



Technical Guidance Material for Aerodrome/Heliport Ecosystems and Species-WC & R Advisory Circular

Subject: TECHNICAL GUIDANCE MATERIAL FOR AERODROME/HELIPORT ECOSYSTEMS AND SPECIES-WILDLIFE CONTROL AND REDUCTION

Date: 10 MARCH 2016

APPLICABILITY:

This document is applicable to aerodrome inspectors, operators and aerodrome bird/wildlife strike committees and coordinators.

PURPOSE

1. To provide guidance on the control and reduction of wildlife in and around aerodromes and on what can be done to overcome the hazard of bird/wildlife strikes.
2. To provide airport personnel with the information necessary to develop and implement an effective bird/wildlife control programme for their aerodrome.

REGULATORY REFERENCES CODES

1. South African Civil Aviation Regulations Parts 34 and 139
2. ICAO Annex 14, Volume I
3. ICAO Doc 9137 AN/898 Part 3 Wildlife Control and Reduction
4. ICAO Annex 16, Volume I and II

INTRODUCTION

Successful wildlife conservation to preserve the numerous species (flying and terrestrial mammals and reptiles) on earth is inconsistent with the development of newer generation quieter aircraft and the ever increasing air traffic needs. It is apparent that greater efforts are needed to control and monitor wildlife movements on and within the vicinity of airports.

Volume I of Annex 14 insists on the establishment of national procedures and continuous assessment of wildlife hazards. The 19th and 20th centuries have seen great improvements in two areas that are at odds with each other.

ESTABLISHMENT OF A COMMITTEE

1. The committee is a platform where information will be gained and swapped on investigations and development in airport wildlife control. It should comprise all stakeholders interested in or associated with the problem. At a minimum, these include
 - governmental departments e.g. transport, agriculture, environment,
 - representatives from aircraft operators,
 - representatives from airport operators,
 - flight safety officials,
 - specialist bird/wildlife hazard trainers,
 - pilot associations and
 - airframe/engine manufacturers
2. Studies to gauge the hazard postured by wildlife should be done on a case-by-case basis and the research may comprise the review of existing practices or the advance of new initiatives. An airport bird/wildlife control policy can be developed by the committee. The committee should meet at systematic interludes in order to stay acquainted with new developments or grave issues and to examine the necessity for updating policy.
3. Forums for stakeholder knowledge and experience gain include participation in regional and global committees like the International Bird Strike Committee (IBSC) and the ICAO regional workshops on bird/wildlife hazard reduction.

ROLES AND RESPONSIBILITIES

1. Civil Aviation Authority

- Certifies all aerodromes used for international operations according to the specifications contained in Annex 14, Volume I. Part of this certification requires that operators develop an aerodrome manual. Any procedures relating to bird/wildlife control are to be developed by the operator and implemented as part of the aerodrome Safety Management System (SMS).
- Provides guidance to ensure that the development of wildlife control programmes is done in adherence to the National Environmental Management: Biodiversity Act (NEM:BA) No. 10 of 2004 and the regulations made thereunder.

2. Airport operator

In charge of the development, implementation and demonstration of an effective bird/wildlife strike and wildlife control programme. The programme should be custom-made and appropriate to the magnitude and level of complexity of the airport, taking into account the identification of the bird hazard and the risk assessment of that hazard.

3. Airport bird/wildlife committee and Programme coordinators

The committee:

- analyses strike data collected and observations of birds/wildlife, assess bird/wildlife risks and
- summarizes trends in order to evaluate and decide what effective control methods should be applied in order to manage the matters arising.

The airport bird/wildlife strike control coordinator (or equivalent):

- coordinate the activities of the wildlife control programme with air traffic control (ATC) and other stakeholders
- also reviews strike reports, monitor daily activity records and maintenance reports to determine the requirements for short- and long-term management programmes,
- pass on information to managers accountable for safety on a regular basis (recommended at least monthly).

REPORTING OF BIRD/WILDLIFE STRIKES

1. It is suggested that the bird/wildlife strike reporting procedure should preferably be coordinated by a single office on site. This procedure should be familiar to all airport personnel and described in the aerodrome manual or associated airport wildlife hazard policy document.
2. All strike reports should be directed to the bird/wildlife strike control coordinator who should forward them to the SACAA.
3. Data may come from sightings, maintenance reports, strike reports and control activities. Reporting must involve pilots and aircraft operators primarily, plus airport ground operations staff, ATC and other aviation stakeholders (e.g. aircraft maintenance organizations). Reviewing and analysing this data will help identify problems at the airport and indicate the effectiveness of current bird/wildlife strike prevention methods.
4. Annex 14, Volume I requires States to collect and forward bird/wildlife strike reports to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS). The IBIS system consists of the reporting forms shown in Annex 1 and 2. However, airport variations in the contents of this form may be necessary in order to facilitate online and electronic airline flight safety recording, but the basis of these systems should encompass, at the very least, the data fields shown in the example forms in Annex 1 and 2.

