



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Qualifications for Wildlife
Biologist Conducting Wildlife Hazard
Assessments and Training Curricula for
Airport Personnel Involved in Controlling
Wildlife Hazards on Airports

Date: June 28, 2006

AC No: 150/5200-36

Initiated by: AAS-300

1. Purpose.

This Advisory Circular (AC) describes the qualifications for wildlife biologists who conduct Wildlife Hazard Assessments for airports certificated under Title 14, Code of Federal Regulations, Part 139 (14 CFR, Part 139). In addition, it addresses the minimum wildlife hazard management curriculum for the initial and recurrent training of airport personnel involved in implementing a Federal Aviation Administration (FAA) approved Wildlife Hazard Management Plan.

2. Background.

Wildlife biologists conducting Wildlife Hazard Assessments or presenting training for airport personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans at certificated airports must have professional training and/or experience in wildlife hazard management at airports [§139.337(c) and (f)(7)]. Airport personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans must receive initial training and, every 12 consecutive months after that, recurrent training [§139.303(c) and (e) (Personnel)].

3. Applicability.

The Federal Aviation Administration (FAA) recommends that public-use airport operators fulfill the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Part 139, Subpart D, may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. The FAA also recommends the guidance in this AC for persons wishing to conduct Wildlife Hazard Assessments and for those who help prepare Wildlife Hazard Management Plans or conduct the requisite training.

4. Related Reading Material.

Please review the most recent versions of the following documents:

- a. FAA AC 150/5200-18C, *Airport Safety Self-Inspection*.
- b. FAA AC 150/5200-32A, *Reporting Wildlife Aircraft Strikes*.
- c. FAA AC 150/5200-33A, *Hazardous Wildlife Attractions on or Near Airports*.
- d. FAA AC 150/5200-34A, *Construction or Establishment of Landfills Near Public Airports*.
- e. FAA Office of Safety and Standards, Certalert no. 98-05. *Grasses Attractive to Hazardous Wildlife*.
- f. FAA Office of Safety and Standards, Certalert no. 04-09, *Relationship Between FAA and WS*.
- g. FAA Office of Safety and Standards, Certalert no. 04-16, *Deer Hazard to Aircraft and Deer Fencing*.
- h. Cleary, E. C., R. A. Dolbeer, and S. E. Wright. *Wildlife Strikes to Civil Aircraft in the United States*. FAA National Wildlife Aircraft Strike Database Serial Reports.
- i. Cleary, E. C. and R. A. Dolbeer. 2005. *Wildlife Hazard Management at Airports: A Manual for Airport Operators*. 2nd Ed. FAA, Office of Airport Safety and Standards, Washington, DC. 347 pages.
- j. Report to Congress: *Potential Hazards to Aircraft by Locating Waste Disposal Sites in the Vicinity of Airports*, April 1996, DOT/FAA/AS/96-1.
- k. Title 14, Code of Federal Regulation, Part 139, Certification of Airports.
- l. Title 40, Code of Federal Regulation, Part 258, Criteria for Municipal Solid Waste Landfills.

Some of these documents and other information on wildlife management, including FAA Certalerts and guidance on siting hazardous wildlife attractants such as landfills, are available on the FAA website at http://www.faa.gov/airports_airtraffic/airports/ or <http://wildlife-mitigation.tc.faa.gov/>.

5. Professional Qualifications of Wildlife Biologists Conducting Wildlife Hazard Assessments and Wildlife Hazard Management Training at FAA Certificated Airports.

Wildlife biologists conducting airport Wildlife Hazard Assessments must meet certain education, training, and experience standards.

§139.337(c) reads: Wildlife Hazard Assessment required in paragraph (b) of this section shall be conducted by a wildlife damage management biologist who has professional training and/or experience in wildlife hazard management at airports or an individual working under direct supervision of such an individual.

Airports with an FAA approved Wildlife Hazard Management Plan must provide employees the training needed to carryout the Plan.

§139.337(f)(7) reads: A training program conducted by a qualified wildlife damage management biologist to provide airport personnel with the knowledge and skills needed to successfully carry out the Wildlife Hazard Management Plan required by paragraph (d) of this section.

