U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: REPORTING WILDLIFE AIRCRAFT STRIKES	**Date:** DRAFT	**AC No:** 150/5200-32B
	Initiated by: AAS-300	**Change:**

1. Purpose:

This Advisory Circular (AC) explains the importance of reporting collisions between aircraft and wildlife, more commonly referred to as wildlife strikes. It also examines recent improvements in the Federal Aviation Administration's (FAA) Bird/Other Wildlife Strike Reporting system; how to report a wildlife strike; what happens to the wildlife strike report data; how to access the FAA National Wildlife Strike Database (NWSD); and the FAA's Feather Identification program.

2. Applicability:

The standards and practices in this AC are provided as guidance for public-use National Plan of Integrated Airport System (NPIAS) airports, aviation industry personnel (e.g., Air Traffic Control, pilots and airline personnel, engine manufacturers) and, others who possess strike information. The FAA strongly recommends that the above aviation representatives and others possessing strike information participate in reporting.

3. Cancellation:

This AC cancels AC 150/5200-32A, Reporting Wildlife Aircraft Strikes, dated December 22, 2004.

4. Background:

The FAA has long recognized the threat to aviation safety posed by wildlife strikes. Worldwide, wildlife strikes cost civil aviation an estimated $1.2 billion annually. Each year in the U.S., wildlife strikes to U.S. civil aircraft cause about $677 million in damage to aircraft and about 567,000 hours of civil aircraft down time. For the period 1990—2011, over 115,000 wildlife strikes were reported to the FAA. About 97 percent of all wildlife strikes reported to the FAA involve birds, about two percent involve terrestrial mammals and less than one percent involve flying mammals (bats) and reptiles. Waterfowl (ducks and geese), gulls, and raptors (mainly hawks and vultures) are the bird species that cause the most damage to civil aircraft in the United States. Vultures and waterfowl cause the most losses to U.S. military aircraft.

Studies have shown that strike reporting has steadily increased over the past two decades. Although larger Part 139 airports and those with well established wildlife programs have improved strike reporting there is a wide disparity in overall reporting rates between Part 139 airports and NPIAS GA airports. Less than 6 percent of total strike reports come from NPIAS GA airports, whose reporting rates average less than 1/20th the rates at Part 139 airports. Most Part 139 airports (97 percent) have reported at least one strike into the database through 2011, whereas only 43 percent of NPIAS GA airports have documented a strike into the database.

While overall reporting rates are much higher for strikes at Part 139 airports than at NPIAS GA airports, there is also a major disparity in reporting rates among Part 139 airports. Larger Part

139 airports, and especially those that have well established wildlife hazard management programs, have reporting rates about four times higher on average compared to other Part 139 airports. The pattern of disparity in strike reporting among Part 139 airports is also found in reporting rates for commercial air carriers.

Ultimately, improvements can be made in the quantity and quality of strike reporting. In addition to the above-mentioned gaps in the National Wildlife Strike Database there is an overall bias toward the reporting of damaging strikes compared to non-damaging strikes, especially for NPIAS GA airports and certain Part 139 airports. The quality of data within a strike report can also be improved by providing as much information as possible including data fields such as species struck and cost of strike.

The FAA has initiated several programs to address this important safety issue, including the collection, analysis, and dissemination of wildlife strike data. The FAA actively encourages the voluntary reporting of wildlife strikes.

5. What Types of Animals Should be Reported if Involved in a Strike with Aircraft:

- **a.** All birds
- **b.** All bats
- **c.** All terrestrial mammals larger than 1 kg (2.2 lbs). (e.g., report rabbits, muskrats, armadillos, foxes, coyotes, deer, feral livestock etc., but not Norway rats, mice, voles, chipmunks, shrews etc.). If in doubt, report the incident with a note in comment section and Database Manager will determine inclusion into NWSD based on body mass.
- **d.** Reptiles other than snakes

6. How to Report a Wildlife Aircraft strike:

A wildlife strike has occurred when:

- **a.** A strike between wildlife and aircraft has been witnessed;
- **b.** Evidence or damage from a strike has been identified on an aircraft;
- **c.** Bird or other wildlife remains, whether in whole or in part, are found:
  - i. Within 250 feet of a runway centerline or within 1,000 feet of a runway end unless another reason for the animal's death is identified or suspected,, unless another reason for the animal's death is identified or;
  - ii. On a taxiway or anywhere else on or off airport that you have reason to believe was the result of a strike with an aircraft. Examples might be:
    1. Bird was found in pieces from a prop strike on a taxiway
    2. Carcass was retrieved within 1 mile from airport on final approach path after someone reported the bird falling out of the sky.
- **d**. The presence of birds or other wildlife on or off the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal).

