

BIRD STRIKE COMMITTEE EUROPE

BSCE23/WP24
London, 13-17 May 1996

**THE ROLE AND VALUE OF AWARENESS PROGRAMS
IN REDUCING BIRD HAZARDS TO AIRCRAFT**

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Summary

Decision makers in Canada, as in other parts of the world, often approve or promote land use activities near airports that seem to be incompatible with the goal of reducing bird hazards to aircraft. It seemed clear to managers in Transport Canada that a sense of awareness about bird hazards to aircraft was lacking among decision makers, and that an aggressive awareness program might encourage these decision makers to consider bird issues more carefully when planning land use near airports. Also, it was felt that an extended awareness program might lead to better reporting of bird strikes, and improvements in the quality of airport wildlife control programs.

Key Words: Attractants, Regulations, Public Relations, Manual, Film/Video, Agriculture

1-INTRODUCTION:

Decision makers in Canada, as in other parts of the world, have occasionally approved or promoted land used activities on and near airports that at face value appear to be incompatible with the goal of reducing bird hazards to aircraft. Recent examples of such controversial activities are as follows:

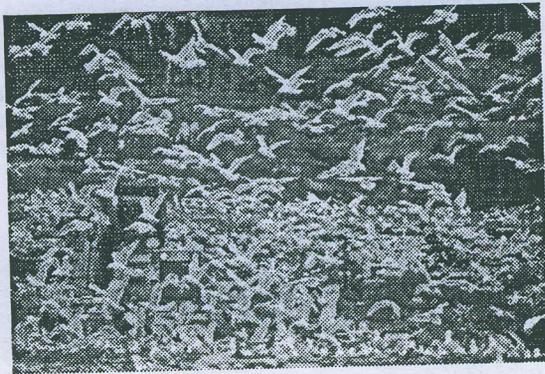
- In order to obtain Federal Government approval to construct a parallel runway at Vancouver International Airport, an environmental assessment process was undertaken. Several recommendations provided by the environmental assessment panel dealt with the public's concern that new airport development projects would have an impact on bird habitat and populations on Sea Island, where the airport is located. In order to address these concerns, Transport Canada agreed to create a conservation area immediately north of the new runway. Preliminary plans for the conservation area included an extensive avifauna enhancement program, involving facilities such as nesting boxes, perch poles, and other artificial habitat features designed to attract raptors. A lengthy and costly process has been undertaken by Transport Canada to assess the risk to aircraft operations resulting from the enhancement program, and as a result, the program has been considerably scaled down. Also, a comprehensive risk management process has been developed in order to identify and mitigate any risk that may arise from the management of the conservation area.



**Mini-Barn in the Sea Island Conservation Area
Designed as a Nesting Structure for Common Barn Owls**

- The airport in St. John's Newfoundland has operated for many years within 5 km of the Robin Hood Bay waste disposal facility. This site has operated without the benefit of modern waste management technology, and has always been an attractive feeding location for some Herring Gulls, Great Black-backed Gulls, and Glaucous Gulls. In spite of this attraction for birds, a thriving fishing industry combined with abundant

capelin stocks has traditionally provided sufficient food resources for the majority of gulls on the east coast of Newfoundland. This active fishing industry has allowed for a relatively comfortable co-existence between the airport and the waste disposal facility. However, significant declines in capelin and cod stocks on the east coast of Canada in the past few years have forced the Canadian Government to close major portions of the Atlantic fishery, and gulls have been deprived of their customary food source. These factors combined with the existence of an abandoned runway at the airport have resulted in the creation of a significant bird strike hazard to aircraft. Many thousands of gulls now feed at the waste disposal facility, intersect approach-departure paths on their flights to and from roosting sites, and rest on the abandoned runway thereby creating an unpredictable hazard to operational runways whenever they move. Transport Canada is currently working towards a solution to this problem.



Gulls Feeding at the Robin Hood Bay Waste Disposal Facility

- The municipality of Collingwood, Ontario has recently identified a requirement for a new waste disposal facility. The chosen site lies within 3 km of the local airport, which for the most part handles general aviation traffic, but occasionally receives small corporate jets such as Cessna Citations. A bird hazard study by one of Canada's leading consultants concluded that the development of a waste disposal facility on the chosen site could lead to serious bird hazards to aircraft operations at the Collingwood Airport. The municipality is determined to proceed with the development of the waste disposal facility, in spite of a lobbying effort by airport user groups. Resolution of the issue is currently ongoing.

