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## Airport Bird Threat in North America from Large Flocking Birds (geese) (as Viewed by an Engine Manufacturer)–Part 3

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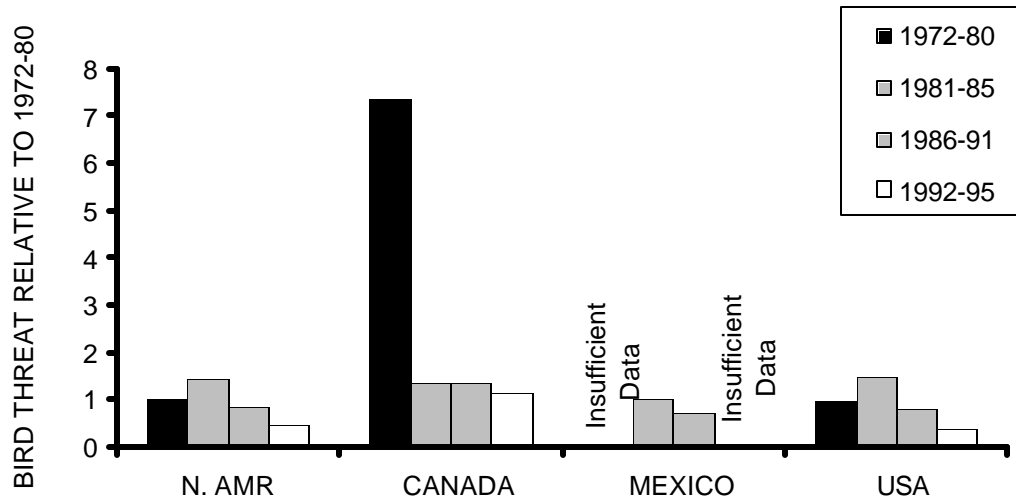


Figure 7 Bird Threat and Trends in North America

## CONTROLLING BIRDS AT AIRPORTS

The presence of a flock of birds on or near an active runway signals that improvements in the bird control program are required at that airport. It may also indicate that there are adverse contributing factors just beyond the premises of the airport, such as bird sanctuaries, crops, garbage landfills, abattoirs (slaughterhouses), or unsanitary local conditions. In these cases, the need for corrective actions by other regulatory agencies, working with airport authorities and local governments, is required.

Bird control programs must include passive and active measures that deter birds. Passive airport terrain features include proper surface water drainage, removal of undesirable vegetation near runways, and control of insects and small mammals. Active bird hazard control patrols must regularly check for the presence of birds near runways and frighten them away using such means as loud bangs, trained predator birds, or other techniques.

Engine manufacturers generally are not involved in, nor do they have directly useful experience regarding, the control of birds and FOD at airports. The authorities at airports must assume this responsibility to assure that airport bird control programs are effective, remain active, and are more widely disseminated and applied. Timing is urgent: lessons learned from history should be heeded:

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- In 1987, the authorities in Ethiopia had been advised of a safety threat from flocking birds due to a lack of adequate airport bird hazard controls in that country. In 1988, during a revenue service departure from Bahar Dar, Ethiopia, a Boeing 737-200 ingested birds in both engines and lost power - as described earlier.
- On 22 September 1995, a US Air Force AWACs aircraft encountered a flock of Canada Geese during takeoff rotation from Elmendorf Air Force Base near Anchorage, Alaska. Canada Geese had been roosting near the departure runway. Investigation determined that both left wing engines ingested geese and lost power. The aircraft crashed and all crew members were fatally injured. In July of 1995, the USAF Bird Aircraft Strike Hazard (BASH) Team had visited Elmendorf and identified habitat problem relative to the presence of flocks of Canada geese. Not all of the BASH Team recommendations had been implemented on the date of the accident.

### **BIRD AVOIDANCE GUIDELINES**

Recognizing that the bird threat appears to be growing at a number of airports worldwide, the following guidelines are proposed to aid in pilot training and awareness of bird threats in the skies we fly.

Pilot educational training, both initial and recurrent training, must include an awareness of what constitutes a bird hazard exposure and the possible consequences. It must be recognized that the worst threat is from flocking birds, especially gulls, kites, pigeons, and waterfowl (geese/ducks) - due to the potential for a multiple engine power loss. Encounters with birds must be avoided. Pilots must not challenge the birds.

