
Office of Inspector General
Audit Report

**FAA HAS NOT EFFECTIVELY IMPLEMENTED
ITS WILDLIFE HAZARD MITIGATION
PROGRAM**

Federal Aviation Administration

Report Number: AV-2012-170

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Memorandum

U.S. Department of
Transportation
Office of the Secretary
of Transportation
Office of Inspector General

Subject: ACTION: FAA Has Not Effectively Implemented Its Wildlife Hazard Mitigation Program
Federal Aviation Administration
Report No. AV-2012-170

Date: August 22, 2012

From: Jeffrey B. Guzzetti *Jeffrey B. Guzzetti*
Assistant Inspector General
for Aviation and Special Program Audits

Reply to
Attn. of: JA-10

To: Acting Federal Aviation Administrator

In January 2009, US Airways Flight 1549 struck a flock of Canada geese shortly after takeoff from LaGuardia Airport, forcing the flight crew to land the airplane in the Hudson River. More recently, on April 19, 2012, Air Force Two, with the Vice President on board, sustained a wildlife strike while approaching Santa Barbara Municipal Airport when birds hit the right side of the aircraft. The Vice President's aircraft touched down safely, and all passengers were unharmed. However, in the immediate aftermath of both incidents, the risk of wildlife hazards at or near airports received increased attention, as did the Federal Aviation Administration's (FAA) Wildlife Hazard Mitigation Program, which seeks to reduce the risk of wildlife hazards to aviation and serves an important role in FAA's overall safety mission.

Wildlife strikes are not new threats to aviation safety. In the past 2 decades, wildlife strikes have steadily and dramatically increased, from 1,770 reported in 1990 to 9,840 reported in 2011, a five-fold increase. The rise in strikes is due in part to increases in large bird populations. According to the U.S. Department of Agriculture (USDA), 13 of the 14 largest bird species have shown significant population increases. These include Canada geese, white and brown pelicans, sandhill cranes, wild turkeys, and bald eagles—all of which could cause catastrophic failure if ingested into an aircraft engine. Wildlife strikes have resulted in at least 24 deaths and 235 injuries in the United States, and since 1988, 229 deaths worldwide. They also have caused nearly 600,000 hours of aircraft downtime and \$625 million in damages annually.

Given the rise in reported wildlife strikes and their safety implications, we initiated this audit to assess the effectiveness of FAA's Wildlife Hazard Mitigation Program (Program). Specifically, we assessed FAA's (1) oversight and enforcement of airports' adherence to Program requirements; (2) policies and guidance for monitoring, reporting, and mitigating wildlife hazards; and (3) coordination with other Government agencies that have a role in mitigating wildlife hazards.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Exhibit A details our scope and methodology, and exhibit B lists organizations visited, contacted, and/or reviewed.

RESULTS IN BRIEF

FAA's oversight and enforcement activities are not sufficient to ensure airports fully adhere to Program requirements or effectively implement their wildlife hazard management plans. FAA has not developed robust inspection practices, and its inspectors do not have the technical expertise to effectively oversee the Program. Inspectors we spoke with mostly relied on interviews with airport personnel to determine compliance with regulatory requirements, rather than reviewing strike and airport records. Also, inspectors were not maintaining adequate records of their inspection activities. We randomly selected a sample of 40 out of 209 airports and found that inspectors at 21 of the 40 airports did not know whether the airports' assessments and plans had been FAA reviewed and approved or whether the airports were even required to conduct an assessment or develop a plan. FAA's oversight is limited by a lack of wildlife hazard expertise among its airport inspectors. In addition, FAA did not always initiate enforcement actions against noncompliant airports. We identified 25 instances of airports' noncompliance with Program requirements between fiscal years 2009 and 2011 at the 8 randomly selected airports we visited in which inspectors did not initiate enforcement actions.

FAA's policies and guidance for monitoring, reporting, and mitigating wildlife hazards are mostly voluntary, thereby limiting their effectiveness. While FAA recommends wildlife strike reporting, it does not require it. Consequently, not all airports choose to report all their wildlife strikes. For example, one airport we visited reported 90 percent of strikes recorded in 2010 to FAA, while another airport reported only 11 percent. Also, FAA does not have policies and guidance for monitoring its progress toward meeting the Program's goal of reducing wildlife hazards at or near airports. Industry and government experts have recommended using the rate of total strikes and/or damaging strikes as possible performance metrics; however, these metrics will not be useful until FAA improves the quantity and quality of the data reported to its strike database.

FAA has an effective process for coordinating with USDA Wildlife Services (WS), its main partner in wildlife hazard mitigation at or near airports. However, FAA's coordination with other Government agencies that help mitigate wildlife hazards is not sufficient to effectively manage off-airport¹ hazards and strikes. Despite a 2003 multi-agency Memorandum of Agreement (MOA) to coordinate with agencies such as U.S. Army Corps of Engineers (USACE), FAA did not establish notification procedures with all USACE district offices to learn of proposed or planned projects that could increase hazardous wildlife populations near airports.² For example, when USACE proposed a bird nesting island project within 5 miles of two airports near Savannah, GA, a wildlife hazard assessment was not considered. Only when the project was nearly completed did FAA and the agencies involved in the project agree to initiate a wildlife hazard assessment, 7 years after the project began.³ In addition, FAA does not have procedures in place to assist airports in securing the necessary permits. As a result, FAA cannot ensure airports are fully implementing the mitigation strategies in the plans.

We are making a series of recommendations intended to improve on the management and oversight of the Program.

BACKGROUND

FAA's Program provides Federal assistance to airports for wildlife mitigation. From 1997 to 2011, FAA provided an estimated \$458 million⁴ to airports for projects to help assess and mitigate wildlife hazards, and the Agency estimates it will spend an additional \$366 million over the next 20 years.

FAA manages the Program by requiring Class I through III Part 139 airports⁵ to conduct an assessment and, if required, develop and implement a plan. Specifically, Title 14 Code of Federal Regulations (CFR), Part 139.337, requires these airports to:

¹ FAA considers "off-airport" as an area up to 5 statute miles from an airport's aircraft movement areas, loading ramps, or aircraft parking areas.

² Signatory agencies agreed to encourage their regional and local offices to develop interagency procedures to implement the 2003 MOA, including procedures that address the management of habitats that could attract hazardous wildlife at or near airports. Signatories include FAA; USDA WS; U.S. Fish and Wildlife Service (FWS), USACE, and the Environmental Protection Agency (EPA).

³ FAA only took this action because the airport commission managing both airports expressed concerns to FAA regarding hazardous wildlife movement near both airports' runway approach.

⁴ Funds are administered through the Airport Improvement Program grant program.

⁵ There are a total of 549 Part 139 airports which comprise of Class I through IV airports. Federal regulations require 451 Class I through III airports to comply with Part 139.337 requirements, including wildlife mitigation requirements. Airports serving all types of scheduled operations of air carrier aircraft designed for at least 31 passenger seats (large air carrier aircraft) and any other type of air carrier operations are Class I airports. Class II airports are those airports that serve scheduled operations of small air carrier aircraft and unscheduled operations of large air carrier aircraft. Class III airports are those airports that serve only scheduled operations of small air carrier aircraft.

- Assess the risk and magnitude of wildlife hazards after experiencing a “triggering event,” such as multiple birds striking an aircraft, engine ingestion of birds, or substantial damage to aircraft from strikes. An assessment must be conducted by a qualified wildlife biologist or someone supervised by a qualified wildlife biologist.
- Create and implement a plan to mitigate wildlife hazards, if found necessary after an assessment, and to review those plans annually.

