Rediscovering Leadership by Advancing Safety at Canada's Airports

A discussion on Transport Canada and Aviation Industry Leadership in Airport Wildlife Management

Bird Strike Association of Canada
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Background

Canada has a long and prestigious history in bird strike mitigation since air travel blossomed in the 1950s. The Government of Canada directed the National Research Council to establish the Associate Committee on Bird Hazards to Aircraft long before any other country even recognized the need for such a body. This committee morphed into the Bird Strike Committee of Canada co-chaired by the Department of National Defense and Transport Canada (TC) for a couple of decades. TC then efficiently chaired the Bird Strike Committee until Bruce MacKinnon, TC Wildlife Specialist and the long-time chair of BSC, died tragically in 2009. Even before Bruce's death, TC was moving away from "hands-on" assistance and leadership for airports in wildlife management. Today, TC has retreated to the role of regulator. However, regulations alone are inadequate to provide adequate guidance needed for effective airport wildlife management (AWM) in Canada. And the regulations currently in place fall short of the regulations needed to insure that airports have effective wildlife management programs.

Leadership

The lack of TC substantive support for AWM, or for the wildlife strike community in general, results in a major gap in public safety. The Bird Strike Association of Canada (BSAC) was formed in 2009 to fill the void left by the loss of TC leadership in the field of airport wildlife management and to provide support for the industry. Since then, TC has recognized the BSAC as the Bird Strike Committee of Canada as per the ICAO recommendations that each country maintain a bird strike committee. As such, we believe that it is our duty to point out that wildlife-aircraft strikes continue to be a growing risk to aviation safety in Canada.

The governments of other countries have demonstrated growing leadership in the field of wildlife strike mitigation. The closest example is the United States, where the Federal Aviation Administration (FAA) is the regulator, but also plays a more hands-on role with airports by providing regulatory guidance, data collection services, research, partnerships, and outreach. The FAA continually works with airports to encourage better strike reporting, provides financial support for airports to conduct wildlife hazard assessments, funds research through the Airport Cooperative Research Program and a fully staffed Animal Services Research Station in Sandusky, Ohio. The FAA funds two staff from the US Department of Agriculture to maintain the national strike database which is made available to the public, fully funds a team from the Smithsonian Institute (to conduct DNA analysis and feather identification on strike remains to insure that all species that

have been struck are identified whenever possible), produces Advisory Circulars and CertAlerts that provide specific guidance to airports on wildlife hazard issues, and has entered into a number of partnerships to assist in further outreach and airport assistance. The FAA also identified standards to meet for all professionals providing wildlife services at airports, direction on the development of Wildlife Hazard Assessments, Airport Wildlife Management Plans and recurrent airport wildlife training.

Costs of the Safety Gap

The burden of filling the aforementioned TC public safety gap has been thrust almost entirely on airports, many of which are ill-prepared to shoulder this burden due in part to lack of understanding of the complexity of wildlife management and in part because of the relatively lax standards set in the Canadian Aviation Regulations (CARS). BSAC believes that ignorance or lax standards are not excuses for jeopardizing public safety.

Furthermore, Canadian airports are expected to manage this aspect of air safety entirely out of their own pockets. While security at airports is managed by a Crown corporation (the Canadian Air Transport Security Authority (CATSA)) that is fully funded through an Air Travellers Security Charge, no such arrangements are available for safety related to wildlife hazards despite the fact that Canadian airports pay Transport Canada over $250 million annually in rents. Other safety programs that benefit the public good are completely funded by the federal government out of general revenue (e.g., Coast Guard). Currently, TC only provides some wildlife-related assistance for fencing (generally for security purposes and largely inadequate as wildlife fencing) at regional airports on approval of an application.

Standards

BSAC believes that it is in the interest of the federal government and all airports in Canada to adopt and follow a set of sufficiently high standards in order to minimize risk to the flying public, airline personnel, the general public and property. Such standards would provide all airports that meet them with the certainty that they have an AWM program that will withstand scrutiny with respect to liability and the moral imperative of adequately protecting life and property. We do not believe that simply meeting the current standards in the CARs are sufficient for most airports to achieve the standards needed to satisfy the level of safety required with respect to wildlife hazards to aircraft in a court of law.

