Likelihood | | | Consequence |
| Risk Rating | Low | | |
| Company 1 | | | Aircraft Type |
| Aircraft Registration | | | Operated By |
| Flight Number | | | |
| Company 2 | | | Vehicle Type |
| Vehicle AUA | | | Asset Number |
| Investigator | | | |

This investigation is intended to identify any potential systematic issues and not apportion blame to individual(s). Improvements to the current system will be sought with a view to preventing such incidents in the future.

Short Incident Description:
Insert a short description of this incident.

Incident Outcome:
What was the outcome of this incident?

Document name: 5 Whys Level 2 Investigation Report Template (2019) Issue date: 11/02/2016

Document no: WHS-TO-E7-2-001 Revision no: 2.0 Review date: 07/05/2020

EDM ID: 23249108 Page 1 of 6 Next review date: 07/05/2022

Approved by: Head of Organisational Safety

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Understanding your Airport Environment

Food sources

- Fauna on and off airport
- Waste transfer stations or rubbish tips

Shelter

- Roosting and nesting
- Know where the locations exist

Water

- Water bodies such as ponds, rivers, lakes and ocean

Other considerations

- Grass management and netting of open drains and ponds
- Waste management - overflowing bins or poor waste management by tenants
- Landscaping - plant species less attracting
- Fences - prevent wildlife from entering the airside





Working with Local Authorities

- Wildlife Working Group
- Regular meetings with local authorities - update on any future developments and letters to council planners

HOW AIRLINES RESPOND TO WHMPS





Airline Expectations of Airports

- A safe and reliable operating environment
- Effective risk management of wildlife
- Timely sharing of relevant information for safe operations



Airline involvement in WHMPs

Over time our active involvement in airport wildlife management had reduced and varied across different parts of our operations.

As the airline entered the COVID slow down it was noticed the wildlife strike rate per flight was increasing.

In December 2018 it was decided at a group level to carry out an audit of our internal procedures and operating airport's wildlife management plans.

The key findings from the audit has driven a new awareness of our need to be more involved with the airports and their wildlife management plans.

A new group level committee was established to coordinate our wildlife management across all the Qantas AOCs.



Covid Experience

Placing fleets into storage and shutting down networks

Maintaining Stored Aircraft:

- Nesting – every nook and cranny
- Bugs – sensitive aircraft systems
- Animals – everyone wants a warm dry home, even snakes.

Waking fleets and networks up again:

- Inspections, tests and more inspections





Rebuilding in a COVID world

Increased flying to regional airports with larger aircraft

- Understanding the risks at new destinations
- Operating more charters into private / unmanned airfields (FIFO)

Flying to new domestic destinations

- Rebuilding flying networks without international destinations
- Agile networks responding to local demand

Reconnecting with airports and getting involved again

- Using our network and resources to get involved with airports and their local wildlife management plans
- Fostering a group wide focus on staying involved in the interest of safer operations
- Maintaining high level management oversight through the formation of a group committee to steer and focus the ongoing management of wildlife risk.





Closing the Loop

Improving our data

- Standardise and define
- Making reporting easier

Using and sharing our knowledge

- Analysing our data
- Sharing our data

