

INTERNATIONAL BIRD STRIKE COMMITTEE

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TRAINING FOR AIRPORT WILDLIFE CONTROL PERSONNEL: THE IBSC RECOMMENDATIONS

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Abstract

In the past a wide range of airport personnel were engaged in wildlife control at airports worldwide. Airport staff from maintenance, rescue and fire fighting, security and even outsourced personnel have undertaken this role. ICAO attempts, in the 5th edition of Annex 14, to set as a standard 'competent' personnel for ongoing evaluation of wildlife hazards. More guidance as to what constitutes competence or properly trained personnel is expected in the forthcoming 4th edition of Doc 9137. In the meanwhile the International Bird Strike Committee sought to develop a 'best practice' for the training of airport wildlife control personnel by forming a Task Group to develop a training recommendation. Surprisingly this group found almost no state guidelines worldwide and little in the way of informal training guidelines among ICAO states reviewed. Using input from various national regulatory agencies, informal programs and the group's wildlife control experience, a 'best practice' was developed and forwarded to IBSC for approval. This training guideline addresses not only the qualifications of the trainers, but also the subject matter to be covered and the issue of recurrent/requalification training of airport wildlife control personnel.

Key words: Wildlife control, wildlife management, personnel training, IBSC recommendations

1. Introduction

A significant number of publications are available from various international (e.g. ICAO, IBSC, ACI, etc.) or national organizations and regulatory agencies (e.g. FAA, Transport Canada, CAA, etc.) in the field of airport wildlife management in order to reduce the risk of strikes to aircraft on and around airports. All of these publications recommend that airports allocate personnel in the field to rapidly detect any wildlife strike risks and apply effective measures to mitigate or eliminate them.

In all publications one of the key issues is that the personnel involved in the wildlife management should be "competent" or "properly trained". However very few guidelines are provided regarding what constitutes proper wildlife management training. Further to a survey performed in 10 ICAO states in N. America, Europe and Australia training of airport personnel varies from codified to informal to nothing.

Following ICAO recommendations stating that airport staff from maintenance, rescue and fire fighting or security can undertake the role of the wildlife management many airports worldwide engaged such staff to carry out field wildlife control measures, mostly as secondary duty. In other cases, again as per ICAO recommendations, if the airport itself cannot provide the appropriate staff, outsourced personnel can be contracted to perform the respective duties as their primary task. In many of these cases the airport management outsourced ornithologists who had no knowledge of aviation operations at the airport.

Consistent with the Standards For Aerodrome Bird/Wildlife Control published by IBSC in 2006, airports should engage dedicated personnel, without any other tasks, for field wildlife management. Doing so may create certain challenges:

- a. Staff formerly engaged in other positions must be highly motivated and understand the significance of their new tasks
- b. Personnel formerly engaged in operations, maintenance, etc. without any experience in wildlife management must be trained to obtain effective wildlife species identification in order to apply the proper measures and avoid conflicts with nature conservation restrictions.
- c. Outsourced personnel specialised in wildlife biology but without previous experience in airport operations must be trained in this field and also on aeronautics, communication with ATC, etc.

The above, together with the most recent updates in ICAO standards which includes wildlife strike risk management in the airport Safety Management System, raises the requirement for establishing standards for the proper training of airport wildlife management personnel.

The authors, and the rest of the members of the IBSC Training Task Group, are providing this framework for the final debate and the endorsement by the IBSC members of these training standards.

It should be noted that these are the minimum guidelines for training field wildlife control personnel and that, according to the opinion of IBSC, they should apply to any aerodrome operating regularly scheduled commercial air traffic, irrespective of the movement frequency or type of aircraft movement in consonance with IBSC Recommended Practices No1.

Important Notices:

- *This paper is the work of the authors, supported by the members of the IBSC Training Task Group and other IBSC members. The views expressed may not reflect the full and final views of the organizations where they are employed.*
- *These guidelines are provided in good faith and every effort has been made to ensure that the contents are accurate. IBSC, the authors and IBSC membership accept no responsibility for any loss or damage howsoever caused arising from the use or implementation of these guidelines.*

2. Proposed guidelines for training personnel for Airport Wildlife Management

The duties of personnel conducting wildlife management on an airport are outlined in the publications made in this field. These duties require a diverse knowledge in the field of wildlife biology, ecology and conservation.

In the USA the FAA requires that much airport wildlife work be performed by a 'wildlife biologist'. However, many countries worldwide have no such person(s) qualified nor can they afford to hire a consultant, especially at small regional airports with low or seasonal traffic. In many countries and airports emphasis is given to the knowledge of the aviation environment, like airport operations, aeronautics, and safety management.