FAA is in the process of amending its regulation to require that all certificated airports conduct wildlife hazard assessments—rather than just those airports that experience a “triggering event”—and to periodically update them. This amendment would result in requiring more than 500 Part 139 airports to conduct assessments over the next 5 years. FAA estimates these initiatives will cost \$366 million in Airport Improvement Program (AIP) funds.

FAA is responsible for oversight and enforcement of airport compliance with wildlife hazard regulations, which it conducts through the Agency’s nine regional offices. The Agency employs a total of 35 airport certification safety inspectors, whose responsibilities include reviewing airports’ wildlife hazard assessments and plans as well as conducting many other non-wildlife related safety inspections.

FAA coordinates with other government agencies, such as USDA WS, U.S. Fish and Wildlife Service, USACE, and the Environmental Protection Agency to mitigate wildlife hazards. In 2003, FAA signed a MOA with these Federal agencies to coordinate their missions more effectively to address current and future environmental conditions contributing to aircraft-wildlife strikes throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety, while protecting the Nation’s environmental resources.

FAA’S OVERSIGHT AND ENFORCEMENT OF AIRPORT WILDLIFE MITIGATION EFFORTS ARE INSUFFICIENT

FAA’s oversight and enforcement activities are not sufficient to ensure that airports are fully adhering to wildlife hazard assessment and plan requirements or effectively implementing their plans to reduce strikes. As a result of these practices, FAA has missed instances of airports’ noncompliance with Program requirements. Additionally, FAA does not have assurance that wildlife biologists who conduct the required assessments for airports or the FAA inspectors⁶ who review them have the qualifications and expertise needed in wildlife management. Without sufficient oversight, enforcement, and wildlife hazard expertise, the

⁶ There are a total of 35 airport inspectors in the 9 FAA regions. We interviewed 19 of 20 inspectors in the 4 randomly selected regions. The 19 inspectors oversaw the 40 airports’ programs we randomly selected for review.

extent to which airports are effectively implementing their plans remains unknown.

Oversight and Enforcement of Airports' Compliance With Wildlife Hazard Mitigation Requirements Is Lacking

FAA did not sufficiently oversee whether airports complied with Program requirements. FAA regulations require that airports assess the magnitude of strike risks and if needed, monitor and mitigate wildlife hazards to reduce risk. However, FAA did not initiate efforts to identify noncompliant airports until after the January 2009 accident on the Hudson River. Following that accident, FAA identified 96 airports nationwide that had triggering events between 2004 and 2009 but failed to complete the necessary assessments—revealing a significant gap in FAA's oversight during this time period.

FAA's oversight remains limited due to its inadequate inspection practices. We found that, while the Eastern region⁷ is outperforming the other three regions we visited (see exhibit C), all four regions' inspection practices are not sufficient to ensure airports are meeting wildlife hazard regulatory requirements. For example:

- **FAA's documentation of Part 139 inspections⁸ was unreliable.** Documentation was generally limited to an inspection checklist on the regulatory requirements or an inspection closeout letter and did not capture how the inspectors determined compliance with each item on the checklist or the closeout letter. For example, all checklists or closeout letters we reviewed showed that inspectors concluded that the airports were "satisfactorily" implementing their plans. However, there was no documentation to support how the inspectors made this determination such as the questions asked, airport responses, or the documents reviewed. We also found that 30 inspection checklists and closeout letters (75 percent) were inaccurate. For example, we found four incidents where FAA inspectors indicated on their checklist that airports had a wildlife hazard assessment and/or plan when in fact our review determined that they did not have one.
- **FAA missed opportunities to identify instances of noncompliance.** The 4 FAA regions we reviewed issued a total of 16 enforcement actions⁹ between

⁷ In 2009 after the "Miracle on the Hudson" accident, Eastern Region revamped its wildlife program to improve oversight and enforcement of airports' compliance with Program regulations, policies, and guidance. See Exhibit C for details.

⁸ FAA Order 5280.5C requires that its airport safety inspectors conduct periodic certification inspections of airports to ensure they are safe and in compliance with Part 139 requirements. The inspections must be fully documented. FAA airport inspectors are required to inspect Part 139 Class I airports every 9 to 15 months and Class II and III airports every 18 months.

⁹ These actions included Letters of Correction as well as Letters of Investigation. A Letter of Correction is a notification to the violator documenting the agreed upon corrective action. A Letter of Investigation is a notification to the violator of a possible violation and to provide the violator an opportunity to discuss the violation.

FYs 2009 and 2011. Although the Eastern region issued 14 of these enforcement actions, we found an additional 25 instances of noncompliance that FAA did not identify at the 8 airports we visited in the 4 regions.¹⁰ For example, three airports did not ensure all wildlife personnel completed the required annual training to carry out wildlife duties. FAA inspectors were not aware of these noncompliances because they did not verify these requirements against airport training records. The three regions asserted that they use informal counseling rather than enforcement actions. However, we found little evidence of inspectors using informal counseling to ensure airports comply with regulations, policies, or guidance.

- **FAA does not verify that airports check the qualifications of wildlife biologists who conduct the required assessments.** According to FAA regulations, only wildlife biologists who meet certain requirements may conduct wildlife hazard assessments. FAA officials stated that it is the responsibility of the airport authorities to review biologists' qualifications prior to contracting for the assessment service. FAA inspectors added that most assessments were conducted by USDA biologists who were deemed qualified based on FAA's MOU with USDA WS. However, 15 of the 40 airports in our sample utilized non-USDA biologists to conduct their assessments. In one case, an FAA inspector found that an airport's submitted assessment was glaringly inadequate and subsequently determined that the poor assessment was conducted by an unqualified biologist. This resulted in the airport having to repeat the assessment, which took 5 years to complete and two contracts totaling approximately \$143,000. Since FAA's new rule will require an additional 506 airports¹¹ to comply with requirements to conduct and update their wildlife hazard assessments, there will be a greater demand for wildlife biologists and therefore potentially more airports that may use unqualified biologists.

FAA's Oversight of Airports' Assessments and Plans Is Limited

FAA inspectors did not always ensure that airports' wildlife hazard assessments and plans were adequate and met all regulatory requirements. Our review found that 27 of 35 airports¹² did not comply with at least 1 or more requirements for their assessments and plans. Yet, FAA's inspection documentation indicated that the airports were compliant with all the assessment and plan regulatory requirements. Also, FAA inspectors did not effectively track assessments and plans for completion, review, and approval. In 21 of 40 airports we reviewed, we

¹⁰ These 4 regions oversee a total of 268 Class 1 through 3 airports. Federal regulations require these airports to comply with Part 139.337 requirements.

¹¹ According to FAA, currently, only 46 airports have updated assessments.

¹² A total of 35 of the 40 airports in our sample had a wildlife hazard assessment and/or plan. The remaining 5 airports are in the process of completing their assessment.

found that inspectors did not know whether the airports' submitted assessments and plans had been FAA reviewed and approved or whether the airports were even required to conduct an assessment or develop a plan. In one instance, we found that FAA required an airport to develop a plan in 2003, but at the time of our review the airport had not yet developed it.

