Aviation Investigation Final Report

Location:	Ocean City, New Jersey	**Accident Number:**	ERA09LA384
Date & Time:	July 4, 2009, 10:00 Local	**Registration:**	N6502A
Aircraft:	LANCAIR COMPANY LC42-550FG	**Aircraft Damage:**	Substantial
Defining Event:	Birdstrike	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While landing at his destination airport, the pilot observed two Canada geese emerge from the grass beside the runway. The airplane struck the geese with the propeller and right main landing gear, then veered off the runway and struck a concrete runway light mounting pad. Postaccident examination revealed damage to the propeller, engine cowling, and composite structure of the airframe, as well as damage to the nosewheel and main landing gear. The airport experienced 55 aircraft operations a day with 60 percent of the operations involving transient aircraft. The airport was also located next to a marsh, and the airport, marsh, and an adjacent golf course had approximately 30 Canada geese permanently inhabiting the area. No warning regarding birds being on or in the vicinity of the airport was published in the airport facility directory, nor was a warning recorded on the airport's automated weather advisory system. No fencing was present to keep geese from walking onto the airport from the marsh, and the airport did not have a formal wildlife mitigation program.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight collision with birds during landing. Contributing to the accident was the airport's lack of a wildlife mitigation program.

Findings

Environmental issues	Animal(s)/bird(s) - Effect on equipment
Organizational issues	Availability of policy/proc - Airport

Factual Information

History of Flight

Landing-flare/touchdown	Birdstrike (Defining event)
Landing-landing roll	Runway excursion

HISTORY OF FLIGHT

On July 4, 2009, at 1000 eastern daylight time, a Lancair LC42-550FG, N6502A, was substantially damaged after striking birds, during landing at Ocean City Municipal Airport (26N), Ocean City, New Jersey. The certificated private pilot and one passenger were not injured. Visual meteorological conditions prevailed for the flight that departed Lancaster Airport (LNS), Lancaster, Pennsylvania, about 0924 eastern daylight time. An instrument flight plan was filed for the personal flight conducted under 14 Code of Federal Regulations Part 91.

According to the pilot during landing at 26N, the airplane struck two Canada geese that wandered onto the runway from the surrounding grassy area. The geese made contact with the airplane's propeller and the right main landing gear. After striking the geese, the airplane veered off the right side of the runway and then struck a concrete runway light-mounting pad.

PERSONNEL INFORMATION

According to Federal Aviation Administration (FAA) records, the pilot held a private pilot certificate with ratings for airplane single-engine land, and instrument airplane. His most recent FAA second-class medical certificate was issued on July 20, 2008. He reported 1,130 total hours of flight experience on that date.

AIRCRAFT INFORMATION

The accident airplane was a 4-seat, tricycle landing gear equipped, low wing monoplane of composite construction. It was powered by a 310 horsepower Continental IO-550-N.

According to FAA and maintenance records, the airplane was manufactured in 2004. At the time of the accident, it had accumulated 967.4 total hours of operation.

METEOROLOGICAL INFORMATION

The recorded weather at Atlantic City International Airport (ACY), Atlantic City, New Jersey, approximately 12 nautical miles north of the accident site, at 0954, included: wind 270 degrees at 11 knots, gusting to 17 knots, visibility 10 miles, sky clear, temperature 24 degrees C, dew point 14 degrees C, and an altimeter setting of 29.93 inches of mercury.

AIRPORT INFORMATION

According to the Airport Facility Directory (AFD), 26N was a public use airport. It had one runway oriented in a 06/24 configuration. The runway was asphalt, in good condition. The total length was 2,973 feet long and 60 feet wide.

According to airport operational statistics, 55 aircraft operations a day occurred at the airport with 60 percent of the operations involving transient aircraft.

Examination of the airport and surrounding area by a United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) wildlife biologist revealed that, approximately 30 Canada geese permanently inhabited the area surrounding 26N's runway, the adjacent city owned golf course, and an adjacent marsh.

Review of the AFD and 26N's automated weather advisory system (AWAS) by Safety Board investigators revealed, that no warning was in the AFD, and no warning was being transmitted on the AWAS recording regarding birds on and in the vicinity of the airport.

Review of photographic evidence by Safety Board investigators revealed that no perimeter fencing existed between the marsh and the airport to keep wildlife off of the airport.