We believe that BSAC has the expertise and imperative to make a critical contribution to assist TC in setting and maintaining standards for AWM in Canada to fill the current gap. Transport Canada is in a position to make a positive contribution in this area through effective regulation, industry education and on-going support for airports. Only by setting sufficiently high standards can we be confident that the risk of wildlife-aircraft strikes is mitigated appropriately and consistently at airports across the country. We believe that the public and airlines expect no less.

Airport Wildlife Management Plans

The lack of oversight and enforced standards result in some major gaps in safety at many airports in Canada. While many airports are required to develop an AWM plan, anyone, regardless of qualifications, can prepare the plan. The lack of comprehensive standards for AWM plans are another issue. There are no standards for data collection, risk assessment methodology and wildlife risk mitigation strategies. There is no requirement for surveys on wildlife presence and movements at and near airports to form the basis of a hazard assessment. These should be required in all AWM plans and should be conducted for at least 1 year to adequately assess the degree of hazard present and that needs to be addressed in the plan. Without a suitable assessment of the hazards, AWM plans are deficient from the outset. Most AWM plans are not operational documents and simply end up on the shelf. Furthermore, even though required by regulation, the plan under normal circumstances, is not submitted to TC for review and approval. Plans are subject to review during an audit, but then only in as much as the airport is audited against the plan, even if the plan is substandard. TC auditors are not qualified to assess the adequacy of individual plans and as a result consider them to be adequate as long as they contain mandatory components. Furthermore, without adequate data upon which to base the plan, auditors with a knowledge of wildlife management would still not be able to properly audit an airport's wildlife program. The current environment in which airports prepare a plan which is seldom reviewed and operate according to their plan gives airports (and TC) a false sense of security that they are operating a safe and effective AWM program when in fact they may be falling woefully short of industry standards and will, of course, be liable for their shortcomings.

Training

There are two other major deficiencies in the current operating environment set by regulation in Canada. All persons that have duties in respect of the AWM plan are required to receive training in a list of topics outlined in CAR 322.307. Many operations personnel conduct wildlife control activities without this training and those that are trained have training that may be only 1-day long in a classroom. Because the regulation is vague, it allows training to be minimal and ineffective. A couple of examples will illustrate substandard training considered to be adequate under CARS 322.307. Let us consider item *(g)* any matter covered in the *Wildlife Control Procedures Manual* (TP 11500) which sets out the variety of control methods currently available. One trainer presented all the methods listed in this document as equal in effectiveness because he had no idea of what worked and what did not work. Although this would meet the regulations, it is of no help to the airport or the personnel the airport sent to be trained. Another trainer did not know one piece of equipment from another and had to ask the trainees the names of the equipment being used. Other courses have emphasized lethal control simply because the trainer was not proficient in the use of alternative methods that are more effective. One side note, it is also important that regional TC staff, especially those doing audits of wildlife programs at airports receive suitable training in AWM.

A major problem is that training can be conducted by anyone, even someone who has not been trained. Most training is only classroom training which is largely inadequate as stand-alone training to prepare a person to be effective on the airfield. An individual is required by regulation to be re-trained every 5 years, but receiving the same introductory training over and over again is considered to be adequate. Clearly, training standards need to be set including the minimum level of qualifications of trainers. We believe that recurrent training every 5 years is inadequate. Regulations in the USA require training every 3 years. However, consider that firefighters train repeatedly and consistently to achieve a very high level of proficiency to safely and effectively deal with hazardous situations that occur rarely. Why then would we not want our airport wildlife management personnel to receive nearly the same level of training to mitigate hazardous situations that occur regularly (in some cases daily)?

The Need for Data

Complete, accurate and consistent data are essential not only for Safety Management Systems (SMS) but also to evaluate risk and the effectiveness of AWM programs. However, there are no Canadian regulations, standards or guidance for the collection of essential data other than strike data. Transport Canada needs to provide leadership, in the form of guidelines for data collection, to ensure standardized data are collected. Standard guidelines would allow airport operators, inexperienced in wildlife data collection, to build their data collection programs and conduct meaningful assessments of wildlife hazards and risk. This guidance must also come in the form of good leadership in data management. The national strike data base is of questionable value because of the lack of consistent reporting, lack of critical review and follow-up of strike records resulting in missing, incomplete, erroneous and duplicate (or more) records. The lack of timely reporting of strikes and adequate qualified staff oversight of the data base due to time constraints exacerbates the problems. Inadequate features of the current data base undermine the ability to use the data for SMS purposes and our ability to assess strike hazards on a national basis.