In addition to the assessments and plans not meeting the minimum regulatory requirements, FAA inspectors do not have the technical expertise to ensure that these documents are effective. According to FAA's Wildlife Hazard Management Manual, wildlife hazard management requires expertise from a qualified wildlife biologist trained in wildlife damage management control. In addition, FAA guidance indicates that a wildlife biologist should review an airport's plan to ensure it is adequate for addressing wildlife strikes. However, of the four FAA regions we visited, we found that only the Eastern region adhered to this guidance by staffing an inspector with wildlife biologist qualifications to review all assessments and plans. Moreover, 17 of 19 FAA inspectors that we spoke to disclosed that they only reviewed the assessments and plans for compliance with the minimum requirements, as opposed to evaluating the overall adequacy of the plans. The inspectors explained that because they were not wildlife biologists they did not have the technical expertise to conduct a more thorough review. Without sufficient wildlife hazard expertise, the extent to which airports assessment and plans are effective remains unknown.

FAA'S POLICIES AND GUIDANCE FOR MONITORING, REPORTING, AND MITIGATING WILDLIFE HAZARDS ARE MOSTLY VOLUNTARY

Although FAA has issued 33 policy and guidance documents to airports and inspectors to manage its Program, most of these are voluntary, thereby limiting their effectiveness. Moreover, FAA has not developed performance metrics for measuring the effectiveness of its wildlife hazard mitigation activities. Industry experts have recommended using the rate of total strikes and/or damaging strikes to aircraft as possible performance metrics, but FAA cannot fully implement these suggestions until it improves the quantity and quality of the data reported to its strike database.

Most of FAA's Policies and Guidance Are Voluntary

FAA's primary guidance for the Program is the over 300-page document, "Wildlife Hazard Management at Airports: A Manual for Airport Personnel," dated July 2005, which describes how to develop, implement, and evaluate a wildlife management program. However, this and most of FAA's other policies and guidance only contain *recommended*—as opposed to mandatory—actions for airports, such as best practices for conducting required assessments or a suggested

methodology to evaluate the effectiveness of their wildlife mitigation plans. As such, FAA does not have the means to ensure that airports are taking advantage of these best practices when they create and implement their required assessments and plans. Moreover, since these practices are voluntary, they may be implemented inconsistently at different airports. As a result, FAA cannot fully assess how effective its policies and guidance are at reducing the number and severity of wildlife strikes.

Voluntary Policies and Guidance Result in Incomplete Strike Reporting and Data

Currently, FAA's policies recommend but do not require that airports and pilots report all wildlife strikes to FAA's strike database. In 2009, following an investigation of a fatal business jet accident resulting from a wildlife strike, NTSB recommended that FAA require airports and aircraft operators to report all wildlife strikes.¹³ In response to this recommendation, FAA commissioned a study in 2009¹⁴ to analyze wildlife strike reporting rates because poor voluntary strike reporting hindered the proper evaluation of the problem. The study found that reporting rates were sufficient to identify national wildlife hazard trends and develop national policies. Therefore, FAA did not mandate strike reporting. Instead, FAA has recently increased its outreach and education efforts—such as developing awareness posters and conducting field visits and presentations—to encourage more voluntary reporting.

However, because FAA's database contains only voluntary reports, it provides an incomplete picture of the total number and severity of wildlife strikes that occur. For example, the 2009 study concluded that only 39 percent of actual strikes were reported and as many as 36 percent of the events involving wildlife in FAA's Accident/Incident Data System (AIDS)¹⁵ database were not captured in its strike database. Similarly, at the 8 airports we visited, we found that 108 of 507 (21 percent) strikes in airports' internal strike logs were not reported to FAA's strike database for 2010.

We also found that, because strike reporting is voluntary, airports varied in how frequently they chose to report strikes to FAA. According to our analysis, at one large airport, 90 percent of the airport's recorded strikes were reported in FAA's strike database while another medium airport reported only 11 percent of its strikes. Airport officials stated that they did not report all known strikes to the database because it was not a requirement.

¹³ In 1999, NTSB issued a similar recommendation after two serious Part 121 aircraft wildlife strikes. The recommendation was never implemented by the FAA. NTSB reissued the recommendation after a fatal business jet accident that occurred near Oklahoma City, Oklahoma on March 4, 2008. The NTSB's investigation revealed that the jet impacted large birds during climb out, causing catastrophic structural damage and killing 5 people.

¹⁴ DOT/FAA/AR-09/65, Trends in Wildlife Strike Reporting, Part 1—Voluntary System 1990-2008, December 2009.

¹⁵ The AIDS database contains data records for general aviation and commercial air carrier incidents since 1978.

Furthermore, the data that *are* reported to the database are often incomplete. For the 8 airports we visited, we found that 68 percent (346 of 507) of records in the strike database were missing one or more of the following key data fields: extent of damage, species of wildlife, phase of flight, altitude that the strike occurred, and/or effect on flight. For example, for one 2010 wildlife strike that involved \$5.5 million in engine damage, the strike report was missing the altitude that the strike occurred. This missing data limits the ability of the data users¹⁶ to ascertain where the strike occurred and implement immediate measures to mitigate the risk of another strike.

Without full reporting and complete data on wildlife strikes, it is difficult to fully analyze the magnitude of safety issues, the nature of the problems, and the economic cost of wildlife strikes. FAA reported that “one of the biggest challenges that wildlife managers at airports face today is the lack of good data.”¹⁷ For program management purposes, FAA is also unable to determine whether increases in strike reporting are due to increases in actual strikes or increased reporting. Conversely, FAA cannot determine whether decreases in strike reporting are a result of achieving its program goal or simply a lack of reporting.

FAA Lacks Performance Metrics To Measure Progress Toward Its Program Goal

Even though the Program has been in place for more than 50 years, FAA does not have policies and guidance for monitoring its progress toward meeting the Program’s goal of reducing wildlife hazards at or near airports. FAA includes wildlife hazard mitigation as a core business target in its business plan¹⁸ and lists goal-related activities, such as updating airport wildlife hazard guidance and identifying airports’ AIP funding needs. However, FAA’s plan does not identify *any* performance metrics for measuring the effectiveness of these target activities. The plan generally states that these goal-related activities will “reduce hazard to aircraft from bird strike.” Without performance metrics, FAA cannot assess whether it is achieving its Program goal.

In interviews, industry and government experts¹⁹ recommended using total and/or damaging strike rates as possible performance metrics for the Program. However, the author of the 2009 FAA commissioned study explained that the estimated 39 percent reporting rate for FAA’s strike database would not be sufficient to support a performance metric. This is because performance metrics require more complete data—such as those acquired through mandatory reporting—whereas a

¹⁶ Users include airports, airlines, engine manufacturers, FAA, and other Federal agencies.

¹⁷ Statement is from an article regarding airport safety in FAA’s “Safety Briefing” magazine, dated November/December 2011.

¹⁸ FY 2011 Office of Airports (ARP) Business Plan.

¹⁹ Industry and government experts include USDA wildlife biologists, FAA officials, and representatives from NTSB and Smithsonian Institute-Division of Birds.

smaller sample provided sufficient data for identifying nationwide trends. Therefore, FAA will not be able to effectively create, implement, or support these metrics until the Agency improves the quantity and quality of the strike data reported to the strike database.

FAA'S COORDINATION WITH MOST GOVERNMENT AGENCIES ON WILDLIFE HAZARD MITIGATION IS LIMITED AND INFREQUENT

While FAA works effectively with USDA WS, its main partner in wildlife hazard mitigation, FAA's efforts to coordinate management of off-airport hazards and strikes with other Government agencies are limited and infrequent. These agencies play a supportive role in minimizing wildlife risks by managing wetland projects that could attract wildlife (see table 1 below). However, FAA inspectors are not always aware of issues contributing to wildlife hazards because they seldom reach out to these Government agencies.