For personnel engaged in wildlife management at an airport a thorough understanding of both disciplines, aviation and biology, is essential in order to maximize the effectiveness of the wildlife management programme. Consequently, before engaging wildlife controllers airports should ensure that the staff members undertaking these tasks are properly trained.

Recommendation

Airport wildlife control personnel must receive training prior to their initial engagement as wildlife controllers.

S2.1. Establishment of Wildlife Management Training Procedures

Compliance with ICAO standards varies significantly from state to state based on national characteristics (number, size, category and distribution of airports, synergies between civil aviation and air force, etc.). Further to this variation within individual states wildlife management requirements on each airport differs according to the special characteristic of that airport, like the operational features (e.g. category, size, traffic, etc.), the ecosystems and the land uses occurring in its vicinity. Consequently, it is not realistic to provide detailed instructions about the training of personnel involved in airport wildlife management.

However, as long as the establishment of a wildlife management programme is a standard for each airport, it is recommended that the states, in cooperation with the National Wildlife Management Committees, should include in their regulations guidelines for the proper training of personnel in this field, and that the airports should include training procedures in their respective wildlife hazard management programme.

Recommendations

Each state, indeed each airport within a state, may have varying wildlife management requirements due to varying ecosystems and aircraft operations. Detailed instructions cannot be given due to these variables, only general guidelines can be promulgated.

States should prepare and distribute, with the cooperation of their National Wildlife Management Committees, guidelines for the training of airport personnel involved in airport wildlife management.

Airports should include the principles of airport wildlife control training in the respective section of their Airport Operations Manual, providing more details within their wildlife management programme procedures.

2.2 Curriculum

ICAO recommends, in Annex 14, Chapter 9.4 “Wildlife Strike Hazard Reduction”, the use of Airport Service Manual (Doc 9137), Part 3, for guidance on effective measures for wildlife management on and around the airport. Other major international and national publications give descriptions of passive (long-term) and active (short-term) measures which can be used to mitigate wildlife strike risks. A number of recommendations such as procedures for record keeping, reporting and analysing data, and assessing strike risks are also provided. Such publications which provide material and guidance can be the basis for the training of the airport personnel.

However, there is great variability regarding the measures that each airport should use. This is due to the varying ecosystems in each airport’s vicinity, the conservation status of wildlife species and habitats within these ecosystems, land uses around the airport and operational parameters of the airport. Consequently, different airports will require different levels of basic training.

Training varies also according to the background of the personnel engaged in the respective wildlife management services. Keeping a great pool of personnel properly trained in wildlife management techniques provides an airport with flexibility to effectively react in unexpected increases of wildlife

activities. Airports with a large pool of operations personnel may have more flexibility using personnel from this pool once they have received proper wildlife mitigation training. Other airports may consider it more important to engage personnel already familiar with wildlife and provide them the respective training on aviation issues.

Personnel engaged in airport wildlife management must be taught to recognise that the responsibility for mitigating wildlife strike risk at their airport lies with them. Emphasizing the importance of their work is a way to improve motivation and consequently improve the standards of the provided services

Recommendation

All personnel engaged in airport wildlife management should receive training prior to engagement.

The training should provide personnel the motivation to keep high standards in the services they will provide.

2.2.1 Wildlife Strike Basics.

All personnel engaged in wildlife management at an airport should initially be introduced to the nature (physics) and the definition of the wildlife strikes to aircraft in relation to the type (i.e. confirmed, unconfirmed, etc.) and the location (i.e. on-airport, off-airport, en-route, etc.). They should also receive training on the nature and extent of the aviation wildlife management problem by reviewing the history of the strikes and the various strike levels (with no damage, with small damage, catastrophic, fatal), the legal aspects, and overviews of the airport/region/country strike trends as well as global strike trends.

National and International standards and recommended practices, regulations and reference material should be reviewed also.

Aircraft operations, with respect to the tolerance of the aircraft body and engines to a strike, should be thoroughly understood. Further, aircraft nomenclature, to ensure understanding of types of aircraft, and basic airplane operating characteristics must be reviewed.

Recommendation

All personnel engaged in airport wildlife management should initially receive training regarding the following fields:

- a. **Nature and definition of wildlife strikes, nature and extent of the aviation wildlife management problem;**
- b. **National and International regulations, standards and guidance material related to airport wildlife management programs;**
- c. **Issues of legal liability, personal and corporate, relevant to the country concerned;**
- d. **Aircraft identification, body and engine design, certification standards, and impact of wildlife strikes on aircraft systems.**

2.2.2 Wildlife Hazard Identification

As soon as the nature of the problem is understood the next step is dictated by the airport's Safety Management System (SMS), which should incorporate wildlife strike hazards. This step is the identification of the hazards.