Initiating Dialogue Toward Regulatory Change

To address these major issues in AWM, BSAC is willing to engage with TC to develop Canadian standards for AWM as the US and EU have provided for their industry. Putting Canada on a course to fill this critical safety gap is essential if Canada hopes to be considered a “developed” country with respect to AWM and to enhance safety at Canada’s airports. We used to be the leader in the field of mitigating wildlife hazards to aircraft. However, we have fallen so far behind we are no longer even following countries like the US or the EU, the very countries that we helped get started with their bird strike committees.

Regulatory change is a starting point to lay the groundwork for improved airport wildlife management in Canada. However, what is also required in Canada is leadership and engagement by TC in AWM, especially for small and mid-sized airports that have

essentially no expertise in wildlife management. BSAC has provided a preliminary analysis of CARS related to wildlife management that introduces most of the needed changes and additions to the existing regulation. By initiating dialogue with regards to CARS, our goal is to begin a meaningful process towards revising and updating the regulations.

CARS 302 DIVISION III

302.303 Most importantly, missing from the regulations is a statement similar to that in the FAA's FAR 139.337a: "each certificate holder shall take immediate action to alleviate wildlife hazards whenever they are detected." However, it needs to go further by stating that the airport is responsible for continually monitoring the aerodrome during all hours of operation for hazardous wildlife and will take immediate effective action to alleviate wildlife hazards whenever they are detected.

Currently regulations require airports to keep records of all strikes and report to Transport Canada. Because airports do not strike birds (they only recover carcasses or check for struck animals), reporting should also be required by pilots, airlines, aircraft maintenance staff and NavCanada.

Strikes currently need to be reported within 30 days or annually. Strikes should be required to be reported within 3 days of the event and Transport Canada personnel should check each strike reported for completeness (and consistency among multiple reports of the same strike) upon receipt. This would allow TC staff to gather additional information if necessary while the information is still current. Many strikes are reported through CADORS. However, the CADORS platform is not set up for detailed strike reporting. Changes either to CADORS or mandating NavCanada to use the TC strike reporting form would be desirable.

Reporting the species of animal struck should be mandatory when remains of an animal are found. This is the primary data required to establish risk and conduct SMS. Because few airports have the expertise to accurately identify struck animals to species, whenever whole or substantial remains are found, the operator should be required to submit photo evidence according to protocol set out in http://www.canadianbirdstrike.ca/sites/default/files/bulletins/Bird_Strike_Photograph_Protocol_BSAC.pdf . When unidentifiable remains are found, the operator should be required to submit those remains to the DNA laboratory for identification. The cost of analysis by the DNA laboratory should be borne by TC (this is a relatively minor cost to TC, but seems to be a substantial stumbling block for airports).

302.304 Currently, the mandatory risk analysis is not required to be based on data. There needs to be a requirement to conduct a wildlife hazard assessment including conducting surveys over the course of a full year to provide the data on which a hazard assessment is based. Guidance material provided for risk assessment by Transport Canada is significantly flawed and should be replaced by more appropriate methods.

302.305 Airport Wildlife Management plans are required by regulation to be submitted to the minister. However, those plans that are submitted are submitted to the regional offices of TC. Because most regional Transport Canada staff do not have adequate knowledge of airport wildlife management issues, they cannot critically review the plan, and during audits, they only insure that the airport is doing what they committed to do in the plan, even if that is inadequate. Because plans are not reviewed unless issues arise (at which time the damage generally has already been done) most airports believe their wildlife management programs are adequate to address safety even when they are not. All AWM plans should be reviewed by qualified airport wildlife biologists who have had airport operational experience. The airport then should be required to modify their AWM plan until it meets TC approval at a technical level.

302.306 item (f) "set out a procedure to ensure that all endangered or protected wildlife at the airport are inventoried". It is not the place or likely within the expertise of the airport to "inventory" endangered wildlife, The regulations rather should address the fact that these species should not be killed unless there is an imminent risk of a strike. Also, because all but a few introduced species are "protected", they are required to be "inventoried". Because there is a difference between "inventory" and "monitoring", it would be more realistic to state that airports are required to monitor abundance of wildlife on the airport on a weekly (or some regular and relatively frequent) basis.

Item (h) specifies that the plan must provide details of any wildlife hazard awareness program. However, it should state that there must be a wildlife hazard awareness program for all operational staff and should include measures to insure adequate and timely reporting by staff.