Table 1. 2003 Multi-Agency Memorandum of Agreement Roles and Responsibilities

Agency	Expertise	Role in Wildlife
Federal Aviation Administration (FAA)	Provide leadership in airport design planning that mitigates risk from aircraft-wildlife strikes.	To initiate coordination with signatory agencies to review project proposals and evaluate alternative solutions.
U.S. Department of Agriculture Wildlife Services (USDA WS)	Provide expertise necessary to determine the wildlife strike risk of various land uses.	To provide wildlife services (e.g., depredation ²⁰ , training, on-call biologist) at airports whenever requested.
U.S. Fish and Wildlife Service (FWS)	Protect and manage wildlife and their habitats, including migratory birds and wetlands.	To issue depredation permits for wildlife management.
U.S. Army Corps of Engineers (USACE)	Protect and manage jurisdictional wetlands and their associated wildlife.	To issue permits related to the fill of wetlands.
U.S. Environmental Protection Agency (EPA)	Protect environmental resources.	To review and comment on certain permits related to the fill of wetlands.

FAA Effectively Coordinates With USDA WS

FAA Headquarters and regional offices coordinate effectively with USDA WS. FAA formalized its relationship with USDA WS through a multi-agency MOA²¹ executed in 2003, in response to a NTSB safety recommendation. Per this 2003 MOA and a 2005 Memorandum of Understanding (MOU), USDA WS provides professional wildlife expertise, training, and technical support to airports. In

²⁰ Depredation involves the hazing, capturing, or removal of protected species for health and human safety.

²¹ The MOA recognized each agency's role in controlling current and future environmental conditions that could prevent wildlife strikes.

addition, USDA WS's relationship with Federal, State, and local agencies provides an avenue that FAA and airports can use to coordinate wildlife hazard reduction efforts.

FAA Headquarters and USDA officials meet several times a month to discuss a variety of wildlife issues, such as wildlife policy and guidance updates, wildlife strike conferences, and mitigation strategies. In addition, FAA regional offices contact USDA WS field offices for technical support on wildlife issues at specific airports. Also, FAA regional and USDA field officials meet together annually to discuss emerging wildlife issues and annual wildlife training for airport personnel.

Interagency Coordination With Other Agencies Is Limited

Despite the 2003 MOA, FAA's coordination with other agencies is limited. All four FAA regions we visited did not regularly coordinate with local FWS, USACE, and EPA offices. Only 1 of the 16 local district offices²² we interviewed scheduled and met biannually with FAA to discuss projects or activities that could attract wildlife at or near airports.

FAA's Eastern region was the only region to establish a notification procedure with local USACE districts to identify proposed wetland projects that could increase wildlife hazards within a 5-mile radius of airports. The remaining three regions we visited had not established such procedures. FAA's lack of notification procedures with USACE in the Southern region resulted in a late wildlife hazard assessment near two airports near Savannah, GA. USACE did not notify the appropriate FAA officials of a proposed bird nesting island project within 5 miles of the airports. It was not until the project was nearly completed in 2007—7 years after the project was initiated—that the appropriate FAA office was notified of the project's potential risk to aviation safety. The local airport commission expressed concerns that the island could cause hazardous wildlife movement near both airports' runway approach. Subsequently, FAA initiated an assessment in 2008 to determine the risk and magnitude of wildlife hazards posed by the project. The assessment concluded that the activities of gulls and pelicans—the species of most concern to local air traffic—should be frequently monitored.

FAA Does Not Coordinate With Agencies To Resolve Permit Issues

FAA does not coordinate with other agencies to ensure airports obtain the proper permits (e.g., depredation permits or protected species harassment permits) in a timely fashion to fully execute their approved wildlife hazard mitigation plans. Obtaining permits from Federal, State, and/or local agencies is often necessary before airports can carry out plans to mitigate wildlife hazards for their airports.

²² The 16 local district offices are responsible for the 8 out of 40 airports that we randomly selected for site visits.

Yet, airports often experience lengthy delays between when they apply for and when they receive these permits from the permitting agencies.

As a result of these delays, some airports may be experiencing higher strike risks. For example, one airport identified an immediate hazard (a Ferruginous hawk) interfering with air operations and applied for a State depredation permit. The airport contacted the State agency several times to inquire about the status of the permit. However, the State agency delayed responding to the inquiry, which meant that the airport was unable to carry out mitigation procedures. Nine months later, the same hawk struck a passenger aircraft, causing \$3.2 million in damages. Only after the airport again contacted the State agency to notify it of the strike and follow up on the permit request did the agency respond and issue the permit.

Airport officials we interviewed said they did not notify FAA for assistance when they experienced bureaucratic roadblocks to obtaining permits because they did not think FAA could assist. While it is true that FAA has no regulatory authority over permitting agencies, FAA airport inspectors could reach out to USDA WS to assist airports in coordinating with Federal, State, and local agencies on permit issues. However, FAA does not have procedures in place to facilitate this coordination with State and local agencies.

CONCLUSION

Increases in the populations of hazardous wildlife species continue to challenge airports' ability to provide a safe operating environment. While FAA is in the process of addressing some gaps in its Wildlife Hazard Mitigation Program, further steps are needed to ensure FAA meets its Program goal of reducing wildlife hazards at or near airports. In particular, it is imperative that FAA improve its management processes by improving oversight and enforcement of Program regulations, making strike reporting mandatory, establishing performance metrics, and strengthening coordination with other governmental agencies. Otherwise, the Agency will not be able to ensure that the \$366 million in increased Program spending over the next 20 years will be used effectively to track and analyze trends in wildlife strikes, identify potential new hazards, and mitigate their risk.

RECOMMENDATIONS

We recommend that FAA:

1. Require FAA airport inspectors to adhere to Order 5280.5c *Airport Certification Program Handbook*, specifically to:

- a. Verify that airports are fully implementing and evaluating their wildlife hazard management plans, and document the basis for compliance determinations with each inspection checklist item and the records reviewed for verification, as well as documenting airports' noncompliance with regulations, policies, and guidance and actions airports took to correct them; and
 - b. Verify airports had obtained timely permits to effectively implement their wildlife hazard management plans.
2. Establish procedures to verify that airports check biologist qualifications prior to airports hiring them to conduct wildlife hazard assessments.
3. As regional airport inspector vacancies become available, staff those positions with inspectors with expertise in wildlife damage management and require those inspectors oversee the program to specifically:
 - a. Review and approve wildlife hazard assessments and management plans;
 - b. Track the review and approval process to ensure airports complete all requirements; and
 - c. Monitor wildlife strikes and, if needed, require airports to reassess their wildlife hazard management plans.
4. Require that airports, as part of their wildlife hazard management plans, maintain reports of all wildlife strikes and submit the reports quarterly to FAA for review.
5. Require inspectors to verify that airports' quarterly wildlife strike reports contain key data fields, such as extent of damage, species of wildlife, phase of flight, altitude that the strike occurred, and effect on flight; and to contact the airports with any incomplete or missing data to obtain the information, if available.
6. Reconcile the airports' quarterly reports with FAA's National Wildlife Strike Database and ensure any missing strikes are entered into the database.
7. Develop and implement performance metrics to measure the effectiveness of FAA's target activities in achieving the Program goal of reducing wildlife hazards at or near airports.
8. At a minimum, conduct annual outreach meetings with other government agencies to discuss the Memorandum of Agreement, permitting issues, and any projects or activities that may attract wildlife at or near airports.