To meet the requirements of §139.337(c) and (f)(7), wildlife management biologist (from now on referred to as a “qualified airport wildlife biologist”) must:

- a. Have the necessary academic coursework from accredited institutions and work experience to meet the qualifications of a GS-0486 series wildlife biologist as defined by the U.S. Office of Personnel Management classification standards (Appendix A); **or** be designated as a Certified Wildlife Biologist by The Wildlife Society (<http://www.wildlife.org>) **and**,
- b. Have taken and passed an airport wildlife hazard management training course acceptable to the FAA Administrator (Appendix B¹) **and**,
- c. While working under the direct supervision of a qualified airport wildlife biologist, have conducted at least one Wildlife Hazard Assessment acceptable to the FAA Administrator (as described in §139.337(c)). **and**,
- d. Have successfully complete at least one of the following within the past 3 years:
 - (1) An airport wildlife hazard management training course that is acceptable to the FAA Administrator (Appendix B) **or**,
 - (2) Attendance, as a registered participant, at a joint Bird Strike Committee–USA/Bird Strike Committee–Canada annual meeting, **or**,
 - (3) Other training acceptable to the FAA Administrator.

Persons wishing to conduct Wildlife Hazard Assessments or provide the requisite training should provide the Certificate Holder documentation verifying they meet the requirements outlined in 5 a – d above.

6. Initial and Recurrent Training for Airport Personnel Actively Involved in Managing Hazardous Wildlife On or Near Airports.

Personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans are subject to the requirements of 14 CFR Part 139.303. §139.303 requires a specific training regimen for all airport personnel. §139.303(c) and (e) requires the holder of an Airport Operating Certificate issued under Part 139 to provide initial training and, every 12 months thereafter, recurrent training in wildlife hazard management to airport personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans. The required training must include, “Any additional subject areas required under ... §139.337 ... ” [§139.303(c)(5)]. And, “As appropriate, comply with the following training requirements of this part. ... §139.337, Wildlife Hazard Management.” [§139.303(e)(5)]

¹ Appendix B also contains instruction for those wishing to establish a training program to train wildlife biologist for designation as “qualified airport wildlife biologist” by the FAA Administrator.

§139.303(c) and (e) describe the minimum areas covered during initial and recurrent airport wildlife hazard management training. Depending on local wildlife and environmental issues, additional topics or more in-depth coverage of listed topics, might be needed. Appendix C outlines the training requirements for airport personnel who carry out an airport's Wildlife Hazard Management Plan. Initial and recurrent training must be at least 8 hours in length.

§139.337(f) does not prohibit holders of Airport Operating Certificates from using a "train-the-trainer" approach when providing the requisite training, provided the trainers receive and successfully complete their initial and recurrent training from a qualified airport wildlife biologist.

Remember, holders of Airport Operating Certificates issued under Part 139 are required to make and keep records of all training for airport personnel involved in controlling wildlife hazards [§139.303(d)].

A handwritten signature in black ink, appearing to read 'DLB', is positioned above the typed name and title.

David L. Bennett
Director, Office of Airport Safety and Standards

Appendix A.

U.S. Office of Personnel Management Qualification Standards for GS-0486 Series Wildlife Biologists.

To be qualified as a GS-0486 series wildlife biologist, a candidate must have the following:

1. A degree in biological science that includes—
 - a. At least 9 semester hours in such wildlife subjects as mammalogy, ornithology, animal ecology, and wildlife management or research courses in the field of wildlife biology; **and**
 - b. At least 12 semester hours in zoology in such subjects as general zoology, invertebrate zoology, vertebrate zoology, comparative anatomy, physiology, genetics, ecology, cellular biology, parasitology, and entomology or research courses in these subjects (excess courses in wildlife biology may be used to meet the zoology requirements where appropriate); **and**
 - c. At least 9 semester hours in botany or the related plant sciences; **or**
2. A combination of education and experience equivalent to a major in biological science (i.e., at least 30 semester hours), with at least 9 semester hours in wildlife subjects, 12 semester hours in zoology, and 9 semester hours in botany or related plant science, as shown in “a” above, plus appropriate experience or additional education.

Appendix B.

1. Curriculum Outline for an Airport Wildlife Hazard Management Course, Acceptable to the FAA Administrator, for Personnel Conducting Wildlife Hazard Assessments, or Providing Training to Personnel Actively Involved in Implementing FAA Approved Wildlife Hazard Management Plans.

A list of training program providers acceptable to the FAA Administrator can be found at the FAA's wildlife strike web page: <http://wildlife-mitigation.tc.faa.gov>.

Links to the most recent versions of FAA regulations, FAA Advisory Circulars, Certalerts, and other documents relevant to wildlife hazard management issues can be found at http://www.faa.gov/airports_airtraffic/airports/ and <http://wildlife-mitigation.tc.faa.gov/>.