BIRD/WILDLIFE STRIKE CONTROL PROGRAMME(S)




The scale and details of the programme will vary but at a minimum it should contain the following elements:

- Assignment of personnel
- A process to report, collect and record data on struck and living birds/wildlife
- Risk assessment
- Habitat management and site modification (infrastructure, vegetation and land use)
- Bird/Wildlife control and reduction techniques
- Land use in the vicinity of aerodromes (A process for liaison with non-airport agencies and local landowners)

- Stakeholder engagement
- Staff training

EVALUATING THE BIRD/WILDLIFE STRIKE CONTROL PROGRAMME(S)

Annex 3 can be used to evaluate an airport's bird/wildlife control programme.

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SIGNATURE OF SPECIALIST: AEP	NAME IN BLOCK LETTERS	DATE
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SIGNATURE OF EXECUTIVE: AVIATION INFRASTRUCTURE	NAME IN BLOCK LETTERS	DATE

END

Annex 1- Bird Strike Reporting Sample Form 1

BIRD STRIKE REPORTING FORM

Title:

<p>Date: date 01/02 alt Make/Model 0304 na Make/Model 0309 alt Registration 07 day month year 08 Time: em <input type="checkbox"/> A day <input type="checkbox"/> B dusk <input type="checkbox"/> C night <input type="checkbox"/> D 10 drone Name 11n2 way Used 13 tion if En Route 14 ht AGL ft 15 id (IAS) kt 16 e of Flight 17 parked <input type="checkbox"/> A en route <input type="checkbox"/> E taxi <input type="checkbox"/> B descent <input type="checkbox"/> F take-off run <input type="checkbox"/> C approach <input type="checkbox"/> G climb <input type="checkbox"/> D landing roll <input type="checkbox"/> H s) of Aircraft radome <input type="checkbox"/> 18 <input type="checkbox"/> 19 windshield <input type="checkbox"/> 20 <input type="checkbox"/> 21 nose (excluding above) <input type="checkbox"/> 22 <input type="checkbox"/> 23 engine no. 1 <input type="checkbox"/> 24 <input type="checkbox"/> 25 2 <input type="checkbox"/> 26 <input type="checkbox"/> 27 3 <input type="checkbox"/> 28 <input type="checkbox"/> 29 4 <input type="checkbox"/> 30 <input type="checkbox"/> 31 propeller <input type="checkbox"/> 32 <input type="checkbox"/> 33 wing/rotor <input type="checkbox"/> 34 <input type="checkbox"/> 35 fuselage <input type="checkbox"/> 36 <input type="checkbox"/> 37 landing gear <input type="checkbox"/> 38 <input type="checkbox"/> 39 tail <input type="checkbox"/> 40 <input type="checkbox"/> 41 lights <input type="checkbox"/> 42 <input type="checkbox"/> 43 other (specify) <input type="checkbox"/> 44 <input type="checkbox"/> 45</p>	<p>Effect on Flight none <input type="checkbox"/> 30 aborted take-off <input type="checkbox"/> 31 precautionary landing <input type="checkbox"/> 32 engines shut down <input type="checkbox"/> 33 other (specify) <input type="checkbox"/> 34</p> <p>Sky Condition 37 no cloud <input type="checkbox"/> A some cloud <input type="checkbox"/> B overcast <input type="checkbox"/> C</p> <p>Precipitation fog <input type="checkbox"/> 38 rain <input type="checkbox"/> 39 snow <input type="checkbox"/> 40</p> <p>Bird Species* 41</p> <p>Number of Birds</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="text-align: center;">Seen 42</td> <td style="text-align: center;">Struck 43</td> </tr> <tr> <td></td> <td style="text-align: center;">1 <input type="checkbox"/> A</td> <td style="text-align: center;"><input type="checkbox"/> A</td> </tr> <tr> <td></td> <td style="text-align: center;">2-10 <input type="checkbox"/> B</td> <td style="text-align: center;"><input type="checkbox"/> B</td> </tr> <tr> <td></td> <td style="text-align: center;">11-100 <input type="checkbox"/> C</td> <td style="text-align: center;"><input type="checkbox"/> C</td> </tr> <tr> <td></td> <td style="text-align: center;">more <input type="checkbox"/> D</td> <td style="text-align: center;"><input type="checkbox"/> D</td> </tr> </table> <p>Size of Bird 44 small <input type="checkbox"/> S medium <input type="checkbox"/> M large <input type="checkbox"/> L</p> <p>Pilot Warned of Birds 45 yes <input type="checkbox"/> Y no <input type="checkbox"/> N</p> <p>Remarks (describe damage, injuries and other pertinent information) 46/47 </p>		Seen 42	Struck 43		1 <input type="checkbox"/> A	<input type="checkbox"/> A		2-10 <input type="checkbox"/> B	<input type="checkbox"/> B		11-100 <input type="checkbox"/> C	<input type="checkbox"/> C		more <input type="checkbox"/> D	<input type="checkbox"/> D
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	11-100 <input type="checkbox"/> C	<input type="checkbox"/> C														
	more <input type="checkbox"/> D	<input type="checkbox"/> D														

