

WILDLIFE HAZARD MANAGEMENT WORKSHOP

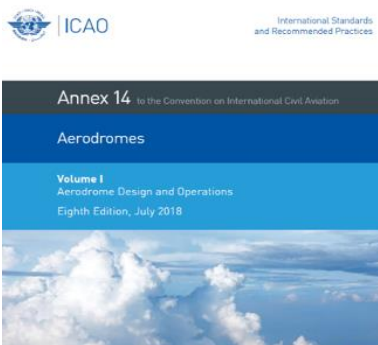


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ROLES AND RESPONSIBILITIES

OUTLINE

- ❖ Global and Regional perspectives
- ❖ Stakeholders involved
- ❖ Roles & Responsibilities
- ❖ -National Wildlife Hazard Management committee



GLOBAL AND REGIONAL PERSPECTIVE

- ICAO Documentation
- Data collection and Analysis from Bird and Wildlife Strikes.
- Other Partners and Stakeholders meetings



ICAO Docs

Annex 14

1951 – Annex 14

1969 – Annex 14 5th edition (*Chapter 2. Bird Hazard Reduction Services*)

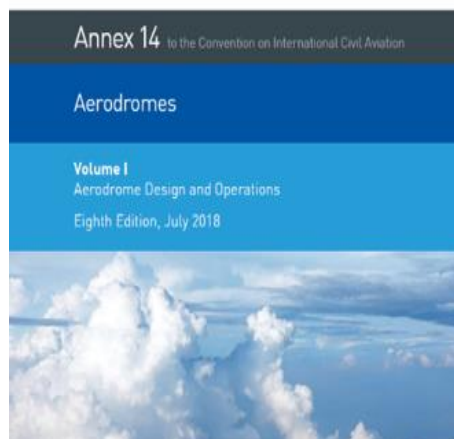
1990 – Annex 14 Volume I – 1st edition (4 Recommendations)

- 1. Install a fence**
- 2. Assess the bird strike hazard**
- 3. Take action to discourage the presence of hazardous birds**
- 4. Eliminate or prevent garbage dumps or any other source attracting hazardous birds.**

2018 – Annex 14 Volume I – 8th edition
SARPS



International Standards
and Recommended Practices



ICAO Docs

PANS Aerodromes

- ✓ 2015: 1st edition
- ✓ 2016: 2nd edition
- ✓ 2020: 3d edition



The PANS

1. Are complementary to Standards and Recommended Practices
2. Specify in greater detail procedures to be applied

Chapter 6. Wildlife hazard management

6.1 General

6.2 Objectives

6.3 Operational practices

Appendix 1 to chapter 6: Wildlife control training

Appendix 2 to chapter 6: Wildlife incident reporting criteria

Attachment to Chapter 6: Land use on and around aerodromes

ICAO Docs.

9137 Airport Services
manual –Wildlife Hazard
Mgt

Chapter 1. Introduction Chapter 1. General

- 1.1 What is a wildlife hazard?
- 1.2 Historical background
- 1.3 Fundamentals of wildlife hazard management

Chapter 2. Stakeholders

- 2.1 Introduction
- 2.2 Aerodrome operators
- 2.3 Stakeholders within the aerodrome
- 2.4 Identifying external stakeholders in the community
- 2.5 Civil aviation authorities (CAAs)
- 2.6 Methods of communication
- 2.7 Establishment of a national committee or forum



Doc 9137

Airport Services Manual

Part 3 — Wildlife Hazard Management
Fifth Edition, 2020



Approved by and published under the authority of the Secretary General.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Chapter 3. Aerodrome wildlife safety risk assessment

- 3.1 Introduction to safety risk management
- 3.2 Estimating the probability of a strike
- 3.3 Estimating the severity of a strike
- 3.4 Estimating the safety risk of wildlife species



Chapter 4. Habitat management

- 4.1 General
- 4.2 Attractants
- 4.3 On-aerodrome management
- 4.4 Off-aerodrome management

Chapter 5. Management of hazardous wildlife

- 5.1 The importance of understanding animal behavior
- 5.2 Patrols and observations
- 5.3 Repellents



Chapter 6. Advancements in technology

- 6.1 General
- 6.2 Satellites for land use monitoring
- 6.3 Geographical Information System (GIS)
- 6.4 Detection systems
- 6.5 Remotely piloted aircraft systems (RPAS) and drones
- 6.6 Pulse lights on aircraft and aerodrome use of flashing light patterns
- 6.7 Database