Effective Pilot Communication with the control tower in response to reports of "bird activity in the airport vicinity" is needed to determine key facts on the severity of the bird threat, such as:

- the locations of the birds with respect to the active runway and flight plan,
- flock size or number of birds and direction of travel,
- type (or size) of birds.

Bird avoidance procedures by the pilot as part of his pre-departure planning may be the best method of, and last resort for, preventing a major bird ingestion incident. The presence of flocking birds on or near an active runway is a threat that must be corrected before an aircraft departs - afterwards may be too late. Bird patrol teams with their ground vehicles may need to be sent out repeatedly to disperse the birds.

Effective bird avoidance requires that control towers take the responsibility to alert crews to the presence of birds on or near the active runways. Pilots must take the responsibility to avoid the birds where possible. Airport managers must assure bird hazard control programs are in place and include active bird patrol teams to disperse the birds.

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### SUMMARY

Birds are one of our world's most precious resources and need to be protected. However, it must be recognized that the presence of birds at and around airports poses a safety threat to aircraft operations and thus to humans as well.

It is of paramount importance, therefore, that the bird control measures discussed in this paper be implemented at any airport experiencing a bird hazard in order to reduce, or, hopefully, eliminate, this very real cause of potentially fatal accidents. Airport bird hazard control programs should be reviewed with particular emphasis on the control of flocking birds, such as gulls, pigeons, waterfowl (geese/ducks), etc. The data presented in this paper on the experience with damaging bird encounters on aircraft engines clearly show that the methodology exists and damaging birds can be controlled when the commitment is made.

Pilot initial and recurrent educational training must emphasize an awareness of what constitutes a bird hazard threat and the possible consequences. Pilots must not challenge the birds!

Airport Authorities need to implement effective wildlife management programs on airports to address the growing population of geese as well as other flocking birds. There needs to be zero tolerance for grazing geese at airports.

Where necessary, the US Department of Interior's Fish and Wildlife Service need to initiate actions to humanely reduce the rapidly growing population of geese near airports to mitigate the hazard to aviation as posed by geese flocks.

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### THE AUTHOR

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### REFERENCES

1. "Waterfowl Population Status, 1997", U.S. Fish and Wildlife Service, Department of the Interior, Office of Migratory Bird Management, Branch of Surveys and Assessment; authors are David F. Caithamer and James A. Dubovsky, July 23, 1997.
  2. "Do Populations of North American Canada Geese Pose an Increasing Hazard to Aviation?", John L. Seubert, published paper presented at Bird Strike Committee USA Meeting, Phoenix, Arizona July 14-17, 1996.
  3. "Commercial Transport Engine Bird-Ingestion Design Considerations", Thomas L. Alge, GE Aircraft Engines, published paper presented at Bird Strike Committee Canada, Vancouver, BC, April 1996.
  4. "Commercial Transport Engine Geographic Bird Threats & Trends", Thomas L. Alge, GE Aircraft Engines, published paper presented at Birdstrike Committee Europe, London, England, May 1996.
  5. "Wildlife Control Procedures Manual", Safety and Technical Services - Airports Group, Transport Canada, Report No. TP11500E, November 1992.
  6. "The Worldwide Bird Problem-Effects on Aircraft, Status of the Problem and Control of Hazard", Thomas L. Alge and John T. Moehring, published paper presented at The International Air Safety Seminar, The Flight Safety Foundation, The International Federation of Airworthiness and the International Air Transport Association, Dubai, United Arab Emirates, November 14, 1996.
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Airport Bird Threat in North America  
from Large Flocking Birds (geese)  
(as Viewed by an Engine Manufacturer)

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### Summary

This paper focuses on the increasing threat to aircraft and engines posed by the recorded growth in geese populations in North America. Service data show that goose strikes to aircraft and engines are increasing, especially in North America - consistent with the growing resident geese populations estimated by the USDA. Airport managers, along with the governmental authorities, need to develop a strategy to address this large flocking bird issue.

This paper also presents statistics on the overall status of the bird threat for birds of all sizes in North America relative to other geographic regions. Overall, the data show that Canada and the USA have had marked improvements in controlling the threat from damaging birds at airports - except for the increase in geese strikes. It will always be necessary for airport operators and regulatory authorities to ensure that extreme ingestion encounters are avoided. Effective airport bird hazard controls are needed now and must be maintained in the future.