

From the Cockpit
September 2003
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I read about an airliner having to land in New York after it hit some birds earlier this month and was wondering if bird strikes happen often and how serious they are. Do you have more information on that?

The Allied Pilots Association issued a hotline message after the incident you describe, commending the Captain and First Officer for responding with “absolute professionalism and expertise in the handling of this safety event.” The crew “experienced an emergency on their Flight #549 on Thursday, September 4, which departed LGA at 0610 from Runway 13. Their F-100, with 34 passengers on board, hit numerous large birds at approximately 100 feet in overcast weather with low visibility. The immediate result was a #2 uncontained engine failure that threw a fan blade through the fuselage. The crew ran the checklist and diverted to JFK with a severe vibration caused by extensive damage to the aircraft. They landed at JFK 13 minutes after departure from LGA and taxied to the gate. No emergency evacuation took place.”

Bird strikes are potentially dangerous to aircraft and prove deadly to birds. They can happen anywhere in the world and affect all types of flying machines, from the simplest to the most technologically advanced.

A comprehensive Department of Transportation report published in June 2003, states that increased commercial air traffic, a marked increase in the population of wildlife species involved in strikes, and the replacement of three and four engine jets by quieter two engine jets (research shows birds are less able to detect and avoid these newer engines) are three factors which experts say may cause “the risk, frequency and potential severity of wildlife-aircraft collisions to escalate over the next decade.”

The same study indicates that most strikes occur during daytime hours, between July and October. They usually happen at or near an airport during takeoff and landing, and at lower altitudes (55% at heights less than 100 feet; 78% under 1000 feet and 86% under 2000 feet). The top five states for reported bird strikes are California, Florida, Texas, New York and Illinois.

<http://wildlife.pr.erau.edu/Bash90-02b.pdf>

Birds can impact and penetrate a windshield, and injure or incapacitate the pilots; they can be ingested into engines causing engine failure and also damage other parts of the aircraft. A study done by the UK Civil Aviation Authority found the following to be common locations of aircraft bird strikes: nose/radome section (33%), engines (17%), windshield (16%), wings (14%), fuselage (13%) and landing gear (7%).

<http://airsafe.com/events/birdhit.htm>

There is no magic solution to the bird problem, and so far most bird control measures have met with limited success, prompting researchers to continue to innovate. The use of border collie patrols is one example. These dogs, bred for herding, are avid workers and their intimidation and harassment techniques, delivered without barking or injury to birds, have proven effective at reducing bird populations and bird strike accidents in areas they patrol. Border collies are in use at several commercial airports and military airfields in the US, Canada and Israel.

<http://birdstrike.bcrescue.org/>

The Air Force's AHAS (Avian Hazard Advisory System), uses the NEXRAD weather radar system to monitor large-scale migratory bird activity in the lower 48 states. AHAS also integrates data from the National Weather Service (NWS) to provide a predictive model of risk from migratory and soaring bird activity.

<http://www.usahas.com/ahasWorks/>

Aircraft designers are continually developing better ways to "bird-proof" airplanes. The Boeing 777, for instance, has engines that are capable of ingesting four 2.5 pound birds and still produce at least 75% of their full thrust rating. Jetliners also have heating elements in the windshields, which gives them a certain degree of elasticity and makes them better able to resist damage from bird strikes.

Windshields are required to withstand the impact of a four-pound bird traveling at speeds up to the design cruising speed of the aircraft at sea level.

Collisions with birds and wildlife constitute a serious safety issue that calls for an integrated approach: improving bird and other wildlife reporting statistics, continued research on new technologies to reduce wildlife hazards, bird management and control techniques and airport environmental and land use programs.

Here are some interesting statistics from the Bird Strike Committee USA:

<http://www.birdstrike.org/>

- Bird and other wildlife strikes to aircraft annually cause over \$500 million in damage to U.S. civil and military aviation.
- Over 155 people have been killed world-wide as a result of bird strikes since 1990.
- Over 6,100 bird strikes were reported for U.S. civil aircraft in 2002. Thousands more likely go unreported. The FAA estimates that only 20% of bird strikes in the U.S. are reported.
- From 1990-2002, waterfowl (31%), gulls (29%), and raptors (17%) represented 77% of the reported bird strikes causing damage to U.S. civil aircraft.

- A 12-lb Canada goose struck by a 150-mph aircraft at lift-off generates the force of a 1,000-lb weight dropped from a height of 10 feet.
- About 90% of all bird strikes in the U.S. are by species federally protected under the Migratory Bird Treaty Act.

When was the first mail delivered by air?

The Lore of Flight (Crescent Books, New York) lists the “first recorded occasion when an aeroplane was used to deliver letters to their destination” occurring in India on February 18, 1911, “when a sack of mail was flown some 6 miles from Allahabad to Nairi by the French pilot Pequet.”

In the US, Earle Ovington carried a US mail pouch from Long Island to Mineola, a distance of six miles, on Sep 23, 1911.