Those proposing to establish a program to train qualified airport wildlife biologist to meet the requirements of Title 14, Code of Federal Regulations, §139.337 must submit a complete training syllabus and instructor vita to the FAA. The syllabus must include all lesson plans, student handouts, and graphic presentations. Submit the material to:

FAA Staff Wildlife Biologist, AAS-300
Office of Airport Safety and Standards
Federal Aviation Administration,
800 Independence Ave. SW.
Washington, DC 20591

The goal of the training must be to provide the knowledge, skills, and abilities needed by a GS-0486 wildlife biologist to conduct Wildlife Hazard Assessments [§139.337(c)], and to conduct wildlife hazard training [§139.337(f)(7)]. To be acceptable to the FAA, the course must be at least 24 hours in length and include the agenda items below.

2. Instructor Qualifications.

The lead instructor for the training should have the following qualifications:

- a. Be a qualified airport wildlife biologist
- b. Academic credits in education or instructor/teaching experience
- c. A minimum of 2 years experience in all aspects of managing hazardous wildlife on or near airports

3. Training Curriculum Outline.

- a. Training goals and process
- b. Airport familiarization
 - (1) Introduction to the National Plan of Integrated Airport Systems
 - (2) Airport design and layout
 - (3) Navigation aids and Air Traffic Control
 - (4) Airport operations and safety
 - (5) Signs, marking, and lighting

- (6) Ground vehicle operator communication
- c. Aircraft familiarization
 - (1) Physics of a strike
 - (2) Aircraft nomenclature
 - (3) Civil aviation aircraft categories
 - (4) Aircraft engines
 - (a) Reciprocating
 - (b) Turbo
 - (5) Aircraft certification standards
- d. Preview of wildlife hazards to aviation
 - (1) History of major strikes
 - (2) Aviation losses
 - (a) Worldwide
 - (b) United States
- e. Controlling laws, regulations and policies
 - (1) Migratory Bird Treaty Act of 1918, as amended
 - (2) Animal Damage Control Act of 1931, as amended
 - (3) Bald Eagle Protection Act of 1940, as amended
 - (4) Federal Insecticide, Fungicide, and Rodenticide Act of 1948, as amended
 - (5) National Environmental Policy Act of 1969, as amended
 - (6) Endangered Species Act of 1973, as amended
 - (7) Title 14, Code of Federal Regulation, Part 139, Certification of Airports
 - (8) Title 40, Code of Federal Regulations, Part 258, Criteria for Municipal Solid Waste Landfills
 - (9) Title 50, Code of Federal Regulations, Parts 1–199, Wildlife Management
 - (10) Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L. No. 106–181 (April 5, 2000), "Structures Interfering with Air Commerce," section 503
 - (11) Applicable FAA ACs in the 150/5200 series about Airport Wildlife Hazard Management
 - (12) Applicable FAA Office of Airports Certalerts
 - (13) Applicable state and local laws, regulations, and ordinances
- f. Department of Defense requirements and perspective on military/civilian joint-use airports

- g. Other Federal and State agency roles and responsibilities
 - (1) U.S. Department of Interior, Fish and Wildlife Service
 - (a) Role and responsibilities related to managing problem wildlife
 - (b) Migratory Bird Depredation Permits
 - (c) Salvage Permits
 - (2) U.S. Department of Agriculture, Wildlife Services
 - (a) Role and responsibilities related to managing problem wildlife
 - (3) Other agencies
 - (a) U.S. Environmental Protection Agency
 - i. Siting landfills
 - ii. Pesticide registration and use
 - (b) U.S. Army Corps of Engineers
 - i. Wetlands mitigation
 - (4) Multi-Federal Agency Memorandum of Agreement
 - (5) Applicable state wildlife regulations
- h. FAA National Wildlife Aircraft Strike Database
 - (1) Strike reporting
 - (2) Species identification and feather identification
 - (3) Database access
- i. Environmental issues—working with Federal and State agencies
 - (1) National Environmental Policy Act
 - (2) U.S. Army Corps of Engineers (wetland loss and mitigation issues)
- j. Initial consultations and Wildlife Hazard Assessments (WHA)
 - (1) Triggering events for WHA
 - (2) Duration and contents of WHA
 - (3) Wildlife surveys at airports to assess wildlife hazards
 - (4) Data analysis and presentation of results
 - (5) Writing a WHA
- k. FAA review of WHA and determination of need for Wildlife Hazard Management Plan (WHMP)
- l. Drafting and carrying out integrated WHMP
 - (1) Contents of WHMP
 - (2) FAA review of WHMP

