



Federal Aviation Administration

National Part 139 CertAlert

AdvisoryCautionary**Non-Directive**Advisory**Cautionary**Non-Directive**Advisory**Cautionary**Non-Directive**

Date: 08/03/2016 **No. 16-03**
To: Airport Operators and FAA Airport Certification Safety Inspectors (ACSI)
Subject: Recommended Wildlife Exclusion Fencing
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1. Purpose.

This CertAlert contains airfield exclusion methods for deer and other large mammals.

2. Cancellation.

This CertAlert cancels CertAlert 01-01, Deer Aircraft Hazard, dated February 1, 2001; CertAlert 02-09, Alternative Deer Fencing, dated December 12, 2002; and CertAlert 04-16, Deer Hazard to Aircraft and Deer Fencing, dated December 13, 2004.

3. Background.

Elevated deer and coyote populations in the United States represent an increasingly serious threat to both Commercial and General Aviation Aircraft. According to the National Wildlife Strike Database, deer and coyote are the most frequently struck terrestrial mammals (37 and 34 percent, respectively). Deer are responsible for 92 percent of the mammal strikes that resulted in damage. From 1990 to 2015, over 1,107 deer-aircraft collisions and 487 coyote-aircraft collisions were reported to the Federal Aviation Administration (FAA). Of these reports, 932 of the deer strikes (84%) and 43 of the coyote strikes (9%) indicated the aircraft was damaged as a result of the collision.

The FAA reminds airport operators that controlling deer and other medium to large terrestrial mammals on and around airfields is very important. Two recent incidents include a Cessna 195B sustaining significant damage on landing as a result of veering off the runway to avoid striking white-tailed deer in Virginia and a Cessna 310 that was destroyed on approach to an airport in Michigan when it collided with a white-tailed deer.

4. Recommendations.

Proper fencing is the best way of keeping deer and coyotes off aircraft movement areas. In some cases, deer have been observed jumping over 8-foot fencing and coyotes have been observed scaling 6-foot fencing. Deer and coyotes can fit through very small gaps between

gates and under fencing. Deer have been observed squeezing through a 7.5-inch gap at the bottom of a fence. Coyotes can fit through 6 inch x 4 inch gaps under a fence and they will also dig under the fence to access the airfield.

The FAA recommends a 10-foot fence¹ with 3-strand barbed wire outriggers. In some cases, an airport may be able to use an 8-foot fence with 3-strand barbed-wire outriggers, depending on the amount of deer activity in a local area.

A 4- to 5-foot skirt of fencing material, attached to the bottom of the fence and buried at a 45-degree angle on the outside of the fence, is ideal to prevent animals from digging under the fence and reduce the chance of washouts. If the fence skirting cannot be installed at a 45-degree angle, then it is acceptable to install it horizontally underground several inches beneath the surface. This type of fencing also greatly increases airport security and safety. A concrete base² along the bottom of the fence is also an option to prevent burrowing or digging under the fence. Airport Operators should keep the fence line right-of-way free of excess vegetation. The fence line should be inspected daily, and a fence inspection schedule should be included in an airport's Wildlife Hazard Management Plan (WHMP). If the proposed inspection schedule is less than daily, it should be approved by an ACSI for Part 139 certificated airports. Washouts, breaks, or other holes in the fence need to be repaired as soon as they are discovered.

Gates should close with less than 6-inch gaps to prevent entry by deer or coyotes. If the gates have gaps along the bottom, installation of concrete "speed bumps" under the gate can be a solution. If the gaps are between the gates or the poles, a heavy brush material or interlocking metal bars can also be installed to preclude entry by deer or coyote. In some cases, a single strand of barbed wire strung between the bottom of the fence and the ground where there are gaps will minimize the potential for wildlife access.

Chain link fencing is a type of wire-mesh fencing. Other types of wire-mesh fencing that are suitable for exclusion of wildlife at airports include woven-wire and v-mesh fencing. Also, high tensile welded-wire fencing has been used successfully at different airports to exclude deer and coyotes. However, these types of fencing must be researched thoroughly when choosing an adequate fencing material for an airport due to the variability in durability, life span, and the spacing of mesh and welded wire.

In some cases, electric fencing or matting may offer a suitable alternative. Recent improvements in fencing components and design have greatly increased the effectiveness and ease of installation of electric fences. Tests by the U.S. Department of Agriculture (USDA), National Wildlife Research Center, have shown that some 4- to 6-foot, 5- to 9-strand electric fences designs can be 99% effective at stopping deer. Installation of some of the newer electric fences requires neither specialized equipment nor training; however, they may require more maintenance than other types of fence and must be consistently electrified. Airport sponsors must contact their local Airport District Office (ADO) to

¹ AC No: 150/5370-10G, *Standards for Specifying Construction of Airports* (Part 8 – Fencing), provides details on different fencing and post materials (e.g., chain link, welded and woven wire mesh, galvanized or pvc coating, etc.).

² Additional information regarding underground skirting, fence base materials, vegetation clearance recommendations, and installation procedures can be found in AC 150/5370-10G.

discuss eligibility for AIP funding or requirements for a Modification to Standards (MOS).

In limited situations, the use of non-conductive, composite, frangible electric fence posts and fence conductors may allow the installation of electric fence closer to the aircraft movement area than would normally be allowed with standard link fencing material. Please note that electric fencing may produce radio frequency interference that could be disruptive to NAVAIDS and airport communications and should be considered when determining types of fencing.

The key for excluding deer and coyotes is the proper installation and maintenance of a fence that is:

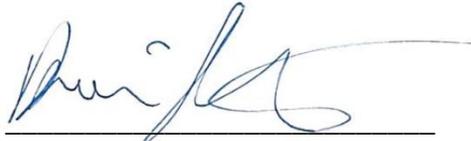
- Of sufficient height to deter jumping and scaling
- Constructed of a material that is difficult to penetrate
- Constructed fully around the airfield without gaps below the fence or at the gates or that mitigates the gaps with other exclusionary materials
- Constructed to deter digging or burrowing under the fence

The most suitable fence for an airport depends on many factors, including the observed wildlife hazards, the potential impacts of certain types of fencing, seasonality of hazards, costs (both for construction and maintenance), and adjacent habitat types. Airport sponsors must contact their local ADO to discuss what types of fencing are eligible for AIP funding.

For proposed fencing that will intersect wetlands or surface waters (streams, rivers, etc.), the airport sponsor should determine what state and federal permits will be required prior to installation. Fencing that is located in wetlands or over surface waters typically requires additional maintenance and/or cleaning due to debris getting caught and potentially damaging the fence. If a culvert is located along the perimeter fence, grates or some other barrier should be placed over the culvert to ensure wildlife cannot access the airfield through the culvert. The barrier should allow for water movement and should be inspected and cleared of debris regularly to ensure water is flowing efficiently.

Airport sponsors should include new and/or improved wildlife fencing in their WHMP as a prioritized action item. If deer are observed on or near the aircraft movement area, immediate action must be taken to remove them.

Airport operators can contact the State Wildlife Management Agency or the nearest USDA, Wildlife Services Office for assistance with deer problems.



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