The physics of a strike provides the mass, the energies and the results of a collision. Airport staff involved in field wildlife management must identify the wildlife species that constitute hazards to an aircraft, classifying them according to a number of biological parameters (e.g. body mass, social behaviour, diurnal-annual movements, etc.).

Personnel without previous experience in wildlife biology must receive training on species identification and the respective use of field guides; also wildlife ecology and biology. Identification of rare and endangered species or species of special concern is necessary. Understanding international and national regulations and policies related to these species' conservation status will prevent the application of measures that will cause conflict with conservation regulations.

Staff members with experience in wildlife biology may have a good background in the identification of hazardous wildlife species; however, they need training on the local conditions, i.e., the numbers and the behaviour of wildlife at the airport and the vicinity. Furthermore, in order to assess risks on the airport they require training on their airport's operations and familiarization with that airport.

A key issue related to wildlife hazard identification is the collection and identification of strike remains. Such remains vary from whole bodies to various parts (e.g. wings, feathers or downs) or even flesh or blood smears. The remains must be properly collected and preserved. If immediate identification is not possible through field guides, the remains must be transferred, without being denaturized, to a laboratory that will be able to perform the identification. Wildlife control personnel should receive instruction on how to collect and preserve the various types of wildlife remains.

Finally in all cases instruction on the structure and function of the airport's SMS is of utmost importance. All personnel involved in airport wildlife management must receive instruction in wildlife strike risk assessment, management principles and how these fit into the overall airport SMS.

Recommendations

All personnel engaged in airport wildlife management should receive training regarding wildlife hazard identification:

1. **Qualified airport personnel should receive training on:**
 - a. **Wildlife ecology and biology;**
 - b. **Wildlife identification, including the use of field guides;**
 - c. **Rare and endangered species and species of special concern, including related regulations and policies.**
2. **Personnel without aviation experience should receive training on airport familiarization, signage and marking, navigational aids, airport operations, runways, taxiways and other aircraft movements areas as well as any other issue related to this field.**

3. **All personnel should receive instructions on:**
 - a. **Strike remains collection, preservation and identification;**
 - b. **Wildlife strike risk assessment and risk management principles and how these programs relate to the airport's safety management system.**

2.2.3 Wildlife Hazard Prevention

Wildlife management at airports is a very broad mandate. The personnel involved must deal with a number of practical, technical and scientific issues related to the presence of wildlife at the airport and the vicinity. The primary goal of the services provided is to effectively control wildlife hazards on daily basis. This may be achieved by a combination of actions that differ not only between airports but also between the seasons and even through the years (e.g. global warming). A secondary goal is to keep statistical records of wildlife species, populations and activities, measures applied and their effectiveness.

Personnel involved in airport wildlife hazard prevention must receive training on the measures that have been developed so far in this field.

The differences between passive and active measures, the variability in the use of each measure and its effectiveness (including existing wildlife management models) must be demonstrated.

Wildlife controllers must be instructed in the identification of on- and off-airport attractions, the connections between the ecosystems at the airport site and its vicinity, and how to study and manage the various attractions with the most effective methodologies (i.e. vegetation policies).

The training on active wildlife control should not be restricted to the philosophy of using acoustic, visual and removal techniques. Personnel should receive guidelines about the “how” (choice of measure), “what” (bird priorities), “when” (time priorities), and “where” (area priorities). This might also include instruction on the combination between various active techniques (e.g. acoustic and removal) and their interactions with the passive measures.

For effective application of active measures without affecting airport traffic or causing any other risks (e.g. erroneous disperse of birds towards moving aircraft) it is necessary for personnel to be familiar with driving on the airport, communicating with air traffic control (ATC) and the principles of the aircraft movements (i.e. aircraft separation, holding patterns, approach and departing procedures, etc.). Although qualified airport personnel may be familiar with these principles it is worth repeating in training to establish their relationship with wildlife management.

Training on the above list of issues should not be restricted to the theoretical part (in room) but also requires practical training (at the field), based on the specific wildlife aspects at the airport and its vicinity, as well as the specific measures in place to manage wildlife (e.g. the airport ecosystems, equipment handling and management, etc.).

Finally personnel safety aspects related to the use of the various piece of equipment must be demonstrated. Special attention should be given to the use of the firearms and explosives (such as pyrotechnics) and also the codes of practice of culling in relation to wildlife management and animal welfare.

