

Bird/Wildlife Management

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GENERAL

Overseas Territories Aviation Circulars (OTACs) are issued to provide advice, guidance and information on standards, practices and procedures necessary to support Overseas Territory Aviation Requirements. They are not in themselves law but may amplify a provision of the Air Navigation (Overseas Territories) Order or provide practical guidance on meeting a requirement contained in the Overseas Territories Aviation Requirements.

PURPOSE

This Overseas Territories Aviation Circular provides guidance on how to implement a practical programme to manage bird/wildlife hazards on and around aerodromes.

RELATED REQUIREMENTS

This Circular relates to OTAR Part 139.

CHANGE INFORMATION

Fourth edition changes terminology to reflect ICAO, and corrects the document serial number.

ENQUIRIES

Enquiries regarding the content of this Circular should be addressed to Air Safety Support International at the address on the ASSI website www.airsafety.aero or to the appropriate Overseas Territory Aviation Authority.

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1 Introduction

- 1.1 OTAR Part 139.53(18), specifies the requirements for bird/wildlife hazard reduction.
- 1.2 This OTAC is intended to provide industry with some broad guidelines on how to implement a practical programme to manage bird/wildlife hazards.

Note, the term, "wildlife" is used throughout the rest of this document to describe birds, wildlife and other animals.

2 Hazards related to wildlife

- 2.1 Typical hazards related to wildlife are:
 - Aircraft collides with wildlife;
 - Engines ingest wildlife;
 - Aircraft systems obstructed by wildlife (e.g. pitot probe blockage);
 - Wildlife hazard to aerodrome personnel (mosquitoes, snakes etc.).
- 2.2 The potential consequences range from material damage and inconvenience to catastrophic.

3 The requirements

- 3.1 The requirements, taking account of developments, are in general terms that aerodromes must establish a plan and programme that identifies, assesses and controls any hazards or potential hazards to aircraft operations caused by wildlife on, and in the vicinity of, the aerodrome. The plan should at least cover the following items:
 - Roles and Responsibilities
 - Training /Competency Requirements
 - Birdstrike Definitions & Reporting of Wildlife Strikes
 - Assessment of Hazards
 - Assessment of Risk
 - Aerodrome Wildlife Control
 - Habitat Management
 - Active Wildlife Control
 - The Wildlife Control Log
 - Safeguarding & Off Airfield Monitoring
- 3.2 The programme, defined in the plan shall cover, as a minimum:
 - Collection of data;
 - Bird strike and Wildlife strike reporting;
 - Risk reducing and safety enhancing actions.

4 Wildlife management plan

- 4.1 To satisfy the requirements of the aerodrome manual, the aerodrome operator should define and set out, in a plan, the details of the procedures for wildlife reduction.
- 4.2 The wildlife hazard management plan (WHMP) should specify the operator's plans to manage wildlife, to reduce the hazard to aircraft and flight safety. Wildlife hazard management is a specialised area, and operators are recommended to seek expert advice from qualified wildlife hazard experts. Procedures may be required for cooperation with local and municipal authorities to ensure bird flocking and animal migration are not promoted on or near the aerodrome. Wildlife hazards may be managed using the operator's Safety Management Systems.
- 4.3 This OTAC is intended to provide advice on the framework and tools to build the WHMP. The section headings in this OTAC may be used as a foundation for a WHMP (Table 1) and using those elements (as applicable to the operation) to go towards building a comprehensive plan. However, it is vital that the plan reflects the operation and the environment of the aerodrome. It should contain practical and sustainable processes and procedures to identify, assess, reduce and manage the wildlife hazards and risks that are deemed unacceptable.

Table 1. – Wildlife Hazard Management Plan Example Framework

Section Heading	Content
1. Introduction	
2. Guidance and Documentation	Listing of reference material used in the WHMP.
3. The Wildlife Hazard Management Plan	
3.1. Roles and Responsibilities	Who is accountable for safety management and what wildlife control and management roles are required.
3.2. Training /Competency Requirements	An outline of the competencies expected or training levels needed to ensure responsible individuals are fit for duty.
3.3. Birdstrike Definitions & Reporting of Wildlife Strikes	A definition of what constitutes a confirmed, unconfirmed or near miss and the process of recording and reporting strike events.
3.4. Assessment of Risk	Information on identified hazards and what measures are currently in place to reduce risk. Policies and procedures for conducting wildlife strike risk assessments.