Pilots, airport operations, aircraft maintenance personnel, Air Traffic Control personnel, engine manufacturers or anyone else who has knowledge of a strike is encouraged to report it to the FAA. Wildlife strikes may be reported to the FAA using the paper FAA Form 5200-7 Bird/Other Wildlife Strike Report (see attachment), or electronically at either the *Airport Wildlife Hazard Mitigation* web site: http://www.faa.gov/go/wildlife or through a personal data assistant like the

Blackberry and iPhone at http://www.faa.gov/mobile. The FAA's Bird/Other Wildlife Strike Report Form can be downloaded or printed from the web site. Paper copies of Form 5200-7 may also be obtained from the appropriate Airports District Offices (ADO), Flight Standards District Offices (FSDO), and Flight Service Stations (FSS). Copies of the Bird/ Other Wildlife Strike Report form are also found in the Airman's Information Manual (AIM). Paper forms are pre-addressed to the FAA. No postage is needed if the form is mailed in the United States. It is important to include as much information as possible on the strike report.

The FAA National Wildlife Strike Database Manager edits all strike reports to insure consistent, error-free data before entering the report into the database. This information is supplemented with non-duplicated strike reports from other sources. About every six weeks, an updated version of the database is posted on the web site. Annually, a current version of the database is forwarded to the International Civil Aviation Organization (ICAO) for incorporation into ICAO's Bird Strike Information System Database. Also, a report summarizing wildlife strike results from 1990 through the most current year is prepared and made available online at http://www.faa.gov/airports/airport_safety/wildlife/.

Analyses of data from the FAA NWSD have proved invaluable in determining the nature and severity of the wildlife strike problem. The database provides a scientific basis for identifying risk factors; justifying, implementing and defending corrective actions at airports; and for judging the effectiveness of those corrective actions. The database is invaluable to engine manufacturers and aeronautical engineers as they develop new technologies for the aviation industry. Each wildlife strike report contributes to the accuracy of and effectiveness of the database. Moreover, each report contributes to the common goal of increasing aviation safety.

7. Access to the FAA National Wildlife Strike Database:

On April 24, 2009, the FAA made its entire wildlife strike database available to the public. The FAA began systematically analyzing wildlife strike data in the 1990s for use by the FAA's Office of Airports, academia, and researchers as a means to improve airport safety and reduce wildlife hazards. The wildlife strike database web site (http://wildlife-mitigation.tc.faa.gov/wildlife/) was retooled to make it more user-friendly and to allow more advanced data mining. The new site, (http://www.faa.gov/go/wildlife) has search fields that enable users to find data on specific airports, airlines, aircraft and engine types, as well as damage incurred, date of strike, species struck and state without having to download the entire database.

8. Bird Identification:

Accurate species identification is critical for bird-aircraft strike reduction programs. The identification of the exact species of wildlife struck (e.g., ring-billed gull, Canada goose, mallard, mourning dove, or red-tailed hawk as opposed to gull, goose, duck, dove, or hawk) is particularly important. This species information is critical for airports and biologists developing and implementing wildlife risk management programs at airports because a problem that cannot be measured or defined cannot be solved. Wildlife biologists must know what species of wildlife they are dealing with in order to identify local attractants and to make proper management decisions within the framework of the Migratory Bird Treaty Act and state and local regulations. The FAA, the U.S. Air Force, U.S. Navy and the U.S. Department of Agriculture – Wildlife Services work closely with the Feather Identification Lab at the Smithsonian Institution, Museum of Natural History, to improve the understanding and prevention of bird-aircraft strike hazards. Bird strike remains that cannot be identified by airport personnel or by a local biologist can be sent (with FAA Form 5200-7) to the Smithsonian Museum for identification. Remains may also be submitted to the Smithsonian for verification of the field identification and for long-term storage of the evidence.

Feather identification of birds involved in bird-aircraft strikes will be provided free of charge to all U.S. airport operators, all U.S. aircraft owners/operators (regardless of where the strike happened), or to any foreign air carrier if the strike occurred at a U.S. airport.

Please observe the following guidelines for collecting and submitting feathers or other bird/wildlife remains for species identification. These guidelines help maintain species identification accuracy, reduce turn-around time, and maintain a comprehensive FAA National Wildlife Aircraft Strike Database.

a. Collect and submit remains as soon as possible

b. Provide complete information regarding the incident

i. Fill out FAA Form 5200-7 – Bird/Other Wildlife Strike Report

1. A copy of Form 5200-7 can be downloaded and or printed from: http://www.faa.gov/go/wildlife

2. File a report on-line and print a copy to send with the remains

ii. Mail report with feather material (see address below).

iii. Provide your contact information if you wish to be informed of the species identification.

c. Collect as much material as possible in a clean plastic/ ziplock bag. (Please, do not send whole birds).

i. Pluck/pick a variety of many feathers representing color or patterns from the wings, tail and body

ii. **Do not** cut off feathers. This removes the downy region needed to aid in identification

iii. Include any feathers with distinct colors or patterns

iv. Include any downy “fluff”

v. Include beaks, feet, and talons if possible

vi. Where only a small amount of tissue/ blood (“snarge”) material is available, such as scrapings from an engine or smears on wings or windshields, send all of it.