Recommendations

Regarding wildlife hazard mitigation the personnel involved in airport wildlife management should be instructed on the following fields:

- a. **Long-term (passive) measures, including on and off airport habitat management, identification of attractions, vegetation policies, NAVAID protection, drainage system management, etc;**
- b. **Short-term (active) measures, including acoustic measures, visual measures and wildlife removal techniques;**
- c. **Firearm and field safety, including the use of personal protective equipment.**

Personnel with no aviation experience or training should receive instruction on the following:

- a. **Airport driver training;**
- b. **Air traffic control communication – radiotelephony;**
- c. **Roles & responsibilities of airport operations;**
- d. **Aircraft operations and movements.**

Training on wildlife hazard prevention should include both theory and practice.

2.2.4 Wildlife Hazard Prevention Documentation

Effective wildlife management is dependent upon proper documentation. Correct and systematic data gathering has many purposes. It can provide feedback about wildlife trends and track wildlife risks. It can be used to monitor and assess the effectiveness of the wildlife management programmes. It can be used to justify, in case of an incident, that the airport has taken the proper action in line with the respective published procedures and national and international regulations.

Documentation also includes record keeping and analysis of wildlife strikes, and reporting of wildlife strikes to the national authorities as per ICAO recommendations.

Details and standards about the logging of wildlife management activities and the wildlife strike reporting are provided in the IBSC Recommended Practices No. 1 (sections 5 & 6).

Instructions regarding proper documentation should be included In the training of the wildlife controllers.

While wildlife specialists may be familiar with counts and surveys, personnel without any previous experience in this area should receive proper instruction on how to conduct standardised counts/surveys (incl. why they should be standardised) in order to effectively record wildlife activities and timely identify the respective hazards; also how to use the data collected to monitor program effectiveness.

Recommendation

Personnel engaged in airport wildlife management should be instructed on:

- a. **the principles and details of the respective documentation and record keeping regarding wildlife activities, control measures and strikes;**
- b. **the statistical analysis of the various data sets;**
- c. **Proper reporting (wildlife strike reports, annual reviews, etc.).**

2.2.5 Recurrent Training

Throughout the aviation industry virtually all disciplines require some nature of recurrent training due to the high standards required to successfully conduct aviation activities. Recurrent training is essential for

airport operations personnel, airplane operators, airplane owners, air traffic personnel, maintenance personnel, etc. In line with these standards, in addition to initial training, personnel engaged in airport wildlife management should receive periodic refresher training.

Annual recurrent training can cover annual reviews of the risk assessment results, improvements regarding wildlife control techniques, risk management approaches applied by the airport, as well as safety rules applied to the use of the equipment, especially firearms, etc.

Advanced refresher training at longer intervals (e.g., every 3-5 years) can cover the changes that have been observed in the function of the ecosystems either due to the implementation of habitat management measures (on and around the airport) or due to changes in land uses in the vicinity of the airport; operational changes of the airport (e.g. increase in traffic or characteristics of the airport); significant changes to wildlife management regulations and standards (at the international, national and/or local level) and/or technological advancements in wildlife risk monitoring and management (i.e. RADAR or other remote sensing technologies).

Recurrent training can have many forms. In-house advanced training, national or international courses organized by specialists, participation at the meetings of the wildlife strike/control committees or visits to other airports can provide additional education to and improve motivation in personnel involved in airport wildlife management.

Recommendation

Airport wildlife control personnel should receive refresher training at periodic intervals. This training can be used to demonstrate skill levels or situational awareness; review firearms safety, changes in the local environment or in equipment use, risk management policy, recent wildlife events at the airport, or discuss improvements in active and passive measures and such other matters as airport management deems appropriate. An annual review is recommended while recurrent advanced training in longer intervals should be considered.

2.3 Organisation-Certification-Documentation

2.3.1 Trainer's qualifications

Each airport has established procedures, complying with ICAO standards, through its Human Resources Department, for the training of its personnel engaged in its operation. These standards require training to be provided usually by specialists in each field. In line with this requirement the airport wildlife management training must be conducted either by airport personnel already qualified in this field or by outsourced specialists with proven experience. The minimum qualifications for personnel appointed to provide training in wildlife management at the airport are to have previously completed formal courses of instruction in this field and the rest of airport operations areas. It also recommended that the trainer should have experience in active involvement in wildlife risk assessment and management procedures and actions.

In order to maximize the effectiveness of the appointed trainers many airports provide trainers with further education to improve their training skills. Such education may include subjects like presentations skills, train the trainer, teaching adults, etc.