WRECKAGE AND IMPACT INFORMATION

Post accident examination revealed that, the airplane had received damage to the propeller, engine cowling, and composite structure of the airframe. The nose landing gear had collapsed, the nose wheel assembly had separated from the nose wheel landing gear, the right main landing gear and its wheel assembly had been damaged, and the right main landing gear brake wheel backer plate was jammed against its wheel assembly preventing rotation of the wheel.

TESTS AND RESEARCH

According to Ocean City's manager of public transportation, 26N did not have a wildlife mitigation program but at the time of the accident, he was in the process of "filling out the paperwork" to get funding for one. He stated that he was a big believer in "Air FieldTurf", which was is an artificial turf product that eliminates sources of food, water and shelter for wildlife in airside areas, and that the airport in 2004, had tested it and wanted to have it installed. When asked if he had reported the bird strike to the FAA, he stated that he had not.

Wildlife Strike Database

The USDA, through an interagency agreement with the FAA, compiles a database of all reported wildlife strikes to United States registered civil aircraft, United States Air Force aircraft, and to foreign air carriers experiencing wildlife strikes in the USA. Strike reporting is

voluntary.

At the time of this report, over 108,000 wildlife strikes had been compiled since January of 2009 from 1,585 domestic airports and 237 foreign airports.

According to the Wildlife Strike Database, 92% of the bird strikes occurred at or below 3,000 feet above ground level, and during the five years between 2004 and 2008, there was an average of 20 reported wildlife strikes per day.

Canada Geese

According to USDA-APHIS, in many areas of the country, nonmigrating Canada goose and duck populations have increased dramatically. These birds require fresh water for resting and nesting and tender young grass and other succulent vegetation for food. As a result, the plentiful, well-manicured lawns of residential neighborhoods, corporate business areas, parks, airports, community gardens, and golf courses provide excellent habitat for these birds. Geese are particularly opportunistic and can easily become accustomed to people and residential areas.

Although most people find a few birds acceptable, problems quickly develop as bird numbers increase. These problems include overgrazing of grass and ornamental plants; accumulation of droppings and feathers; attacks on humans by aggressive birds; and the fouling of reservoirs, swimming areas, beaches, docks, lawns, and golf courses. Flocks of geese and other waterfowl also feed on a variety of crops, including corn, soybeans, rice, lettuce, winter wheat, barley, and rye.

Feeding of waterfowl may contribute to the problem of waterfowl conflicts with humans. In addition, migratory and nonmigratory Canada geese, like all native waterfowl in the United States, are protected by the Migratory Bird Treaty Act of 1918 and State laws. Under these laws, it is illegal to hunt, kill, sell, purchase, or possess migratory birds except as permitted by regulations enforced by the U.S. Department of the Interior’s Fish and Wildlife Service (FWS).

Management Techniques

A number of methods have been recommended by FWS to discourage waterfowl from settling in residential and crop areas. These techniques should be used in combination with one another because geese and other waterfowl quickly become accustomed to any single technique.

1. Discontinuing Feeding: Wild geese are capable of finding their own food and will survive without handouts from people. Once feeding by humans is discontinued, waterfowl will revert back to the better quality natural foods. In most instances, the birds will leave.

2. Modifying Landscaping: Geese and ducks in particular are grazers and require short, green

grass for food. Allow grass to grow longer so that it is unpalatable to the birds. Along water edges, plant vegetation that is less attractive to the birds than grass, such as pachysandra, periwinkle, and euonymus. Waterfowl prefer to build their nests on islands, peninsulas, and undisturbed grounds. During landscaping, do not create small islands or peninsulas in ponds; where these features already exist, consider changes to make these areas unavailable to waterfowl.

3. Installing Barriers: Waterfowl prefer to land on water and walk onto adjacent grassy areas to feed and rest. The most effective tools for controlling waterfowl movement are fences, hedgerows, and other physical barriers.

4. Using Scaring Devices: Large helium-filled balloons, strobe lights, scarecrows with movable parts, bird scaring reflecting tape, Mylar flags, screamer sirens, whistle bombs, shell crackers, and automatic exploders will help keep geese and other waterfowl from feeding and resting on property. Periodic movement of these items is recommended. Before using shell crackers, automatic exploders, or other pyrotechnics, check local and State regulations concerning permits and the use of firearms and pyrotechnics.

5. Utilizing Dogs: Some landowners use dogs to keep geese out of hay and grain crops. Most effective are free-ranging dogs trained to chase birds as soon as they land.

6. Preventing Nesting: Local populations of waterfowl may be controlled if property owners prevent them from nesting. Since waterfowl are protected by State and Federal laws, a permit is required before eggs or nests can be disrupted. Permits are granted by FWS and State wildlife management agencies. Before a permit is issued however, the applicant must demonstrate that nonlethal habitat-management techniques were unsuccessful in controlling damage.

