Wildlife Hazard Management at Airports: Current Trends and Potential Conflicts

Outline

I. Introduction
   1. History
   2. Trends
   3. Regulations
   4. Current Events and Potential Conflicts
   5. Future Directions
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Introduction - History

- 12/17/1903 - Wright Brothers
- 9/7/1905 - First Bird Strike
- 4/3/1912 - Calbraith Rodgers
- 10/4/1960 - Boston Harbor, MA
- 9/23/1995 - Elmendorf AFB, AK

Cleary and Dolbeer 2005, Dolbeer 2013
**U.S. Civil Aircraft**

- 1912-1959: 3 aircraft destroyed
- 1960-2010: 160 aircraft destroyed
- 1990-2013: 62 aircraft destroyed
- 2,100 U.S. Passenger Fleet (1965)
- 8,200 U.S. Passenger Fleet (2005)

**Trends in Wildlife Strikes to Aircraft**

![Trends in Wildlife Strikes to Aircraft](chart)

**Causes of Increased Wildlife Strikes**

- 1965: 90% of commercial aircraft had 3 or 4 engines
- 2005: 10% of commercial aircraft had 3 or 4 engines
Wildlife Strikes to Civil Aircraft in the United States, 1990–2010

detailed analysis of deer strikes with civil aircraft in the USA occurred in May - July. Deer strikes were comprised of 910 white-tailed deer, 58
1990–2010. In addition, 122 strikes with reptiles were reported of which 70 percent
other terrestrial mammal strikes (bottom graph) with civil aircraft by month, USA,
Figure 4. The percentage of reported bird and bat strikes (top graph) and deer and

“Most Wanted List”

- Mammals
  - White-tailed deer
  - Coyotes
- Birds
  - Birds of prey
  - Waterfowl
  - Charismatic species
    - Bald eagle
    - Red-tailed hawks

Regulations

- International Civil Aviation Organization (ICAO)
  - 1990-Provided recommendations
  - 2003-Recommendations became mandatory
- Federal Aviation Administration (FAA)
  - 2004-Certificated airports in USA to conduct Wildlife Hazard Assessment (WHA)
  - Wildlife Hazard Management Plan (WHMP)
Wildlife Hazard Assessment (WHA)?

- Part 139 (b) WHA required as a result of a triggering event:
  - (1) Multiple wildlife strikes;
  - (2) Substantial damage from striking wildlife,
  - (3) An air carrier aircraft experiences engine ingestion of wildlife; or
  - (4) Wildlife of a size, or in numbers, capable of causing an event described above is observed to have access to any airport flight pattern or aircraft movement area.

Federal Aviation Administration 2007

WHA

1. Analysis of the events or circumstances that led to the assessment
2. Id wildlife species (numbers, locations, local movements, and daily and seasonal occurrences)
3. Id features on and near the airport that attract wildlife.
4. A description of wildlife hazards to air carrier operations.
5. Recommendations to reduce wildlife hazards to aviation safety

Federal Aviation Administration 2007

Management Strategies

- Habitat Management & Modification
- Harassment/Hazing
- Exclusion
- Education
- Direct Control

Federal Aviation Administration 2007
Management Strategies

Current Events – Wildlife Strikes in the News

Bird strike leaves MASSIVE hole in United Airlines jet as it lands at Denver airport
By Snejana Farberov
PUBLISHED: 19:28 EST, 31 July 2012 | UPDATED: 16:00 EST, 1 August 2012
An unidentified bird smashed into a United Airlines Boeing 737 as it descended into Denver International Airport (DIA) Tuesday morning, leaving a giant gash in the nose of the aircraft. Despite the mid-air collision, Flight 1475 landed safely at 9:09 am and was escorted to a gate on the B concourse. The plane was traveling from Dallas/Fort Worth to Denver.
The plane's pilots were aware of the bird strike and declared an emergency. They reported damage to the jet's horizontal stabilizer and air speed indicators, but it had no bearing on the landing, according to ABC7.

Deer hit by plane on runway at Northeast Florida Regional Airport in St. Augustine
ST. AUGUSTINE, Florida (WTLV) -- A plane struck a deer on the runway at Northeast Florida Regional Airport while it was landing.
The small passenger jet was a Florida National Guard C-12 and there were no injuries to anyone on the plane, according to Lt. Col. James Evans.
There was minor damage to the prop, Evans said.
The Army will investigate to see if there were any other issues. The pilot and co-pilot will undergo procedural testing at Cecil Airport, Evans said.

US Airways Flight 1549
1/15/2009
Canada Geese
Captain “Sully” Sullenberger
Spokesman for Aviation Safety
155 Survivors – 0 Fatalities
Potential Conflicts

- Opposition
- Animal rights activists
- "Birds were here first"
- Charismatic Species
- Birds of prey
- Canada goose

Future Direction - Is it working?

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Literature Cited


Acknowledgements

Questions

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