Airports with limited resources may not have the qualified personnel to perform wildlife management training either in part or in total. In such cases formal courses organized by the national wildlife control committees, universities and other education institutions, military establishments, government entities or

private agencies with experience in providing wildlife management services (training included), can contribute.

Recommendations

Training of airport wildlife control personnel must be conducted by qualified airport wildlife control personnel or specialists with proven experience in this field. The minimum qualifications for personnel appointed to provide training in wildlife management at the airport are to have previously completed a formal course of instruction in airport wildlife control and be qualified to work on an airport. Trainers should also have received instruction in presentation skills and adult education. Formal courses may be available from national wildlife control committees, universities and other education institutions, military establishments, government entities or similar private agencies.

2.3.2 Certification - recertification

Many regulatory agencies request that the knowledge gained during training on various issues related to airport operation or other aviation related fields (e.g. ATC communication) should be demonstrated by the completion of a written and/or practical test. The trainees who successfully pass the test(s) receive a written certification attesting to the basic knowledge gained during the training course.

Similar to the above it is recommended that successful completion of an airport wildlife management training course must be demonstrated by completion of a written and/or practical test followed by a written certification to those who passed the test.

At many airports, further to the initial certification, a periodical recertification is required especially in the fields more sensitive to personnel safety, e.g. the use of shotguns. Recurrent training should also include a requalification and/or recertification as part of more general national or international standards or guidelines in the field of airport operations.

Recommendations

Successful completion of an airport wildlife training course must be demonstrated by completion of a written and/or practical test. A written certification must be provided to those who successfully pass the test(s). If a published training procedure is not provided by the trainer the certificate should attest to the fields the trainee has successfully completed.

Recurring training should be connected to requalification and recertification procedures.

2.3.3 Documentation

Guidelines published by ICAO and other international agencies or by national aviation regulators require periodical reviews and audits of the compliance on issues of aviation safety management. Since wildlife management is included in this field, training administered to any person for the purpose of conducting airport wildlife control should be documented and records retained for a sufficient period, as directed by the airport's wildlife control program, in order to comply with the above mentioned guidelines.

Recommendations

Training administered to any person for the purpose of conducting airport wildlife control must be documented and records retained for a sufficient period, as directed by the airport's wildlife control program, or as necessary to satisfy periodic reviews or audits required under ICAO guidelines.

2.4 Duration

The level of experience required for the personnel involved in airport wildlife management depends on the organization and implementation of the respective Safety Management System in place. The two main disciplines involved in wildlife management, wildlife biology and airport operations, are complicated and their various aspects need to be thoroughly understood by the trainees.

2.4.1. Wildlife Management Training.

Due to the value and quantity of the information that has to be assimilated the duration of this initial training should not be less than 3 working days (or 24 hours) for both theoretical and practical parts.

If wildlife species at an airport or its vicinity show a significant diversity the theoretical part should be extended to 1 more day in order to have time to deal properly with the identification issues.

Practical parts may also be extended (1-2 more days) in the case of airports with many runways and/or significant variation in environmental attributes of the airport and its vicinity (significant diversity in species and ecosystems).

Recommendation

Basic training on wildlife management aspects may vary between 3 to 5 days according to the complexity of the ecosystems and their components (mainly wildlife species) at the airport and the vicinity.

2.4.2. Airport operations

The time required for airport operations training varies according to the size and type of the airport, the type of the airport equipment, the SMS (Safety Management System), the level of the radiotelephony licensing, etc.

In many cases airside driving may include 2-3 different levels of training that may vary in time from a few hours to one day, e.g. apron driving license, maneuvering driving license, runway driving license.

Training for radiotelephony licensing, although based on ICAO standards, may also vary according to national or regional regulations from 1 to 3 days, including a written test.

Due to this complexity it is beyond the scope of this document to recommend the time needed for the training of personnel on aspects of airports operations included in 2.2 above. However, it must be emphasized that understanding airport operations is at least as important as understanding wildlife biology so that one risk is not traded for another.

Recommendation

Training on airport operation aspects (for those without aviation experience) should follow the airport, regional or national standards issued for this field in terms of duration.

2.4.3 Assimilation

Following the initial training, a period under supervision is required for those engaged in field actions. This supervision will ensure deep understanding of the various aspects, full compliance with aviation safety management rules and that the interactions between wildlife management and airport operations are fully understood.

It is highly recommended that, due the character of the job, before releasing any staff member to field work that it is required that each staff member demonstrate the highest possible level of assimilation regarding ALL aspects in order to avoid situations that may reduce safety margins.