9. Establish notification procedures with other government agencies to notify FAA of project proposals that may increase hazardous wildlife populations within a 5-mile radius of airports.
10. Develop and implement procedures to coordinate with State and local agencies to assist airports with permitting issues.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided a draft of this report to FAA on June 21, 2012, and received its response on July 30, 2012. FAA's response is included in its entirety as an appendix to this report. In its response, FAA concurred with recommendations 1, 2, 7, 8, 9, and 10; partially concurred with recommendations 3, 4, and 5; and did not concur with recommendation 6.

FAA's planned actions for recommendations 1, 2, 7, 9, and 10, were responsive and included reasonable timeframes.

For recommendation 3, FAA noted that it will provide all FAA airport inspectors wildlife damage and mitigation training instead of staffing each FAA region with an inspector with expertise in wildlife damage management. FAA's proposed alternative approach meets the intent of our recommendation. However, this recommendation will remain open pending receipt of the following documentation:

- timeline to implement the wildlife training,
- wildlife training curriculum outlining the training plan for FAA inspectors to assess the adequacy and effectiveness of the wildlife hazard assessments and management plans, and
- guidance and procedures for FAA inspectors to track the status of the review and approval process of the wildlife hazard assessments and management plans.

For recommendations 4, 5, and 6, FAA respectively noted that it will add language in AC 150/5200-33B to require airport operators to keep records of wildlife strikes, conduct outreach and training with the aviation community to ensure key data fields are entered into the strike database, and urge national reporting of wildlife strikes. In addition, FAA will continue to perform spot checks of airports' strike records during annual inspections. While these initiatives will likely encourage more strike reporting, they do not ensure that the strike database will be complete (i.e., key data fields are populated such as species of wildlife and phase of flight). Furthermore, with FAA's agreement to develop a performance metric, it is even more critical that FAA improves the quantity and quality of its wildlife

strike data. Renowned wildlife biologist and author of FAA-commissioned study on wildlife strike reporting,²³ Dr. Richard Dolbeer, noted that a performance metric requires more complete data (i.e., populating key data fields). The manager of FAA's Airport Safety and Operations Division is quoted as saying "Wildlife strikes are probably the most pressing issue we face in the airports world," and observed that the lack of good data is one of the biggest challenges that wildlife managers at airports face.²⁴ In our opinion, FAA is missing an opportunity to fully address one of its biggest challenges by not meeting the full intent of these recommendations. Accordingly, we request that the Agency reconsider its position.

For recommendation 8, FAA suggested we close this recommendation because it is conducting annual meetings and coordinating with appropriate Federal and State agencies during environmental assessments of airport projects. With the exception of USDA, we found that 15 of the 16 local district offices (FWS, USACE, and EPA) did not annually meet with FAA to discuss the Memorandum of Agreement, permitting issues, and any projects or activities that may attract wildlife at or near airports. Accordingly, we request that FAA provide documentation to verify that the Agency's actions meet the intent of this recommendation—specifically that FAA is conducting annual outreach meetings with other agencies to discuss the Memorandum of Agreement, permitting issues, and any projects or activities that may attract wildlife at or near airports.

ACTION REQUIRED

We consider recommendations 1, 2, 7, 9, and 10 resolved but open pending the completion of the actions planned. We also consider recommendations 3 and 8 resolved but open pending receipt of supporting documentation of FAA's actions taken. For recommendations 4, 5, and 6, we request that FAA reconsider its position. In accordance with Department of Transportation Order 8000.1C, we request that FAA provide us this additional information within 30 days.

We appreciate the courtesies and cooperation of FAA staff during this audit. If you have any questions concerning this report, please contact me at (202) 366-0500 or Scott Macey, Program Director, at (415) 744-3090.

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cc: DOT Audit Liaison, M-1
FAA Audit Liaison, AAE-100

²³ DOT/FAA/AR-09/65, Trends in Wildlife Strike Reporting, Part 1—Voluntary System 1990-2008, December 2009.

²⁴ FAA Safety Briefing, "Splat: The Story of Snarge, 'Accidental' Meetings Between Airplanes and Wildlife," November/December 2011.

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this audit in accordance with generally accepted Government auditing standards between March 2011 and June 2012. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

As part of our review, we randomly selected four out of nine FAA regions to visit. We randomly selected 40 airports' programs (10 per region) to review and 8 airports (2 per region) to visit from a universe of 209 Part 139 airports that had wildlife strike reports from CYs 2008 through 2010 in the four randomly selected regions.

To evaluate the effectiveness of FAA's Wildlife Hazard Mitigation Program, we:

- Analyzed FAA's current policies, guidance, and processes.
- Interviewed FAA officials responsible for Program oversight and enforcement at Headquarters and selected regions.
- Reviewed FAA records of inspection and enforcement activities for selected airports.
- Interviewed airport personnel responsible for wildlife management at selected airports.
- Reviewed wildlife hazard assessments, management plans, training records, permits, annual evaluations, and strike records at selected airports.
- Analyzed 2010 strike reports in FAA's National Wildlife Strike Database for selected airports.
- Interviewed representatives from other government agencies (USDA WS, FWS, USACE, and EPA) at 27 Headquarters and local district offices. We also interviewed representatives from National Transportation Safety Board, National Wildlife Research Center, Smithsonian Feather Identification Lab, Embry-Riddle Aeronautical University, and trade associations.

Exhibit B lists 64 organizations we visited, contacted, and/or reviewed.

EXHIBIT B. ORGANIZATIONS VISITED, CONTACTED, AND/OR REVIEWED**FAA**

Airport Safety & Standards
Airport Planning and Programming & Airports Financial Assistance
Planning & Environmental Division
Office of the Chief of Counsel
San Francisco Airport District Office

FAA Randomly Selected Regions

Western-Pacific Region Airports Division
Southern Region Airports Division
Eastern Region Airports Division
Northwest Mountain Region Airports Division

Randomly Selected Airports

Los Angeles International Airport
San Francisco International Airport
Oakland International Airport
Sacramento International Airport
Tucson International Airport
Monterey Regional Airport
Redding Municipal Airport
Flagstaff Pulliam Airport
Sonoma County Airport
Santa Barbara Municipal Airport
John F. Kennedy International Airport
Ronald Reagan Washington National Airport
Washington Dulles International Airport
Philadelphia International Airport
Baltimore Washington International Airport
Dutchess County Airport
Norfolk International Airport
Stewart International Airport
Syracuse Hancock International Airport
Albany International Airport
Hartsfield-Jackson Atlanta International Airport
Palm Beach International Airport
Tampa International Airport
Southwest International Florida Airport
Memphis International Airport
Savannah/Hilton Head International Airport

Exhibit B. Organizations Visited, Contacted, and/or Reviewed

Coastal Carolina Regional Airport
Fayetteville Regional Airport
McGhee Tyson Airport
Wilmington International Airport
Portland International Airport
Seattle-Tacoma International Airport
Salt Lake City International Airport
Denver International Airport
Durango La Plata Airport
Rogue Valley International-Medford Airport
Fort Collins Airport
Aspen/Pitkin County Airport
Missoula International Airport
Tri-Cities Airport (Washington)