- (3) Endangered Species Act compliance
- (4) National Environmental Policy Act review
- m. Integrated wildlife hazard management for airports; survey of basic control strategies and tactics
 - (1) Flight schedule modification
 - (2) Habitat modification and exclusion
 - (3) Wildlife dispersal techniques
 - (4) Wildlife population management
- n. Addressing off-airport attractants and community planning and involvement
- o. Outline of field trip (to conduct a “mini” WHA)
- p. Field trip/site visit
- q. Final exam
- r. Post exam review
- s. Course evaluation
- t. Presentation of certificates

4. Recommendations.

- a. Exams or tests may be oral, written, practical demonstrations, or a combination of all three.
- b. Passing grade/evaluation should be recorded and retained as instructor’s records.
- c. Instructors should retain course attendance records for a period of three years.

Appendix C.

1. Training curriculum outline for airport personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans.

The goal of the training course must be to provide the knowledge, skills, and abilities needed by airport personnel to safely and accurately implement relevant portions of an FAA approved Wildlife Hazard Management Plan. To be acceptable to the FAA, initial and recurrent training must be at least 8 hours in length and include the agenda items:

- a. General survey of wildlife hazards to aviation based on the most recent annual FAA National Wildlife Strike Database Serial Report.
- b. Review of wildlife strikes, control actions, and observations at the airport over at least the past 12 months.
- c. Review of the airport's Wildlife Hazard Assessment, (conducted by a qualified airport wildlife biologist), to include—
 - (1) Existing wildlife hazards and trends in wildlife abundance.
 - (2) Status of any open or unresolved recommended action items for reducing identified wildlife hazards to air carrier operations within the past 12 months.
- d. Review of the airport's Wildlife Hazard Management Plan, to include —
 - (1) Airport-specific wildlife attractants, including man-made and natural features, and habitat management practices of the last 12 months.
 - (2) Review of the airport's wildlife permits (local, State, and Federal).
 - (3) Review of other airport-specific items:
 - (a) Wildlife hazard management strategies, techniques, and tools —
 - (i) Flight schedule modification.
 - (ii) Habitat modification, exclusion.
 - (iii) Repelling methods.
 - (iv) Wildlife population management.
 - (b) Responsibilities of airport personnel for —
 - (i) Reporting wildlife strikes, control actions, and wildlife observations.
 - (ii) Communicating with personnel who conduct wildlife control actions or who see wildlife hazards and air traffic control tower personnel and others who may require notification, such as airport operations or maintenance departments.
 - (iii) Documenting and reporting wildlife hazards seen during patrols and inspections, and follow-up control efforts.
 - (iv) Documenting and reporting when no hazards are seen during patrols and inspections.

- e. Basic bird and mammal identification, stressing local hazardous and rare or endangered species of concern.
- f. For any airport personnel using pyrotechnic launchers or firearms, training on the following topics from a qualified individual²:
 - (1) Safety, parts, and operation of firearms and pyrotechnic launchers.
 - (2) Fundamentals of using ammunition and pyrotechnics.
 - (3) Personnel protective equipment.
 - (4) Cleaning, storage, and transport of firearms and pyrotechnic launchers.
 - (5) Applicable local, State, and Federal regulations on firearms, pyrotechnic launchers, and pyrotechnics.
 - (6) Live fire training with firearms and pyrotechnic launchers.
- g. Any other training required by local, State, or Federal regulations.

2. Recommendations.

- a. Exams or tests may be oral, written, practical demonstrations, or a combination of all three.
- b. The Trainer should retain passing grades/evaluations records.
- c. The Trainer should retain course attendance records for a period of three years.
- d. Airport personnel charged with responsibility for the airport's wildlife hazard management program should retain records of those to whom instruction in airport wildlife hazard management has been given for the period of time during which the employee conduct hazardous wildlife management activity on the airport and for six months after termination of employment.

² State Certificated Hunter Safety Instructors, police officers, and firearms instructors should be qualified to teach firearms safety and possibly the safe use of pyrotechnic launchers. Pyrotechnics are classified as high explosives by the Bureau of Alcohol Tobacco and Firearms (ATF) and as Division 1.4 explosives by the U.S. Department of Transportation. There are numerous regulations, security considerations, and ATF licensing requirements that apply to pyrotechnics.