Recommendation

Prior to releasing any staff member to provide wildlife management actions at the field the airport's manager should ensure that the proper level of assimilation of ALL the required information has been reached.

2.4.4 Recurrent training

The duration of recurrent training varies according to the complexity of the issues that must be communicated, the frequency, the purpose (e.g. recertification), the requirement to reassess the practical competency of the personnel together with their theoretical background and the type of the training (e.g. in house, external courses, visiting other airports, participation in IBSC meetings, etc.).

Annual recurrent training should not be less than half a day (or 4 hours) while periodical recertification training should last at least 1 full day (or 8 hours) in order to properly cover all aspects.

Recommendation

The duration of the recurrent training may vary according to the frequency, the contents and the recertification/requalification requirements. For annual refresher training at least half a day is advised, while for less frequent recurrent training the minimum should not be less than a full day.

2.5 Acknowledgements

The authors would like to thank the two other members of the IBSC Training Task Group for that contributed to the development of Training Guidelines for Airport Wildlife Management, Dr. John Allan (U.K.) and Prof. Thomas Kelly (Ireland), and also Kylie Patrick (Australia), Valter Battistoni (Italy), Albert de Hoon (The Netherlands) and Valentini Koloka (Greece) for their contribution.

2.6 References

Airport Council International (2005), Aerodrome Bird Hazard Prevention and Wildlife Management Handbook, 1st Edition. ACI, Geneva.

Civil Aviation Authority (1998), CAP 680 Bird Control On Aerodromes. CAA, London.

Canadian Aviation Regulations (CARs) Amendment 2008-1. Transport Canada, Ottawa.

Center Français de Formation des Pompiers d'Aéroport (C2FPA) (2008), Direction générale de l'aviation civile pour la formation de la Prévention du Péril Animalier sous le numéro : **DGAC.PPA-01/2008**. C2FPA, Coings.

Cleary, E.C. & Dolbeer, R.A. (2005), Wildlife hazard management at airports. - A manual for airport personnel. U.S. FAA, Washington DC.

Federal Aviation Administration (2006), **AC No:** 150/5200-36, Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports. U.S. FAA, Washington DC.

International Civil Aviation Organisation (1991), Airport Services Manual – Part 3 Bird Control and Reduction (**Doc 9137P3**). ICAO, Montreal.

Transport Canada (2001), Sharing The Skies – An Aviation Guide To The Management Of Wildlife Hazards. Transport Canada, Ottawa.

Transport Canada (2007), Airport Wildlife Management Bulletin No.39 - Airport Wildlife Management Training Requirements, Transport Canada, Ottawa

International Birdstrike Committee Airport Wildlife Training

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If you think training is waste of money and
time, then try and accident



ICAO's standard for airports requires airport wildlife work by "qualified" personnel –

BUT fails to define "qualified"

Cir 208
Ann 172



Training Guidelines for Aircraft Accident Investigators

Approved by the Secretary General
and published under his authority

June 2003

International Civil Aviation Organization



SCOPE OF THE PROBLEM:

Worldwide training of airport personnel varied from codified to informal to nothing

Surveyed 10 ICAO states in N. America, Europe and Australia

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Knowledge of two disciplines
REQUIRED:
Aeronautics/aerodynamics *and*
Biology/zoology

Neither alone can be successful

States and airports vary worldwide, not only in their operational plans and ecosystems but also in their ability to conform to ICAO standards



ICAO recommendations refer to a wide range of personnel that can be engaged to wildlife management

Recognition of the responsibility and motivation will improve the standards of the services provided by the personnel

IBSC 'best practice' must recognize all limitations **and** training becomes even more important



Training programs should be developed in conjunction with state regulators and the national wildlife control committee and various levels of guidelines should be included in national regulations and airport manuals



Curriculum (all personnel)

- Nature and definition of wildlife strikes
- Nature and extent of aviation wildlife management problem
- Regulations, standards, guidance in effect
- Legal liability issues
- Aircraft identification, body and engine design, certification standards and strike impacts
- Strike remains collection, preservation & identification



Curriculum cont'd

- Passive measures: on/off airport identification of attractions, habitat management, NAVAID protection, drainage system management
- Active measures: acoustics, visual measures and removal techniques
- Firearm/field safety, personal protective equipment
- Documentation, statistics, reporting

Finally,

- *Risk assessment and risk management principles

- *Relationship of these principles to the airport's safety management system (SMS)



Qualified airport personnel - Not qualified personnel
working on airports:



Don't trade one hazard for another

Qualified airport personnel should receive training on:

- **Wildlife ecology and biology;**
- **Wildlife identification, including the use of field guides;**
- **Rare and endangered species and species of special concern, including related regulations and policies.**