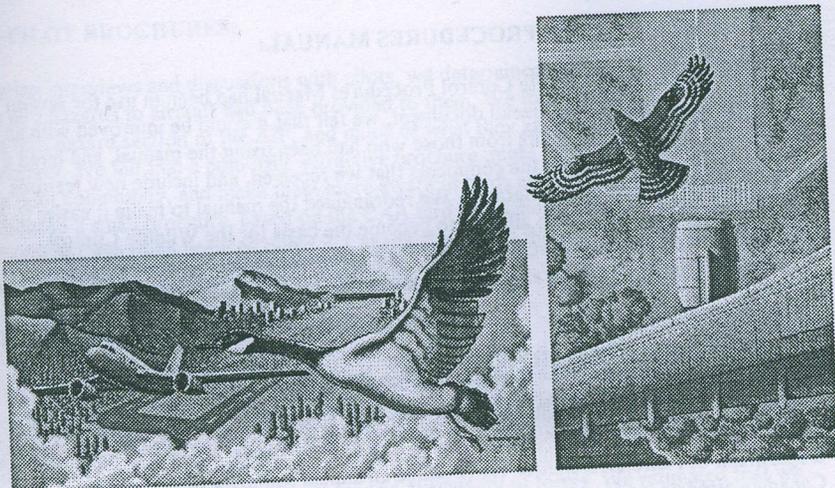
2-INCOMPATIBLE LAND USE CONSEQUENCES:

Decisions related to land use planning similar to those described above have resulted in circumstances contributing to a number of serious bird strike incidents, examples of which are as follows:

related to bird hazards. Although this conclusion was by no means ground-breaking, it was apparent that an aggressive awareness campaign within Canada might go a long way towards minimizing some problems. We decided that we would initiate a comprehensive awareness program in the hope that decision makers would consider bird hazards when planning land use activities near airports. We also felt that increased awareness might encourage airport operators to improve the quality of their wildlife control programs, and lead to more accurate reporting of bird strikes by the aviation community.

4-POSTERS:

We began our program with the decision that we needed a bird strike 'corporate logo.' We contracted a local artist and graphic designer to produce a set of posters that could be used as the logo on a number of products. The goal of the poster campaign was to have one poster describe the problem, and the other a range of solutions. We wanted them to be sufficiently attractive that managers and others within the aviation community would willingly display them in their offices and other facilities. Two thousand of these posters were printed in French and English, and have been widely distributed.



Transport Canada Bird Strike Awareness Posters

5-VIDEOS:

We decided to produce three VHS videos that would provide a range of information on bird hazards to aircraft. The first video, 'Sharing the Skies' is a general awareness video that provides an overview of the bird hazard to aircraft problem, and describes a number of mitigating measures that can be taken by airport operators to minimize the problem, including habitat modifications and active bird dispersal techniques.

The second video is a thirty minute training aid that was produced to compliment the two day airport Wildlife Control Training Seminar that we have also developed. This video provides specific instructions to those involved in the management of wildlife at airports, and describes many of the techniques currently being used in Canada, including habitat modification, falconry and pyrotechnics. It is also intended for use at small airports that may not be able to afford having personnel attend a wildlife control course.

The third video is an awareness video produced specifically for airport operators and municipal officials who may be involved in developing waste disposal facilities. The video is intended to provide information about the dynamics that can be created as gulls move among feeding, resting, and roosting sites. It uses the St. John's Airport situation as a case study to show how a poorly located waste disposal facility can result in significant flight safety problems.

6-WILDLIFE CONTROL PROCEDURES MANUAL:

The Transport Canada Wildlife Control Procedures Manual had been in use for several years, and although it was a useful document, we felt that it could be improved with an update. We solicited comments from those who had been using the manual, and hired a co-op student to incorporate the comments that we received, and include new features such as bird weights and photographs. We reorganized the manual to make it easier to find information items, and also to allow it to become the basis for the Wildlife Control Training Seminar that we were developing. The updated manual was printed and distributed to most Canadian airports, and throughout the aviation community.

7-BIRD STRIKE SUMMARY REPORTS:

Transport Canada has been collecting and analyzing bird strike data for many years. We collect data from a number of sources, but primarily from pilots, airlines, airports, and the Department of National Defence. We produce an annual summary of bird strikes at Canadian airports, and in spite of commonly known data deficiencies, the summary reports are very useful in assessing problems at a specific airport from year to year, and also, in tracking trends such as species struck, or damage rates to engines.