NTSB

Office of Safety Recommendation & Advocacy
Investigations
Government Affairs

Government Agencies

USDA Office of the Inspector General
U.S. Department of Agriculture, Animal and Plant Health Inspection Service
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
Environmental Protection Agency
Smithsonian Feather Identification Lab

Trade Associations

Airlines for America
Airports Council International
Air Line Pilots Association
National Air Traffic Controllers Association

Stakeholders

USDA National Wildlife Research Center
Embry-Riddle Aeronautical University

EXHIBIT C. FAA'S EASTERN REGION WILDLIFE PROGRAM INITIATIVES PUT FORTH FOLLOWING THE MIRACLE ON THE HUDSON

In 2009, following the “Miracle on the Hudson” accident, FAA’s Eastern region was the only region (out of four) in our review that revamped its wildlife program by implementing the following initiatives to improve oversight and enforcement of airports’ compliance with Program regulations, policies, and guidance:

- Hired an airport inspector with wildlife biologist qualifications in September 2009 to oversee the program and review all airports’ assessments and plans.
- Developed a process to monitor wildlife strikes and if needed, require airports to obtain a wildlife biologist to conduct a site visit to reassess their plans.
- Drafted and issued additional guidance to airports to ensure airports were adequately evaluating the effectiveness of their plans.
- Conducted airport risk analyses and initiated a plan to target greater oversight and enforcement of airports with the highest strike risk based on the number of passenger enplanements, flight operations, and damaging strike rates.
- Levied enforcement actions to ensure airports complied with regulatory requirements and conducted annual evaluation of plans.
- Established a notification procedure with USACE districts to identify proposed wetland projects that could increase wildlife hazards at airports.

The other three regions in our review did not follow Eastern region’s footsteps by incorporating any of these initiatives in their program management.

In addition, having a wildlife biologist on staff has significantly improved Eastern region’s quality of assessment and plan reviews. For example, in the Eastern region we found numerous correspondences between FAA biologist and the airports requiring changes in monitoring and mitigation strategies to fully address current wildlife hazards. Additionally, we found 14 enforcement actions identifying 20 program problems related to annual evaluations of the plans, training of airport personnel involved in wildlife hazard management, increasing wildlife management personnel, and revising and updating the plans. These correspondences and enforcement actions supported a critical and comprehensive review of airports’ plans beyond the minimum regulatory requirements and a proactive oversight and enforcement of program effectiveness.

Exhibit C. FAA’s Eastern Region Wildlife Program Initiatives Put Forth Following the Miracle on the Hudson

EXHIBIT D. MAJOR CONTRIBUTORS TO THIS REPORT

Name	Title
Scott Macey	Program Director
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Federal Aviation Administration

Memorandum

Date: July 30, 2012

To: Jeffrey B. Guzzetti, Director, Assistant Inspector General for Aviation and Special Program Audits

From: H. Clayton Foushee, Director of Audit and Evaluation, AAE-1 

Subject: FAA Response to the Office of Inspector General (OIG) Draft Report on Wildlife Hazard Mitigation Program

FAA has devoted considerable effort to improving the outcomes from its work with airports and the aviation industry to reduce wildlife related hazards to aviation, which is an important component of airport safety management systems. It has achieved results as demonstrated in key measures of effectiveness. Specifically, while wildlife strikes have increased, as described in the OIG draft report, the percentage of significant strikes, in which multiple strikes occur simultaneously or in which an air carrier experiences a damaging collisions has decreased markedly, from 20 percent of total reported strikes in 1990, to 9 percent in 2010. This improvement has occurred thanks to the combined efforts of FAA, wildlife experts, airports, and the increased availability of information and forums for exchanging information on effective mitigation actions.

Risk factors involved with wildlife strikes have grown markedly over the time period covered by the report due to growing encroachment into natural habitats and significant growth in wildlife populations. For example, the North American non-migratory Canada Goose population increased about 4 fold from 1 million birds in 1990 to over 3.5 million in 2011. Success stories in the Nation's environmental stewardship can also have unintended consequences, at times affecting the hazard levels. For example, about 90 percent of all bird strikes in the U.S. are by species federally protected under the Migratory Bird Treaty Act. The FAA is working hard with its aviation industry partners to identify effective and creative means to reduce the threat of wildlife strikes to aviation safety

FAA is taking a comprehensive approach to reduce the threat of wildlife strikes on aircraft through enhanced requirements and guidance, training, outreach, and continued

data collection, analysis and research. The following highlights FAA efforts and accomplishments in each of these areas.

FAA Providing Enhanced Requirements and Guidance

FAA is developing a Notice of Proposed Rulemaking that includes broader requirements for airports to conduct wildlife hazard assessments regardless of whether they have experienced “triggering” events. To encourage airports to not wait for a rule change, FAA issued a Certification Alert on June 11, 2009 reminding airports of the increasing risk from bird strikes. This alert advised airports to be proactive and conduct a wildlife hazard assessment so that the nature and extent of any wildlife hazards to aircraft operations at a particular airport are fully understood. Finally, the Certification Alert stated that the FAA would make AIP funds available to assist with the wildlife hazard assessment. This initiative recognizes that wildlife risks impact general aviation airports as well as commercial service airports.

FAA is also working to ensure that airports understand the types of qualifications needed to conduct credible wildlife assessments. On January 31, 2012, FAA published an updated Advisory Circular (AC) 150/5200-36A, Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports. This AC clarifies qualification requirements of wildlife biologists who can do wildlife hazard assessments or mitigation plans.

FAA Enhanced Wildlife Hazard Mitigation Training

FAA has enhanced the training requirements for airport certification and inspection specialists to include a focus on wildlife hazard mitigation. Specifically, annual recurrent certification training for FAA airport certification safety inspectors must include wildlife hazard training. FAA is further augmenting the training with more specialized and in depth training for each region. For example, FAA conducted a two day wildlife training course for regional staff from the New England, Eastern and Southern Regions. Attendance included the regional airport inspectors and program managers. Training was focused on improving the capability for reviewing Wildlife Hazard Assessments or a Wildlife Hazard Management Plan. The FAA is planning additional training sessions for the remaining regions and will make this training mandatory for all the regional staff with responsibility for reviewing the airport assessments and mitigation plans.

FAA Outreach is Regional, National and International

FAA is constantly working to raise awareness and build relationships with all the stakeholders to address the aviation safety hazards posed by wildlife. FAA routinely conducts outreach sessions at numerous national and state airport conferences and other aviation events nationwide to encourage bird strike reporting. The agency has also met with aviation associations including the American Association of Airport Executives, Airports Council International North America, the National Association of State Aviation

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Officials, and the Airline Pilots Association to brief them on the importance of their members reporting bird strikes. Internally, wildlife hazard mitigation experts have met with Commercial Aviation Safety Team (CAST) on the agency's program for wildlife hazard mitigation and the need to increase strike reporting. Wildlife hazard mitigation is now routinely on the CAST meeting agenda.

FAA does have established processes for working with other government entities to review proposed projects near or on airports that might be wildlife attractants, including proposed landfills, expansion of wetlands, or other reclamation projects. FAA's two headquarters' wildlife biologists are available to provide expert advice to the regional personnel reviewing the projects. FAA also has a close working relationship with the U.S. Department of Agriculture's Wildlife Services that has a large number of wildlife biologists that FAA can and does call upon for expert analysis.