7. Hunting: Where it is safe and legal, hunting can be used to control some species of residential waterfowl.

8. Relocation: In special instances, USDA may relocate urban waterfowl using live-trapping or tranquilizers. Many States however, discourage the relocation of waterfowl within their borders because of the possibility of problems being created elsewhere in the State. Canada geese instinctively try to return to areas where they were born and raised and should be moved at least 200 miles away from their nesting site.

ADDITIONAL INFORMATION

As part of USDA-APHIS, the Wildlife Services (WS) program helps to alleviate wildlife damage to agricultural, urban, and natural resources. Helps to address wildlife threats to public health and safety, and protects endangered and threatened species from predators.

At the request of Ocean City's manager for public transportation, WS initiated discussions to

help the City address their Canada goose problem which the City had tried to control in the past by harassment with vehicles and dogs.

Some of the suggestions that they had were to:

- Keep the grass at a height of 10 inches or greater to make it unattractive to geese for foraging and gulls for loafing, or if the long grass went to seed (since it may then become attractive to the geese), it should be cut down to a height of 10 inches.

- Grade bare areas and seed them with a grass type such as many species of tall fescue which grow well in sandy soil and are unattractive to grazing wildlife such as geese.

- Install artificial turf which seems to work well, especially in critical areas and locations with erosion problems.

- Increase their dog effigies (silhouettes) effectiveness by moving them to different locations frequently to avoid habituation by geese.

- Remove persistent geese through shooting or capture/removal.

- Try different methods of nonlethal harassment such as paintball guns or airsoft guns.

Airport Visits

On July 14, 2009, WS biologists attempted to harass the geese with paintball and pellet guns with limited effect. Plans were also made for the capture and removal of the Canada geese (which were molting and therefore flightless).

On the morning of July 17, 2009, WS biologists arrived at 26N to start capturing the Canada geese however, no geese were present.

On July 21, 2009, WS biologists once again returned to airport and were successful in removing 13 Canada geese. Further discussions regarding the airport applying for and utilizing a FWS Migratory Bird Depredation Permit to take Canada geese occurred, and a permit application was forwarded to Ocean City's manager of public transportation. The installation of low fencing (24 to 48 inches high), along the edge of the marsh on the west side of the airport, to inhibit molting Canada geese from walking on to airport property was also discussed, as well as maintenance of the vegetation, which was primarily phragmites at a height of 10 inches, along the western edge of the airport.

Additionally, during the summer of 2010, WS biologists captured another 27 Canada geese to reduce the overall resident Canada goose population on and in close proximity to 26N

Corrective Actions

In order to improve safety, the City of Ocean City took the following actions:

1. A warning was added to the AFD stating; "BIRDS ON AND INVOF ARPT."

2. A warning regarding birds and wildlife was added to the transmitted AWAS message.

3. Drainage was improved at the airport to reduce fresh water ponding.

4. Obtained a FWS Migratory Bird Depredation Permit to allow Ocean City's police officers to help control the population of Canada geese.

5. Is maintaining the grass on the airport at a minimum height of 10 inches.

6. Put a contract out to bid for the installation of "Air FieldTurf" along the sides of the taxiways and runways.

7. Is working with the FAA to install a 24 inch high fence along the perimeter of the marsh on the west side of the airport.

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	July 20, 2008
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 5, 2008
Flight Time:	1105 hours (Total, all aircraft), 196 hours (Total, this make and model), 1047 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	LANCAIR COMPANY	**Registration:**	N6502A
Model/Series:	LC42-550FG	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	42048
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 11, 2008 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	967 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550-N
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ACY,75 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	09:54 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	24°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lancaster, PA (LNS)	**Type of Flight Plan Filed:**	IFR
Destination:	Ocean City, NJ (26N)	**Type of Clearance:**	IFR
Departure Time:	09:24 Local	**Type of Airspace:**	

Airport Information

Airport:	Ocean City Municipal Airport 26N	**Runway Surface Type:**	Asphalt
Airport Elevation:	5 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	Unknown
Runway Length/Width:	2973 ft / 60 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	39.263332,-74.607223(est)

Administrative Information

Investigator In Charge (IIC):	Gunther, Todd
Additional Participating Persons:	Ernie Scardecchio; FAA/ FSDO; Philidelphia, PA
Original Publish Date:	May 19, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=74218