8-AERONAUTICAL INFORMATION PUBLICATION BIRD HAZARD SECTION:

The Aeronautical Information Publication, or AIP, is a loose-leaf book used by all pilots in Canada as an information source for aviation matters. The section on bird hazards had not been updated in a number of years, and provided improper information on the reporting of bird strikes. We updated the section, and included new bird migration maps and the new Bird/Wildlife Strike Report Form.

9-BIRD MIGRATION MAPS:

Migration maps had originally been prepared by Transport Canada and Environment Canada 25 years ago, to be included with the bird hazard section of the AIP. The maps were intended to provide pilots with information as to when and where to expect the largest concentrations of migrating waterfowl. We worked with Environment Canada biologists to update these maps, and discovered some interesting information. In the 25 years since the maps were first prepared, populations of Ross' Geese, White Fronted Geese, Greater Snow Geese, Large Race Canada Geese, Blue and Lesser Snow Geese have all shown dramatic increases in numbers. The other significant change noted was the remarkable growth in populations of resident Canada Geese in the Vancouver and Great Lakes areas.

10-PILOT BROCHURES:

During interviews and discussions with pilots, we determined that very little information on bird hazards to aircraft had been provided to them. We found that few pilots had read the bird hazard section of the AIP, and much of what they knew of bird behaviour was incorrect. We felt that a colourful, attractive brochure might capture some interest within the pilot community, and make them more aware of birds and the associated hazards. We produced a small brochure, based on the CAA bird avoidance pamphlet, and distributed 55,000 of them to all licenced pilots in Canada along with the AIP amendment and migration maps.

11-BIRD/WILDLIFE STRIKE REPORT FORM:

The collection of bird strike data is problematic in Canada, as in most other parts of the world. Adding to our problem was the fact that there were at least four different reporting forms in circulation within the aviation community, and completed forms were being sent to a number of different addresses-some of which were no longer in existence. There were also problems with insufficient numbers and availability of forms. We estimated that we were receiving reports on approximately 30% of actual occurrences, and we hoped that a new, consolidated form might enhance our reporting rate. We designed and developed a new Bird/Wildlife Strike Report Form through consultation with stakeholders such as Bird Strike Committee Canada members, and after a two year process, we printed 30,000 forms with stamped, self addressed envelopes attached. The forms were designed to be

easily used, with shaded areas for the essential information that we wanted pilots to provide. We have distributed these forms to most locations within the Canadian aviation community.

12-WILDLIFE BULLETINS:

Transport Canada has produced a number of Wildlife Bulletins over the years, which are intended to provide timely information to the Canadian aviation community on events related to wildlife management and aviation safety. We have distributed 17 bulletins to date, and are currently working on three new ones. The latest bulletin deals with the large bird threat to aircraft safety, and will be distributed in the spring of 1996. We are currently working on a bulletin describing new technologies available to the wildlife control community, and another on the resolution of the environmental issues related to the new parallel runway at Vancouver International Airport.

13-WILDLIFE CONTROL TRAINING SEMINAR:

Traditionally, Transport Canada has provided training to wildlife control officers by organizing one five day training course each year at varying locations. These courses were available to a limited number of students per year, and due to budget constraints, the people who carried out actual wildlife control activities were not always the people selected to attend the course. We reviewed the make-up of the five day course, and determined that it could be presented in two intensive days with little loss of content. We subsequently developed a two day Wildlife Control Training Seminar which has been packaged so that it can be delivered on short notice to specific airports. This package enables the four person instruction team to travel to a site, and deliver a seminar to the staff tailored to their specific needs at a much lower cost than before, where the instructors and many of the students paid travel costs. We are now easily able to deliver four seminars to 100 students per year, rather than 25 students as was the case with the former training program.

14-BIRD STRIKE COMMITTEE CANADA:

Transport Canada has traditionally co-chaired two Bird Strike Committee Canada meetings each year in conjunction with Department of National Defence staff. Each fall we hold a meeting in Canada's capital city, Ottawa, so that headquarters staff can attend without incurring travel costs, and for the spring meeting we visit selected airports so that we can review various issues as a committee, and provide advice and assistance to the airport operator. The committee's current role is to provide a forum for the exchange of information on wildlife-aviation issues, but we intend to examine the possibility of expanding the mandate and becoming more of an advocacy group, and issue letters of resolution. We also intend to examine ways of involving the waste disposal industry in our program, so that lines of communication can be developed. We hope to reduce the conflict that arises during the planning process for waste disposal facilities when industry people discover that bird hazards are an issue. Following each meeting, we distribute the

proceedings to committee members and participants which enables us to append general information items that we receive in Transport Canada between meetings. These appendices help to maintain a high level of awareness among those involved in the committee.