Chapter 7. Training

7.1 Training requirements

7.2 Content of a training plan

Chapter 8. Operational notifications

8.1 General

8.2 Automatic terminal information service (ATIS)

8.3 Notice to airmen (NOTAM)

8.4 Pilot report

8.5 Aeronautical information publication (AIP)

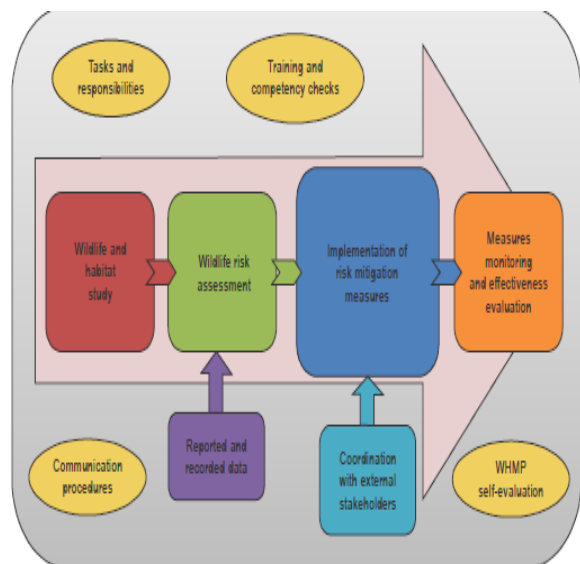
Chapter 9. Wildlife hazard management programme

9.1 Aerodrome wildlife hazard management programme (WHMP)

9.2 Wildlife hazard management programme evaluation

9.3 CAA evaluation of wildlife hazard management programme effectiveness

9.4 CAA evaluation of their safety oversight system for wildlife hazard airmen (NOTAM)(AIP)



STAKEHOLDERS INVOLVED

- The aerodrome operator,
- Airside personnel,
- Air navigation services providers (ANSPs),
- Pilots,
- Airlines,
- Environmental authorities,
- Local and regional authorities,
- Civil aviation authorities (CAA),
- Security forces,
- Police,
- Local community groups,
- The air force
- Marine department
- Wildlife experts and scientific and academic communities.

ROLES AND RESPONSIBILITIES

AERODROME OPERATOR



The primary responsibility of the aerodrome operator is to maintain aerodrome safety and ensure that action is taken to reduce the risk of wildlife strikes.

- Wildlife Hazard Management Programme
- Aerodrome wildlife safety risk assessment
- Training
- Operational notifications

ROLES AND RESPONSIBILITIES

AERODROME OPERATOR

Severity Likelihood			Higher Lower	
↑				Unacceptable
More Less		Acceptable with Mitigation		
↓		Acceptable		

✓ *Wildlife Hazard Management Programme*

Develop, implement and demonstrate an effective WHMP

✓ *Aerodrome wildlife safety risk assessment*

- i. Represent the size and level of complexity of the aerodrome,
- ii. Consider hazardous species, the level of risk associated with them and the volume of flight operations.

✓ *Training*

Wildlife hazard control personnel and managers trained and equipped.

ROLES AND RESPONSIBILITIES



AERODROME OPERATOR

Operational Notifications

Recurrent wildlife behavior and habits that may impact aircraft safety

Agreements with tenants of leased land contain specific wildlife hazard management control information. The aerodrome operator may choose to include enforcement language within their leases or concession agreements.

ROLES AND RESPONSIBILITIES

The CAA should ensure that:

- Wildlife strike hazards are assessed through;
 - 1) reports of wildlife strikes to aircraft;
 - 2) information collected from aircraft operators, aerodrome personnel and other sources documenting the presence of wildlife which pose a potential hazard to aircraft operations; and
 - 3) evaluation of wildlife hazards by competent personnel;

- Aerodrome operators have developed and implemented mitigating measures to manage wildlife hazard risks and minimize the likelihood of wildlife strikes with aircraft;

- Wildlife strike reports are collected and forwarded to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS) database;

ROLES AND RESPONSIBILITIES



The CAA should ensure that:

- the personnel involved in wildlife hazard oversight activities are properly trained;
- they manage their own national reporting systems for wildlife events; and
- that they properly plan and manage airspace to reduce interactions of wildlife with aeronautical operations.
- engage wildlife specialists to assist in reviewing the appropriateness and effectiveness of an aerodrome operator's WHMP or other wildlife hazard management issues of concern.

ROLES AND RESPONSIBILITIES



The CAA should ensure that:

- Carry out awareness activities, encouraging communication and collaboration among different stakeholders with regard to hazard management.
- Work with CAAs from other countries to exchange information and to promote a global reporting culture.
- State authorities may collaborate by trying to establish or modify air traffic routes over geographical areas where the risk of wildlife strike is lower (e.g. avoid flying at certain altitudes over certain geographical areas, protected areas, wildlife refuges, etc.).