Non-qualified personnel:

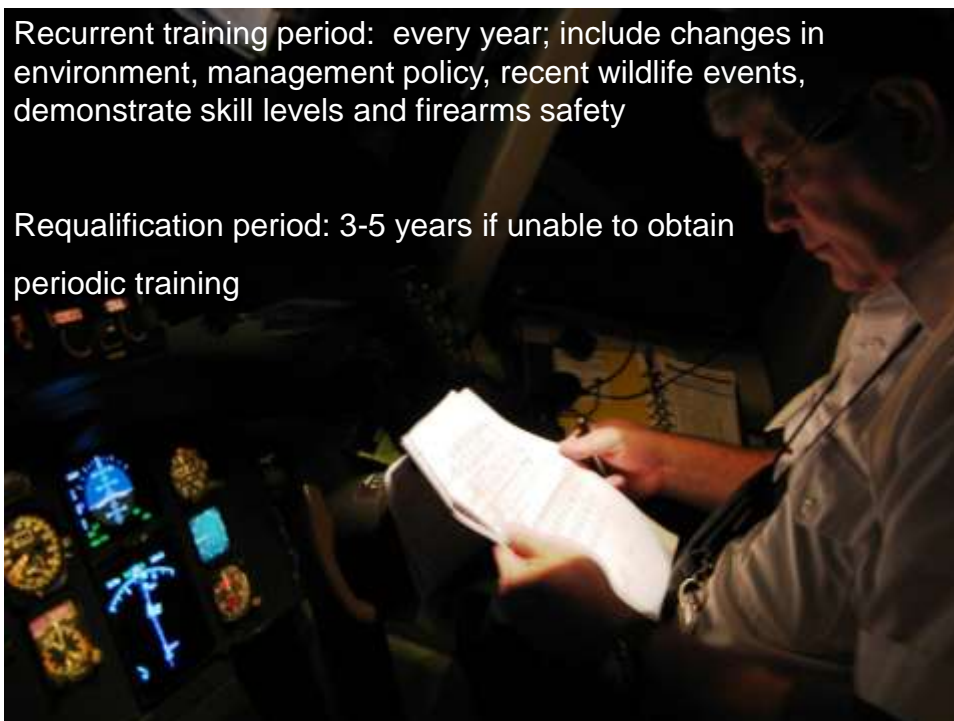
- Airport familiarization, signage and marking, navigational aids, airport operations, runways, taxiways and other aircraft movements areas.
- Airport driver training, ATC communication-radiotelephony
- Roles and responsibilities of airport operations
- Aircraft operations and movements

Airport wildlife control personnel should receive periodic refresher training; if periodic training is unavailable, personnel should requalify periodically

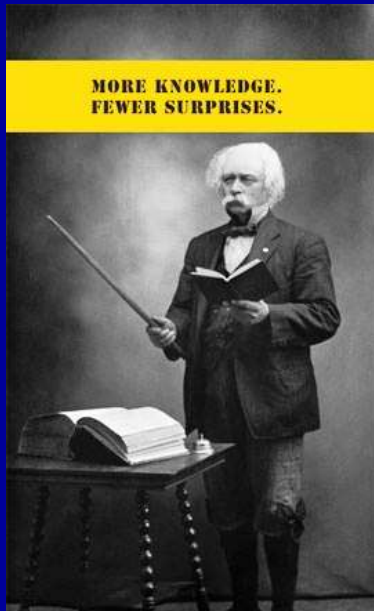


Recurrent training period: every year; include changes in environment, management policy, recent wildlife events, demonstrate skill levels and firearms safety

Requalification period: 3-5 years if unable to obtain periodic training



Who is qualified to teach: how do we know?



+



Adult education is available through universities, military establishments, government entities, private agencies, other educational institutions



Training must be documented and records retained

Successful completion of the course should be demonstrated by completion of a written or practical test and a written certification should be provided



Training duration and final release may vary according to the various requirements of the wildlife management, airport operations and the level of assimilation of the trainees.





Recommendation 1

- All personnel engaged in airport wildlife management should receive training prior to engagement.
- The training should provide personnel the motivation to keep high standards in the services they will provide.

Recommendation 2

- Each state, indeed each airport within a state, may have varying wildlife management requirements due to varying ecosystems and aircraft operations. Detailed instructions cannot be given due to these variables, only general guidelines can be promulgated.
- States should prepare and distribute, with the cooperation of their National Wildlife Management Committees, guidelines for the training of airport personnel involved in airport wildlife management.
- Airports should include the principles of airport wildlife control training in the respective section of their Airport Operations Manual, providing more details within their wildlife management programme procedures.