15-RESULTS OF THE AWARENESS PROGRAM:

We would like to be able to report remarkable and dramatic results in the management of bird strike issues following the enhancement of our awareness program, but in fact, what we have seen so far is somewhat more evolutionary.

There has been a noticeable increase in the interest shown by the Canadian aviation community to bird strike issues, judging from the number of requests for information and awareness products that we receive, and we have kept one student very busy responding to these requests. We have noticed that our posters decorate the walls of many airport and Transport Canada offices, and products such as Wildlife Bulletins and Wildlife Control Procedures Manuals have been sent to all parts of the world. Airport operators have responded positively to the wildlife control training seminars, and we will continue to deliver these upon demand. We have trained four times the usual number of students during the year since the initiation of the new training program.

Flying clubs, private pilots, and both large and small airlines have begun to use the new Bird/Wildlife Strike Report form. Canadian Airlines International has placed 1000 forms in the flight decks of their aircraft, and Air Canada has distributed several thousand to its operations centres. We appear to be receiving better information and more of it from commercial pilots. Although the number of reports received in 1995 is up by 28% from 1994, I would be reluctant to attribute this increase to our awareness program until we have several years of data. In fact, we had anticipated a greater increase in the reporting rate, but I suspect that increased interest shown by Canadian airport operators has caused some of them to manage wildlife problems more effectively, and thereby lower their strike rate. Also, less flying by Canada's Department of National Defence has resulted in fewer reported strikes.

We feel that the awareness program has had a significant positive effect on the management of airport wildlife control programs. A number of airport operators have become involved with Bird Strike Committee Canada, and a considerable number of them have initiated ecological surveys for the purpose of developing a systems approach to the management of wildlife at their airports. A number of consultant's studies are currently ongoing in order to develop airport wildlife management plans, and in general, the larger airports are re-thinking some of the methods and techniques that have been in use over the years. There also appears to be a willingness to take a stronger stand when dealing with public concerns about wildlife preservation near airports.

It has been interesting to note that three aircraft crashes in the last year have been directly or indirectly attributed to birds by Transportation Safety Board investigators. The accident report for the 1994 Fort Frances crash concluded that the garbage dump near the airport was the likely source of the birds that were struck by the aircraft. In a recent fatal crash near Sandspit, British Columbia, investigators surmised that the pilot stalled the aircraft while attempting to avoid a Bald Eagle. On February 24, 1994 a small general aviation aircraft disappeared from radar while flying over Lake Ontario, near Toronto. Investigators suspect that a gull penetrated the windshield and blinded the pilot. Bird strikes have largely been dismissed in crashes of otherwise undetermined cause during the past few years, and it is encouraging to see that bird strikes are being given more consideration lately. It is also encouraging to see that Transport Canada System Safety personnel have circulated a bulletin advising helicopter pilots to wear helmets and face shields to minimize injuries if birds are struck, and have demonstrated a willingness to conduct System Safety Reviews of potential bird hazard issues.

Probably the most encouraging development of late is the interest shown by the waste disposal industry towards resolving bird hazard issues. Company representatives from two large waste system companies, Laidlaw and BFI, have willingly participated in Bird Strike Committee Canada meetings, with a view to learning more about the impact their operations may have on aircraft safety. Without any regulatory influence, BFI has hired a consultant to study the potential impacts one of their proposed landfill sites might have on safe aircraft operations at Winnipeg International Airport, and their goal is to have the consultant design a management plan in conjunction with Transport Canada staff to ensure that the facility is operated bird-free.

16-CONCLUSION:

Although it is tempting for us to conclude that the increase in reported strikes during 1995 or the apparent increase in interest shown by the aviation community is the result of Transport Canada's bird strike awareness program, it is safer to conclude that there is an increase in attention being devoted to the issue of bird hazards to aircraft in Canada. As with many other broad spectrum issues in society, a cost effective means of making progress can often be achieved by implementing an intensive awareness campaign, thereby involving all stakeholders in resolving the issue.