FAA has also established relationships with domestic and international stakeholder organizations intended to help focus outreach and address wildlife hazard mitigation. For example, FAA signed a Memorandum of Understanding (MOU) with the Bird Strike Committee USA (BSC-USA) to improve cooperation with the FAA. The BSC-USA is comprised of wildlife biologists and other experts concerned about mitigating wildlife hazards to aviation. The MOU formalizes the FAA relation with the committee and allows the agency to draw upon the committee's expertise to improve the wildlife program. Internationally, FAA initiated a program in coordination with the International Air Transport Association, International Civil Aviation Organization, and Latin American and Caribbean Air Transport Association to conduct wildlife hazard assessments at key airports in Latin America. These airports are served by U.S. carriers and visited by U.S. travelers. The first assessments were conducted in June 2012 in Panama and Ecuador.

Data, Analysis, and Research Will Further Improve Aviation Safety

FAA is conducting varied data gathering and analytical activities that will better inform mitigation efforts and help to identify creative and useful actions that will further mitigate wildlife hazards. In order to improve the availability of bird strike data, FAA updated the national wildlife strike database and made it available to the public. Additionally, the FAA has developed software to allow for the easy reporting of bird strikes via smart phones and has published and distributed wildlife posters for posting in pilot lounges and related airport facilities nationwide to encourage bird strike reporting. FAA is also continuing its funding of the Smithsonian Institution's Feather Identification Lab to identify bird species from remains collected from bird strikes. Airports can mail remains to the lab and receive notice of bird species identification at no cost. Knowing the bird species involved in bird strikes helps airports improve their wildlife mitigation activities

FAA recently published two reports through the FAA sponsored Airport Cooperative Research Program (A Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports and Bird Harassment, Repellent, and Deterrent Techniques for Use On and Near Airports) to help general aviation airports manage wildlife hazards. These

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reports were distributed to general aviation airports nationwide and provided airport managers with practical guidance to manage wildlife risks.

FAA has also made considerable progress in the area of using radar to potentially provide real time warning systems for pilots about bird activity at or near an airport. FAA has already evaluated commercially available bird radar systems and published AC 150/5220-25, Airport Avian Radar Systems, on November 23, 2010. This AC provides bird radar performance specifications that airports may use to competitively procure bird radars to help manage their wildlife mitigation programs by tracking daily and seasonal bird migration movements and identifying roosting areas. In addition, the FAA determined bird radar systems to be eligible for AIP funding. This determination also established several associated requirements, including that the airport must have a complete and approved wildlife hazard management plan and an ongoing bird harassment plan in place, along with provisions in the Airport Certification Manual (for airports certificated under title 14 CFR, part 139) to operate and maintain the system, as well as requirements to analyze the incoming data, tracking the data, and acting on the data trends. While these systems may be useful for some airports, FAA has initiated new bird radar research intended to evaluate the feasibility of using bird radar in the air traffic control tower.

Independent Confirmation of Voluntary Bird Strike Reporting

FAA has obtained independent confirmation that voluntary bird strike reporting provides a sufficient data set for determining national trends and hazard levels. The National Transportation Safety Board (NTSB) recommended mandatory strike reporting in issuing Recommendation A-09-75 after investigating the fatal accident in which a Cessna 500 crashed after hitting a flock of large birds after takeoff from Wiley Post Airport in Oklahoma on March 4, 2008. The agency provided a detailed formal response to NTSB Recommendation A-09-75 on December 23, 2009, based upon an FAA-funded study of bird strike data and trends conducted by Dr. Richard Dolbeer, an internationally recognized authority on the subject. The FAA also met with the NTSB on March 10, 2010 to discuss the agency's response to the recommendation.

The Dolbeer study concluded that the current level of voluntary strike reporting is sufficient for determining national aircraft strike trends, determining the hazard level of wildlife species involved in aircraft strikes, and for providing a scientific foundation for FAA policies and guidance regarding the mitigation of risk from wildlife strikes. This report can be found at: <http://www.airporttech.tc.faa.gov/safety/downloads/09-65.pdf>. The FAA is also committed to continuing education /outreach programs to encourage improved strike reporting.

The NTSB formally responded to the FAA on May 27, 2010 and concluded that the current reporting rates are adequate, based upon their independent analysis of the FAA-funded study. Further, the NTSB determined that the conduct of this study, in conjunction with the FAA outreach/education programs for targeted segments of the aviation community, constituted an acceptable alternate response to the recommendation.

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NTSB categorized the FAA response to recommendation A-09-75 for mandatory strike reporting as, “*Open -- Acceptable Alternate Response*,” (attachment 1). Given the adequacy of the current wildlife strike database, the FAA cannot justify a rule-making project requiring mandatory reporting.

Overall, the challenges facing aviation with regard to wildlife hazard mitigation, requires creative approaches. These may vary from location to location, encompassing unique challenges associated with individual airports, and focus on the need for aviation safety, while simultaneously respecting the many species with which we share this planet. While the OIG report focuses on matters relating to consistency and records management, it is important to recognize the unique challenges faced by individual airports and work with them to identify the creative approaches that will enable FAA and the airports to effectively contend with these challenges.

RECOMMENDATIONS AND RESPONSES

Recommendation 1: Require FAA airport inspectors to adhere to Order 5280.5C, Airport Certification Program Handbook, specifically to:

- a. Verify that airports are fully implementing and evaluating their wildlife hazard management plans and document the basis for compliance determinations with each inspection checklist item and the records reviewed for verification, as well as documenting airports’ noncompliance with regulations, policies, and guidance and actions airports took to correct them; and
- b. Verify airports had obtained timely permits to effectively implement their wildlife hazard management plans.

FAA Response: Concur. The FAA agrees that airport inspectors could improve upon the wildlife hazard portion of the annual airport safety inspections, and the agency will address these areas in all training sessions on wildlife and airport inspections.

Typically, inspectors sample the airport’s documentation and records. If they do not find discrepancies or reasons to increase the sample size, inspectors can determine that the airport is in compliance for that particular section of Part 139. Inspectors do not document reasons for compliance in each area, but do compile documentation to support findings of noncompliance.

The FAA agrees that airport inspectors should verify that airports have obtained timely permits to effectively implement their wildlife hazard management plans and will include this requirement in the wildlife checklists that are being developed for airport inspectors by November 30, 2012.

Recommendation 2: Establish procedures to verify that airports check biologist qualifications prior to airports hiring them to conduct wildlife hazard assessment.

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FAA Response: Concur. On January 31, 2012, the FAA issued AC 150/5200-36A that lists in detail the minimum qualifications of wildlife biologists to conduct and prepare airport wildlife hazard assessments and management plans. It is the responsibility of airports to obtain sufficient evidence during the proposal process, demonstrating that the selected biologists meets the qualification requirements provided for in the AC. The FAA will issue formal guidance by January 31, 2013 that requires airport operators to maintain documentation on the qualifications of biologists retained for the conduct of wildlife assessments and mitigation plans. These records must be made available for airport inspector review during the annual inspection.

Recommendation 3: As regional airport inspector vacancies become available, staff those positions with inspectors with expertise in wildlife damage management and require those inspectors who oversee the programs to specifically:

- a. Review and approve wildlife hazard assessments and management plans;
- b. Track the review and approval process to ensure airports complete all requirements; and,
- c. Monitor and wildlife strikes and, if needed, require airports to reassess their wildlife hazard management plans.