1. Dry material - Scrape or wipe off into a clean re-closeable bag **or** wipe area with pre-packaged alcohol wipe **or** spray with alcohol to loosen material then wipe with clean cloth/gauze. (do not use water, bleach, or other cleansers – they destroy or degrade DNA).

2. Fresh material - Wipe area with alcohol wipe and/or clean cloth/gauze **or** apply fresh tissue/blood to an optional FTA® DNA collecting card.

vii. **Do not** use any sticky substance such as tape or post-it notes to attach feathers.

viii. Indicate location on aircraft where each sample came (i.e. windshield, radome, etc).

Please send whole feathers (tip and base) whenever possible as diagnostic characteristics are often found in the downy barbules at the feather base. Wings, as well

as breast and tail feathers should be sent whenever possible. Beaks, feet, bones, and talons are also useful diagnostic materials. Even blood smears can provide material for DNA analysis (Dove et al. 2008). Do not send entire bird carcasses through the mail. However, photographs of the carcasses can be very useful supplemental documentation.

If you send fresh blood/ tissue samples frequently for DNA identification, you may want to consider getting Whatman FTA® DNA cards. The material is sampled with a sterile applicator and placed onto the surface of the card that "fixes" the DNA in the sample. For more information on ordering these items contact the Feather Lab. Otherwise, if you only occasionally send blood/ tissue samples, a paper towel with alcohol, or alcohol wipe is still a good option for this type of material. Ethanol is the preferred type of alcohol.

Additional information on sending bird remains to the Smithsonian is available at: http://www.faa.gov/go/wildlife.

d. Mail the Bird/Other Wildlife Strike Report and collected material to the Smithsonian's Feather Identification Lab. They will forward the report to the National Wildlife Strike Database Manager.

For Material Sent via Express Mail Service:	**For Material Sent via US Postal Service:**
Feather Identification Lab	Feather Identification Lab
Smithsonian Institution	Smithsonian Institution
NHB, E600, MRC 116	PO Box 37012
10th & Constitution Ave. NW	NHB, E600, MRC 116
Washington, D.C. 20560-0116	Washington, D.C. 20013-7012
(This can be identified as "safety investigation material")	(Not recommended for priority cases.)

The species identification turn around time is usually 24 hours from receipt if sufficient material is submitted. Once processed, the reports and species identification information are sent to the database Manager for entry into the FAA National Wildlife Strike Database. Persons wishing to be notified of the species identification must include contact information (e-mail, phone, etc.) on the report.

For more information contact The FAA National Wildlife Biologist [(202) 267-3778], or the Smithsonian's Feather Identification Lab [(202) 633-0801].

Michael J. O'Donnell
Director of Airport Safety and Standards

BIRD / OTHER WILDLIFE STRIKE REPORT

U S. Department of Transportation
Federal Aviation Administration

1. Name of Operator	**2. Aircraft Make/Model**	**3. Engine Make/Model**
4. Aircraft Registration	**5. Date of Incident** / / (Month / Day / Year)	**6. Local Time of Incident** Dawn / Dusk / HR / MIN; Day / Night / AM / PM
7. Airport Name	**8. Runway Used**	**9. Location if En Route** (Nearest Town/Reference & State)
10. Height (AGL)	**11. Speed** (IAS)	

12. Phase of Flight

A. Parked
B. Taxi
C. Take-off Run
D. Climb
E. En Route
F. Descent
G. Approach
H. Landing Roll

13. Part(s) of Aircraft Struck or Damaged

	Struck	Damaged		Struck	Damaged
A. Radome			H. Propeller		
B. Windshield			I. Wing/Rotor		
C. Nose			J. Fuselage		
D. Engine No. 1			K. Landing Gear		
E. Engine No. 2			L. Tail		
F. Engine No. 3			M. Lights		
G. Engine No. 4			N. Other: (Specify)		

14. Effect on Flight

None
Aborted Take-Off
Precautionary Landing
Engines Shut Down
Other: (Specify)