302.307 As described above, training "at least" once every 5 years is inadequate. It should be "as least" 3 years and more frequent, regular, ongoing training is recommended. Transport Canada should then provide, or commission, such training opportunities. On-line courses for ongoing training are recommended. The attendance at a Bird Strike conference/workshop should be considered as "on-going training". There should be a recognition that initial training should involve both classroom and in-the-field training and should be a certain length – at least 2 days and preferably 3 days conducted by a qualified (certified) trainer. Initial training would not need to be repeated. Recurrent training should cover additional issues and areas at greater depth than the initial training.

The qualifications of the trainer need to be addressed. Transport Canada should certify trainers. Trainers should have a solid basis in wildlife biology and have operational-level airport experience.

STANDARD 322 Division III

322.302 The list of species in descending order of risk as presented in this regulation is severely flawed. For example, sparrows, crows and swallows are not more hazardous than herons, turkeys or cormorants as is indicated in the regulation. The list should be

replaced with the hazard matrix developed under contract to Transport Canada as presented here:

Level of Risk	Characteristics	Illustrative Species
Level 1	Very large (>1.8 kg), flocking	Swans, Geese
Level 2	Very large (>1.8 kg), solitary, or Large (1-1.8 kg), flocking	Great Blue Heron, Bald Eagle, Mallard, Glaucous-winged Gull, Snowy Owl
Level 3	Large (1-1.8 kg), solitary or Medium (300-1000 gm), flocking	Green-winged Teal, American Wigeon, Red-tailed Hawk, Rock Dove, Northwestern Crow
Level 4	Medium (300-1000 gm), solitary Small (50-300 gm), flocking	Northern Harrier, Barn Owl, European Starling
Level 5	Small (50-300 gm), flocking Very small (<50 gm), flocking	Killdeer, Dunlin, swallows
Level 6	Very small (<50 gm), solitary	Sparrows

Not included in the standards/regulations are the following:

1. Wildlife control should be accomplished through active patrolling of the airfield by trained staff. Reliance on propane canons, models or other stationary un-manned control equipment for primary control is inadequate to ensure safety.
2. The number of birds struck should be reported as accurately as possible. Currently the Transport Canada data base and reporting form are designed after an ICAO format that puts numbers in categories (1, 2-10, 11-100, 100+). However, for risk assessment and SMS, accurate numbers are critical. This should be changed on the TC reporting form immediately.

Summary

While this discussion document identified the general areas where safety gaps occur related to airport wildlife management and some level of detail is provided to support those discussions, AWM is complex and an approach to set regulations and then abandon airports to their fates is doomed to failure. Throughout the regulatory and compliance-monitoring approach, there needs to be continual leadership and support provide by TC. Safe skies from wildlife hazards does not just happen, there is no single formulaic solution, nor is there the widespread expertise available to draw on at the local and regional levels. In this discussion paper we have outlined some of the basic and essential needs. These are listed below:

1. TC must resume a hands-on role in AWM including appropriate programs, research, training, etc.;

2. The federal government should provide funding assistance specifically for AWM programs, especially at small and mid-sized airports;
3. There need to be improved standards for AWM and these should be reflected in regulation. Current standards need to be enforced (e.g., plans submitted to the minister, identification of all wildlife strike remains);
4. Wildlife Hazard Assessments must be conducted using adequate data and, where AWM plans are required, those need to be reviewed and approved by TC before they form the basis of AWM programs at airports;
5. Standards and certification need to be developed for professionals recognized to perform hazard assessments, AWM plans and training;
6. Standards need to be developed to ensure that mandatory initial training is adequate and more effective recurrent training at more frequent intervals should be required;
7. Strike reporting should be required by all parties involved in wildlife strikes within 3 days and a better strike reporting system should be developed. Strike data need to be monitored by TC for accuracy and completeness and the data base needs to be "clean" and accurate for use in SMS and other safety analyses;
8. TC needs to provide guidelines for airports as to what data are required to be collected for wildlife hazard assessment and AWM monitoring and provide direction as to how to collect and report standardized data; and
9. Airports need to be required to continuously monitor hazardous wildlife on the airfield and take effective actions to alleviate the hazards in a timely manner.

TC and the aviation industry cannot afford to be complacent in AWM. The role of TC and BSAC must be to provide the leadership and guidance needed to assist in the establishment of clear guidelines for AWM that will insure we have among the best programs in the world – public safety demands as much and the future of Canada's airports in attracting air carriers is also dependent on providing a safe operating environment.