



Interagency Aviation Accident Prevention Bulletin



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Page 1 of 2

Subject: Bird Strike Avoidance

Area of Concern: Aviation Safety of Flight

Distribution: All Aviation Activities



Discussion:

Bird strikes can turn a routine flight into an emergency. On January 15, 2009, US Airways flight 1549 suffered multiple bird strikes on departure from LaGuardia airport in New York City. The bird strikes resulted in the loss of both engines. Fortunately, the pilot was able to maneuver the disabled aircraft and land in the Hudson River. Everyone survived.

Earlier this year, a “routine” flight to Tern Island in the Pacific turned into an emergency when the aircraft struck a Red-Footed Booby on landing. These birds grow to a height of approximately 2 ½ feet and weigh over 2 pounds. Fortunately, no one was injured and the aircraft received only minor damage.

You probably know that any bird, no matter the size, has the potential to cause damage to an aircraft. But, have you ever wondered which bird has been identified as the most damaging to aircraft? The turkey vulture is the most damaging, followed by Canadian geese and white pelicans; which are all very large birds. Fortunately, only about 15% of all bird strikes result in damage to the aircraft. The force of the impact generally depends on the weight of the bird, the difference in velocity, and the direction at impact. The force increases with velocity, which is why high speed impacts with aircraft cause considerable damage.

Although the number of reported bird strikes is increasing each year, about 80% still go unreported. More bird strikes occur during the day (63%), than at night (27%) and twilight (10%). The vast majority of bird strikes occur during takeoff / climb (35%) and approach / landing (50%).

Bird strike risk is greatest during the bird migration seasons in spring and fall. More strikes occur during fall migrations because large flocks move to wintering areas over a short period of time, whereas spring migrations are slower and more irregular. In non-migratory periods, more than 90% of reported bird strikes occur below 3000 ft AGL and 61% below 100 ft AGL.

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There are four major migratory flyways: Atlantic (following the East coast); Mississippi (following the Mississippi River from Canada); Central (representing a broad area east of the Rockies, stretching from Canada through Central America); and Pacific (following the west coast). The Mississippi flyway contains the largest number of birds, followed by the Pacific, Central, and Atlantic.

So how do you minimize or mitigate the risk associated with bird strikes? Here are a few suggestions:

Before Takeoff:

- Review web sites that provide predictive information on bird activity (www.usahs.com).
- Listen carefully to the Automatic Terminal Information Service (ATIS) and review the Notices to Airmen (NOTAMs) at your departure and destination airports for “birds in the vicinity.”
- Ask airport / airfield managers to disperse any birds on or near the runway.
- For multi-crew aircraft, discuss the emergency procedures to be followed in the event of a bird strike, especially if windshield penetration results in pilot incapacitation.

In Flight:

- If possible, avoid flights along rivers or shorelines.
- Avoid low flight over bird havens such as sanctuaries and landfills.
- Remember that birds will generally break downward when threatened so attempt to pass above them.
- Hovering birds, searching for prey, have even been known to attack aircraft, so give them a wide berth.
- Maintain a slower speed in areas of bird activity. It will give you and the birds greater reaction time.
- Use landing lights whenever possible to make your aircraft more visible to birds.

Information used in this APB is from “When Birds Strike”, Bob Behren, AOPA Pilot, 87, April 2009. For further information see:

* The University of Puget Sound bird identification resources site:

<http://www.ups.edu/biology/museum/wingphotos.html>

* The Air Force BASH site: <http://safety.kirtland.af.mil/AFSC/Bash/home.html>

* The Bird Avoidance Model (BAM) site: <http://www-afsc.saia.af.mil/magazine/htdocs/marmag98.htm>

* The Bird Strike Committee USA site: <http://www.birdstrike.org/commlink/links.htm>



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