FAA Response: Concur in part. The FAA hires airport inspectors based upon the necessary expertise in a number of core airport safety areas, and wildlife experience is just one of many requisite skillsets. However, the agency intends to provide wildlife damage and mitigation training to all airport inspectors, which will adequately qualify them to oversee these programs.

All airport inspectors are capable of tracking the review and approval process, and they are also capable of checking the national bird strike database, which is standard procedure prior to conducting an annual airport safety inspection. In addition, if regional airport oversight personnel encounter a particularly complex wildlife hazard issue, they can, and routinely do, request assistance from the staff biologist at FAA headquarters or from the Department of Agriculture Wildlife Services biologists.

Recommendation 4: Require that airports, as part of their wildlife hazard management plans, maintain reports of all wildlife strikes and submit the reports quarterly to FAA for review.

FAA Response: Concur in part. The FAA will add language in the upcoming revision of AC 150/5200-33B, "Hazardous Wildlife Attractants on or Near Airports," by November 2012 that will require airport operators to keep records of wildlife strikes. The records will be provided for the FAA inspectors' reviews during the annual airport inspections. This is consistent with how the FAA reviews other airport records, such as training records for firefighters. Therefore, the FAA does not believe that requiring airports to submit quarterly wildlife strike reports to FAA is necessary.

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Recommendation 5: Require inspectors to verify airports' quarterly wildlife strike reports contain key data fields, such as extent of damage, species of bird, phase of flight, altitude that the strike occurred, and effect on flight; and to contact the airports with any incomplete or missing data to obtain the information, if available.

FAA Response: Concur in part. While FAA agrees that data accuracy is important, as discussed in response to the prior recommendation, FAA does not believe that creating and enforcing a quarterly reporting requirement is an effective or efficient use of resources. FAA would prefer to use its resources addressing the issues directly rather than creating new paperwork requirements for its inspection workforce. Instead, FAA will address issues relating to missing data fields in strike reports through outreach and training through continuing interactions with the aviation community at national and state conferences

Recommendation 6: Reconcile the airports' quarterly reports with FAA's National Wildlife Strike Data Base and ensure any missing strikes are entered into the database.

FAA Response: Non-concur. FAA does not agree that quarterly reporting and reconciliation is effective or efficient. FAA inspectors will continue to spot check airport strike records during its annual inspection and compare them to strikes reported in FAA's National Wildlife Strike database and encourage airports to correct any missing reports. However, creating a records reconciliation requirement is not based on any apparent analysis of cost, benefit, or assessment of relative priority for reducing wildlife risk mitigation. FAA will also continue to urge local tracking and national reporting.

Recommendation 7: Develop and implement performance metrics to measure the effectiveness of FAA's target activities in achieving the Program goal of reducing wildlife hazards at or near airports.

FAA Response: Concur. The FAA is developing additional metrics to monitor the efficacy of its wildlife program that include the number of wildlife hazard assessments initiated and the ratio between the numbers of strikes with significant damage compared to total reported strikes. This measure differs from the total number of strikes reported and is a better indicator of the operational significance of the problem. The agency's improved metrics will be presented in the "Wildlife Strikes to Civil Aircraft in the United States 1990 to 2011" report to be published by October 30, 2012.

Recommendation 8: At a minimum, conduct annual outreach meetings with other Government agencies to discuss the Memorandum of Agreement, permitting issues, and any projects or activities that may attract wildlife at or near airports.

FAA Response: Concur. The FAA conducts annual meetings and coordinates with appropriate Federal and state agencies during environmental assessments of airport projects, to include consideration of wetlands and other potential wildlife attractants. Accordingly, the FAA requests that this recommendation be closed.

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Recommendation 9: Establish notification procedures with other government agencies to notify FAA of project proposals that may increase hazardous wildlife populations within a 5-mile radius of airports.

FAA Response: Concur. The FAA already has a notification process and does receive notification of many projects from other government agencies that may impact wildlife hazards to airports. The FAA will review the notification process to determine if it can be improved. This review will be completed by January 31, 2013.

Recommendation 10: Develop and implement procedures to coordinate with State and local agencies to assist airports with permitting issues.

FAA Response: Concur. The FAA will develop and implement procedures to assist airport sponsors to facilitate timely issuance of permits. FAA will issue this guidance by January 30, 2013.

Attachment 1

Safety Recommendation History for A-09-075 FAA

Response Date: 12/23/2009	From: Addressee
Response: Letter Mail Controlled 1/7/2010 3:59:43 PM MC# 2100009: - From J. Randolph Babbitt, Administrator: The FAA agrees with the benefit of increased reporting, and after the US Airways Flight 1549 incident that resulted in the emergency landing in the Hudson River, FAA initiated a review of its National Wildlife database. We improved the usability of the bird-strike Web site, made it more user friendly, and made it publically available. We also initiated a research study to determine the current level of strike reporting and whether that level of reporting was sufficient to determine strike trends and develop national policy. A study was conducted and we have enclosed a draft copy for your information. Dr. Richard Dolbeer found through the study, that strike reporting has increased significantly from his well-publicized level of 20 percent, that had been documented in a few limited studies from the 1990s. His current analysis indicates that 39 percent of actual wildlife strikes are reported at part 139 airports. The data also verifies stabilization in reporting damaging strikes since 2000. We believe this important trend is a result of the increased data that is being used by biologists involved with more professionally run wildlife hazard programs at part 139 airports. Dr. Dolbeer also concludes that this level of strike reporting (39 percent) is sufficient to analyze national strike trends and develop national wildlife hazard mitigation policies, which is one of the main purposes of having a national strike database. We believe the current level of reporting of 39 percent is statistically valid and sufficient to analyze strike trends and develop national mitigation policies. Accordingly, we do not believe it is necessary to impose mandatory strike reporting. Although the overall level of reporting is adequate, there are areas where improvements in strike reporting can be achieved (i.e., NPIAS/ GA airports, part 139 airports, and air carriers). The FAA has initiated measures to increase strike reporting by: Improved education/outreach with the National Associate of State Aviation Officials, Aircraft Owners and Pilots Association, Airport Council International-North America, Air Transport Association of America, National Business Aviation Association, Inc., American Association of Airport Executives, air carriers, part 139 airports, and NPIAS/GA airports; and Expanding and improving procedures to transfer data from FAA and industry databases to the national database.	
Response Date: 5/27/2010	From: NTSB
Response: On March 10, 2010, staff from the FAA and the NTSB met to discuss this recommendation in detail. An FAA-funded study, performed by Dr. Richard Dolbeer, evaluated whether the current level of strike reporting in the NWSD was sufficient for determining strike trends and developing national mitigation policy. The study concluded that the current level of reporting, which is higher than the level the NTSB found, is sufficient; therefore, the FAA does not plan to take the action recommended. However, based on Dr. Dolbeer's recent study, the FAA plans to make improvements to reporting through an education/outreach program with a number of aviation organizations. This recommendation was based on the findings of an earlier study by Dr. Dolbeer; in his more recent study, Dr. Dolbeer evaluated whether the reporting problems identified in his earlier study continued to limit the applicability of the NWSD. The fact that Dr. Dolbeer himself concluded that current reporting rates are adequate is significant. The conduct of this study, in combination with the outreach/education program for targeted segments of the aviation community, constitutes an acceptable alternative response to this recommendation. Accordingly, pending improvements in wildlife strike reporting by the segments of the aviation community identified by the FAA, Safety Recommendation A-09-75 is classified OPEN -- ACCEPTABLE ALTERNATE RESPONSE.	

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