Section Heading	Content
3.5. Aerodrome Wildlife Control	
3.5.1. Aerodrome Wildlife Control – Habitat Management	Aerodrome Habitats; the processes and procedures implemented for managing habitat to reduce risk from wildlife.
3.5.2. Aerodrome Wildlife Control – Active Wildlife Control	Wildlife Control; the dispersal and control measures deployed to reduce remaining risks on airfield and the frequency of their implementation.
3.5.3. Aerodrome Wildlife Control – Safeguarding & Off Airfield Monitoring	Off-Airfield Management; the activities employed by the aerodrome operator to assess and minimise, where necessary, the attraction to wildlife beyond the boundary of the airfield.
3.6. The Wildlife Control Log	The information to be recorded and frequency of records expected for bird and wildlife control activities on the aerodrome.
3.7. Review and Feedback	The monitoring systems and metrics in place that will be used to review wildlife hazard management procedures.

5 Identification

- 5.1 The first issue is identification. The aerodrome needs to know the species on and around the aerodrome, and understand the risk those species may pose. This will enable the aerodrome to evaluate and manage wildlife attractants specific to a species (e.g. habitat, food sources). Active Wildlife control should then be conducted to reduce, remove or manage any remaining risk. Accurate identification is key to all aspects of wildlife control.
- 5.2 Additionally, information on the attractants at an airfield and what measures are currently in place to reduce any risk should be included in a Wildlife Hazard Management Plan. To understand risk, it is necessary to have first identified the species that may be attracted, understand the risk they may pose, then manage or remove the habitat to reduce the risk. Regular monitoring of habitat(s), and risk reduction, should be carried out. This may be an on-going process.
- 5.3 It should be a proactive process. Do not wait for the first birdstrike or collision with an animal. Record and use observations of wildlife and try to identify types, habits and attractants. Make use of local resources such as zoos and bird sanctuaries, whose staff may have extensive local knowledge.

- 5.4 Both ATS and aerodrome staff should participate in this process. The ATS tower is a good observation post, but aerodrome staff performing movement area inspections or other duties around on the site can also see a lot. Other aerodrome users should be encouraged to report concentrations of activity or habitats that may encourage the presence of wildlife. The reports must go to one location, and analysis must be made.

6 Risk identification

- 4.1 Once the wildlife threats have been identified, it is possible to understand and assess the risks relating to the wildlife activity on, and in the vicinity of, the aerodrome and therefore develop a suitable management plan to reduce those risks and/or probabilities of wildlife strike. The assessment will enable the strike hazardous species to be identified and management action prioritised.
- 4.2 The aerodrome operator should develop and maintain a systematic method of obtaining information regarding wildlife strike hazardous species and habitats on, and in the vicinity of, the aerodrome on a regular basis. This should include:
- (a) assessing the hazards posed by wildlife in the context of aircraft operations;
 - (b) analysis of wildlife strike records to identify how many of each species have been struck;
 - (c) identification of wildlife more likely to cause damage to aircraft, such as flocking birds and larger heavier species; and
 - (d) development of a risk assessment methodology to inform the wildlife control programme.
- 4.3 To set a baseline against which to assess the effectiveness of any future wildlife hazard management plan, the background level of wildlife presence, in the absence of any control measures, should be determined.
- 4.4 A risk assessment should then be conducted to provide a quantifiable benchmark that can be used to evaluate the effectiveness of control measures on a repeatable basis. This should include information such that:
- (a) each wildlife strike species can be assessed in detail;
 - (b) each risk can be quantified in the short and long term, dependent upon wildlife population and seasonal changes;
 - (c) the potential risks can be assessed on a comparable basis;
 - (d) the continuing risk can be monitored; and
 - (e) control actions can be focused in a structured manner.
- 4.4 Standard risk assessment methods should be applied to the information gathered to determine risks and help prioritise the control efforts efficiently.