15. Sky Condition

No Cloud
Some Cloud
Overcast

16. Precipitation

Fog
Rain
Snow
None

17. Bird/Other Wildlife Species

18. Number of birds seen and/or struck

Number of Birds	Seen	Struck
1		
2-10		
11-100		
more than 100		

19. Size of Bird(s)

Small
Medium
Large

20. Pilot Warned of Birds Yes No

21. **Remarks** *(Describe damage, injuries and other pertinent information)*

DAMAGE / COST INFORMATION

22. Aircraft time out of service: hours	**23. Estimated cost of repairs or replacement** (U.S. $): $	**24. Estimated other Cost** *(U.S. $) (e.g. loss of revenue, fuel, hotels):* $

Reported by *(Optional)*	**Title**	**Date**

Paperwork Reduction Act Statement: The information collected on this form is necessary to allow the Federal Aviation Administration to assess the magnitude and severity of the wildlife-aircraft strike problem in the U.S. The information is used in determining the best management practices for reducing the hazard to aviation safety caused by wildlife-aircraft strikes. We estimate that it will take approximately 6 minutes to complete the form. The information collected is voluntary. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number associated with this collection is 2120-0045. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, ABA-20

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 12438 WASHINGTON D.C.

POSTAGE WILL BE PAID BY FEDERAL AVIATION ADMINISTRATION

Federal Aviation Administration
Office of Airport Safety and Standards, AAS-300
Attn: Wildlife Strike Report
800 Independence Avenue, SW
WASHINGTON, DC 20591

U.S. Department
of Transportation

Federal Aviation Administration

800 Independence Ave. S.W.
Washington, D.C. 20591

Official Business
Penalty for Private Use, $300

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

FOLD AND TAPE HERE

Directions for FAA Form 5200-7
Bird/Other Wildlife Strike Report

1. Name of Operator - This can be an airline (abbreviations okay - UAL, AAL, etc.), business (Coca Cola), government agency (Police Dept., FAA) or if a private pilot, his/her name.
2. Aircraft Make/Model - Abbreviations are okay, but to include the model (e.g. B737-200).
3. Engine Make/Model - Abbreviations are allowed (e.g., PW 4060, GECT7, LYC 580).
4. Aircraft Registration - This means the N# (for USA registered aircraft).
5. Date of Incident - Give the local date, not the ZULU or GMT date.
6. Local Time of Incident - Check the appropriate light conditions and fill in the hour and minute local time and check AM or PM or use the 24 clock and skip AM/PM.
7. Airport Name - Use the airport name or 3 letter code if a US airport. If a foreign airport, use the full name or 3 letter code and location (city/country).
8. Runway used - Self-explanatory.
9. Location if En Route - Put the name of the nearest city and state.
10. Height AGL - Put the feet above ground level at the time of the strike (if you don't know, use MSL and indicate this). For take-off run and landing roll, it must be 0.
11. Speed (IAS) - Speed at which the aircraft was traveling when the strike occurred.
12. Phase of Flight - Phase of flight during which the strike occurred. Take-off run and landing roll should both be 0 AGL.
13. Part(s) of Aircraft Struck or Damaged - Check which parts were struck and damaged. If a part was damaged but not struck indicate this with a check on the damaged column only and indicate in comments (#21) why this happened (e.g., the landing gear might be damaged by deer strike, causing the aircraft to flip over and damage parts not struck by deer).
14. Effect on Flight - You can check more than one and if you check (Other", please explain in Comments (#21).
15. Sky condition - Check the one that applies.
16. Precipitation - You may check more than one.
17. Bird/Other Wildlife Species - Try to be accurate. If you don't know, put unknown and some description. Collect feathers or remains for identification for damaging strikes.
18. Number of birds seen and/or struck - check the box in the Seen column with the correct number if you saw the birds/other wildlife before the strike and check the box in the Struck column to show how many were hit. The exact number can be written next to the box.
19. Size of Bird(s) - Check what you think is the correct size (e.g. sparrow = small, gull = medium and geese = large).
20. Pilot Warned of Birds - Check the correct box (even if it was an ATIS warning or NOTAM).
21. Remarks - Be as specific as you can. Include information about the extent of the damage, injuries, anything you think would be helpful to know. (e.g., number of birds ingested).
22. Aircraft time out of service - Record how many hours the aircraft was out of service.
23. Estimated cost of repairs or replacement - This may not be known immediately, but the data can be sent at a later date or put down a contact name and number for this data.
24. Estimated other cost - Include loss of revenue, fuel, hotels, etc. (see directions for #23).
25. Reported by - Although this is optional, it is helpful if questions arise about the information on the form (a phone number could also be included).
26. Title - This can be Pilot, Tower, Airport Operations, Airline Operations, Flight Safety, etc.
27. Date - Date the form was filled out.