THE LOCAL AERODROME WILDLIFE COMMITTEE/FORUM



- a) accountable manager;
- b) senior safety or compliance manager;
- c) wildlife coordinator or manager;
- d) wildlife controller representative;
- e) aircraft operator representative;
- f) airport planning manager;
- g) aerodrome maintenance and operation manager;
- h) ATC representative;
- i) active aircrew representative familiar with the aerodrome;
- j) local runway safety team representative; and
- k) local authorities
- l) RFFS(optional)
- j). airside operations



ESTABLISHMENT OF A NATIONAL COMMITTEE FORUM



- The State authority;
- National departments (defense, agriculture, environment, planning);
- Aerodrome operators;
- ANSPs;
- Aircraft operators' Pilots' association;
- NGOs, ecological associations, conservation environmental authorities;
- Wildlife subject matter experts and the scientific community;
- Regional authorities;
- General aviation associations;
- Accident investigation board;
- Maintenance, repair and overhaul
- Manufacturers



ESTABLISHMENT OF A NATIONAL COMMITTEE



The establishment of a national wildlife committee or forum will promote wildlife hazard management awareness and allow for the exchange of:

- Actual wildlife hazard management experiences,
- New techniques and equipment,
- New research and investigation studies,
- National, environmental, and aeronautical legislation related to wildlife hazard management,
- Information about hazardous wildlife biology, behavior, population trends, wildlife attraction points,
- Information on training standards for and/or emerging technologies; and
- National wildlife strikes information and trends

CAA EVALUATION

- ❑ CAAs can evaluate the programme effectiveness and determine its compliance with regulations by conducting periodic inspections and audits.
- ❑ The CAA should have a national plan for wildlife hazard management as part of the State Safety Programme.
- ❑ This plan may include regulations, the publication of guidance material, outreach, research, data collection and partnerships with the goal of reducing wildlife risk.
- ❑ The CAA should evaluate the quality and quantity of the wildlife strike reporting data. The CAA can identify deficiency trends and ultimately improve wildlife strike reporting.
- ❑ The effectiveness of the CAA can be measured by assessing the number of aerodromes that have implemented a successful WHMP.

CAA EVALUATION CHECKLISTS

- ✓ Are wildlife management roles, tasks and responsibilities adequately established at the aerodrome?
- ✓ Is the “wildlife manager or coordinator” considered in the WHMP?
- ✓ Is there a proper communication procedure between the different stakeholders to alert about the presence of strikes with wildlife?
- ✓ Are the wildlife management personnel aware of the species that pose a risk to air traffic and about attractive areas for wildlife at the airport and its vicinity?
- ✓ Are wildlife observations and strikes recorded and reported properly?
- ✓ What is the average of identification of species on wildlife strikes?
- ✓ Does the WHMP include an appropriate wildlife risk assessment conducted by competent personnel?
- ✓ Are habitat management measures and measures of dispersion and extraction of wildlife taken at the aerodrome?
- ✓ Is the effectiveness of these measures measured?
- ✓ Is there coordination with external stakeholders? Are regular meetings held with them?
- ✓ Is the local wildlife committee effective?
- ✓ Is training on wildlife management given to personnel involved in wildlife management (at all different levels)?
- ✓ Is the self-evaluation of the WHMP being performed?

CAA EVALUATION CHECKLISTS

- ✓ Has a land use plan been established with regard to effective land use on and off the aerodrome, as it pertains to the WHMP?
- ✓ What ecological measures are implemented to reduce wildlife attractiveness at the aerodrome and in the vicinity?
- ✓ Are garbage dumps forbidden around the aerodrome? If yes, within what distance are they forbidden?
- ✓ Is the aerodrome fence suitable to prevent hazardous wildlife incursions?
- ✓ Which repellent methods are implemented at the aerodrome?
- ✓ Are aerodrome personnel employed and trained specifically to control and disperse wildlife at the aerodrome?
- ✓ What is the wildlife strike rate at the aerodrome over the last five years (with or without damage to the Aircraft)?
- ✓ Is there a procedure to regularly collect information about wildlife on, and in the vicinity of, the aerodrome, both dead and living?
- ✓ Has a procedure for the positive identification of wildlife remains been established?
- ✓ How many reports from pilots are related to intrusions of wildlife, other than birds, over the last five years?
- ✓ Has a list of wildlife attractants at, and in the vicinity of, the aerodrome been completed?



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THANK YOU