- 4.5 The assessment should take consideration of the species involved, including size and numbers (e.g. solitary or in flocks) and an assessment of the likely (aircraft damage) severity of the outcome of a wildlife strike, and assessment of the frequency of serious multiple wildlife strikes.

7 Control and hazard reduction

- 7.1 Identification of species causing a hazard is the key in controlling the hazard. Identification of species may provide clues to habits and behaviour that, in turn, may indicate an effective control method for them. For example, species will need to access food stores or prey, and may migrate on a daily basis to achieve this. Interference with migratory pattern may divert wildlife away from aerodromes. Similarly, patterns used by wildlife in seeking drinking water, shelter or nesting and in reproduction may be exploited for wildlife hazard control measures. For example, grass may be cut to remove cover, or left to grow to deter flocking or swarming. Similarly, infilling of stagnant bodies of water may reduce flocking of waterfowl and reduce breeding facilities for airborne insects such as mosquitoes and mayfly upon which birds may feed.
- 7.2 Introduction of predator species may be considered for some species, but this must be considered very carefully so as not to introduce a greater hazard from the predator species, and to ensure the efficacy of deterrence.
- 7.3 Cooperation with external agencies may also be required. For example, local authorities should be discouraged from locating landfill and other waste handling facilities near aerodromes. This will remove readily available sources of food and nesting material. Similarly food outlets operating on and near the aerodrome must ensure that their waste is not left where it can attract wildlife.
- 7.4 Local farmers should also be discouraged from growing crops or farming livestock that may attract local and migratory species.
- 7.5 Ultimately culling of wildlife may be required where there is a hazard that does not respond to other measures.
- 7.6 A Wildlife Management Programme will enable an aerodrome operator to track wildlife incursions and incidents, and will, over time, reveal which measures are effective. This will allow the operator to concentrate on the most effective measures; to introduce new methods where existing measures prove ineffective; or to justify introduction of more contentious measures where necessary.
- 7.7 Management action should always target the removal of attractants on and off airfield (which may conflict with off-airfield conservation initiatives), deterrence of hazardous species away from the aerodrome (harassment) and if necessary lethal control of persistent individuals or to reinforce the effectiveness of non-lethal methods.

8 Examples of high level questions that can be used for (self) audit purposes

- Has the aerodrome established a wildlife hazard management plan?
- Is it documented?
- Is the aerodrome applying an active wildlife management programme (derived from the WHMP)?
- Are there proper routines for observation, reporting and analysis?
- Is wildlife an issue?
- If yes, which kind of wildlife is seen as the most critical?
- What is being done?
- Is there a useful log being maintained? Does it provide information that enables effectiveness of the plan/programme to be assessed?
- Is the log being evaluated?
- What is done in regard to habitats, food sources, disturbance etc?
- What cooperation is there with local planning authority?
- What coordination is there with ATS?
- Is there conflict of interest with the environmentalists?

9 Bird strike reporting

All bird strikes are to be reported according to OTAR Part 13 and the guidance in OTAC 13-1 Occurrence Reporting.

10 Summary

10.1 Wildlife represents a potential threat to aviation safety at many aerodromes. Thus, there is a need to manage the threat.

10.2 Each aerodrome has its own layout, environment and wildlife. An effective Wildlife Management Plan must take account of these factors, and must be tailored to the local needs.

11 Additional guidance material

11.1 The following are additional sources of guidance material:

CAP 772, Birdstrike Risk Management for Aerodromes, see:
<http://www.caa.co.uk/docs/33/CAP%20772Issue1.pdf>

CAA UK publication "Large Flocking Birds", see:

http://www.caa.co.uk/docs/1437/srg_acp_00018-01-030303.pdf

Airport Council International (ACI), ACI Wildlife Hazard Management Handbook - Second Edition 2013 see:

<http://www.aci.aero/Publications/New-Releases/ACI-Wildlife-Hazard-Management-Handbook--Second-Edition-2013>

FAA Wildlife Hazard Mitigation Program

http://www.faa.gov/airports/airport_safety/wildlife/

As with all reference material, when accessing using a link, please check it is the latest version.