Recommendation 3

All personnel engaged in airport wildlife management should initially receive training regarding the following fields:

- 1. Nature and definition of wildlife strikes, nature and extent of the aviation wildlife management problem;**
- 2. National and International regulations, standards and guidance material related to airport wildlife management programs;**
- 3. Issues of legal liability, personal and corporate, relevant to the country concerned;**
- 4. Aircraft identification, body and engine design, certification standards, and impact of wildlife strikes on aircraft systems.**

Recommendation 4

All personnel engaged in airport wildlife management should receive training regarding wildlife hazard identification:

- 1. Qualified airport personnel should receive training on:**
 - a) Wildlife ecology and biology;**
 - b) Wildlife identification, including the use of field guides;**
 - c) Rare and endangered species and species of special concern, including related regulations and policies.**

Recommendation 4 (cont'd)

2. **Personnel without aviation experience should receive training on airport familiarization, signage and marking, navigational aids, airport operations, runways, taxiways and other aircraft movements areas as well as any other issue related to this field.**
3. **All personnel should receive instructions on:**
 - a) **Strike remains collection, preservation and identification;**
 - b) **Wildlife strike risk assessment and risk management principles and how these programs relate to the airport's safety management system.**

Recommendation 5

- **Regarding wildlife hazard mitigation the personnel involved in airport wildlife management should be instructed on the following fields:**
 - a) **Long-term (passive) measures, including on and off airport habitat management, identification of attractions, vegetation policies, NAVAID protection, drainage system management, etc;**
 - b) **Short-term (active) measures, including acoustic measures, visual measures and wildlife removal techniques;**
 - c) **Firearm and field safety, including the use of personal protective equipment.**

Recommendation 5 (cont'd)

- **Personnel with no aviation experience or training should receive instruction on the following:**
 - a) **Airport driver training;**
 - b) **Air traffic control communication – radiotelephony;**
 - c) **Roles & responsibilities of airport operations;**
 - d) **Aircraft operations and movements**

Training on wildlife hazard prevention should include both theory and practice.

Recommendation 6

- **Personnel engaged in airport wildlife management should be instructed on:**
 - a) **the principles and details of the respective documentation and record keeping regarding wildlife activities, control measures and strikes;**
 - b) **the statistical analysis of the various data sets;**
 - c) **Proper reporting (wildlife strike reports, annual reviews, etc.).**

Recommendation 7

- Airport wildlife control personnel should receive refresher training at periodic intervals.
- This training can be used to demonstrate skill levels or situational awareness; review firearms safety, changes in the local environment or in equipment use, risk management policy, recent wildlife events at the airport, or discuss improvements in active and passive measures and such other matters as airport management deems appropriate.
- An annual review is recommended while recurrent advanced training in longer intervals should be considered.

Recommendation 8

- Training of airport wildlife control personnel must be conducted by qualified airport wildlife control personnel or specialists with proven experience in this field.
- The minimum qualifications for personnel appointed to provide training in wildlife management at the airport are to have previously completed a formal course of instruction in airport wildlife control and be qualified to work on an airport. Trainers should also have received instruction in presentation skills and adult education.
- Formal courses may be available from national wildlife control committees, universities and other education institutions, military establishments, government entities or similar private agencies.

Recommendation 9

- **Successful completion of an airport wildlife training course must be demonstrated by completion of a written and/or practical test. A written certification must be provided to those who successfully pass the test(s). If a published training procedure is not provided by the trainer the certificate should attest to the fields the trainee has successfully completed.**
- **Recurring training should be connected to requalification and recertification procedures.**

Recommendation 10

Training administered to any person for the purpose of conducting airport wildlife control must be documented and records retained for a sufficient period, as directed by the airport's wildlife control program, or as necessary to satisfy periodic reviews or audits required under ICAO guidelines.

Recommendation 11

Basic training on wildlife management aspects may vary between 3 to 5 days according to the complexity of the ecosystems and their components (mainly wildlife species) at the airport and the vicinity.

Recommendation 12

Training on airport operation aspects (for those without aviation experience) should follow the airport, regional or national standards issued for this field in terms of duration.

Recommendation 13

Prior to releasing any staff member to provide wildlife management actions at the field the airport's manager should ensure that the proper level of assimilation of ALL the required information has been reached.

Recommendation 14

- The duration of the recurrent training may vary according to the frequency, the contents and the recertification/requalification requirements.
- For annual refresher training at least half a day is advised, while for less frequent recurrent training the minimum should not be less than a full day.