rted by
 (Optional)

* Send all bird remains including feather fragments to:

THIS INFORMATION IS REQUIRED FOR AVIATION SAFETY

Annex 2- Bird Strike Reporting Sample Form 2

SUPPLEMENTARY BIRD STRIKE REPORTING FORM OPERATOR COSTS AND ENGINE DAMAGE INFORMATION

BASIC DATA

Operator 01/02
 Aircraft Make/Model 02/04
 Engine Make/Model 03/02
 Aircraft Registration 04
 Date of strike day month year 05
 Airline/Location if known 11/12/16

FLIGHT INFORMATION

Aircraft time out of service Hours 06
 Estimated cost of repairs or replacement U.S.\$ (in thousands) 07
 Estimated other costs
 (e.g. loss of revenue, fuel, hotels) U.S.\$ (in thousands) 08

SPECIAL INFORMATION ON ENGINE DAMAGE STRIKES

Engine position number	1	2	3	4
Reason for failure/shutdown	09	10	11	12
uncontained failure	<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A
fire	<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B
shutdown — vibration	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C
shutdown — temperature	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D
shutdown — fire warning	<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E
shutdown — other (specify):	<input type="checkbox"/> Y	<input type="checkbox"/> Y	<input type="checkbox"/> Y	<input type="checkbox"/> Y
.....				
shutdown — UNKNOWN	<input type="checkbox"/> Z	<input type="checkbox"/> Z	<input type="checkbox"/> Z	<input type="checkbox"/> Z
Estimated percentage of thrust loss*	_____ 13	_____ 14	_____ 15	_____ 16
Estimated number of birds ingested	_____ 17	_____ 18	_____ 19	_____ 20

Yes 01

*may be difficult to determine but even estimates are useful.

Bird remains including feather fragments to:

Annex 3- Evaluating the bird/wildlife control programme

The following questions can be used to determine whether an airport's bird/wildlife programme is effective. If any response to these questions is negative or unclear:

- i. the programme should be reviewed*
- ii. a programme(s) should be established if none existed*

Local risk assessment		YES	NO
1	Has a bird/wildlife strike reporting procedure been implemented at the airport?		
2	What is the bird/wildlife strike rate at the airport over the last five years (with or without damage to the aircraft)?		
3	Is there a procedure to collect regularly information about birds/wildlife, both dead (carcasses) and living?		
4	Has a means for positively identifying carcass remains been established?		
5	How many reports from pilots are related to intrusions of wildlife, other than birds, over the last five years?		
6	Has a list of bird/wildlife attractants at and surrounding the airport been completed?		
Wildlife control programme		YES	NO
1	Is there a wildlife control officer responsible for the management of wildlife on the airport?		
2	Has a land-use plan been established with regard to effective land use on and off the airport as it pertains to the wildlife control programme?		
3	What ecological measures are implemented to reduce wildlife attractiveness at the airport and in the vicinity?		
		YES	NO

4	Is there a habitat management programme on the airport?		
		YES	NO
5	Are garbage dumps forbidden around the airport?		
	If yes, within what distance are they forbidden?.....		
		YES	NO
6	Is the airport fence suitable to prevent hazardous animal incursions?		
7	Which scaring methods are implemented at the airport?		
		YES	NO
8	Have staff been employed and trained specifically to scare off birds/wildlife at the airport?		