Airlines’ pilots’ perceptions concerning recommended practices that reduce the risk of bird strikes

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AIRLINES’ PILOTS’ PERCEPTIONS CONCERNING RECOMMENDED PRACTICES THAT REDUCE THE RISK OF BIRD STRIKES

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OVERVIEW

Introduction

Purpose of the research

Literature Review

Population & Sample

Findings

Conclusions
Bird strike risk management is a defense in depth:

- Airplane certification;
- Actions by airport operators;
- Standard regulation by ICAO & National regulators;
- PROCEDURES BY CREWMEMBERS!
- Pilots are always in contact with all sort of hazards;
- Pilots play a big role in managing the risk of bird strikes;
- Pilots are usually the last persons who can avoid an accident;
PURPOSE OF THE RESEARCH:

- Assess the perceptions of a selected group of airlines pilots in Brazil and their knowledge of recommended practices that could reduce the risk of accidents due to bird strikes.
SMS – Safety risks that are controlled to a reasonable degree are acceptable in an inherently safe system;

Risk – likelihood of hazard consequences in terms of severity and probability;

The rate of exposure to hazards / unsafe conditions may be viewed as another dimension of probability.

\[ R = P \times S \]
Training is of paramount importance to effective job performance;

- Equip employees with skills, knowledge and motivation to perform their duties safely and effectively;

- Safety training within an airline must ensure that personnel are competent to safely perform their duties;

- Many pilots are not trained in bird-strike avoidance and this is not a well developed subject either;

- Management of bird hazard is primarily an airport’s responsibility; however there are actions to be taken by carriers and pilots to reduce the risk;
Operators should concentrate efforts:

- Standard Operating Procedures (SOPs), employee training and awareness, and reporting of bird strikes;

In the past pilots were passive participants in bird hazard mitigation. This situation is no longer acceptable!

- Pilots are required to assure the safety of their flights;

- All flights should be planned and executed accordingly to proven bird-strike risk reduction principles and techniques.
There are effective mitigation actions that could be adopted by pilots to reduce the risk (Probability X Severity) of bird strikes, as suggested by:

- Cleary & Dolbeer, 2005;
- Dekker and Buurma, 2005;
- Dolbeer, 2006;
- Eschenfelder, 2005;
- Eschenfelder, 2006;
- Flight Safety Foundation, 1989;
- MacKinnon, 2004;
- Mendonça, 2008)
The survey questionnaire was conceived with the aim to assess pilots` knowledge regarding best practices that reduce the risk of accidents due to bird strikes.
**FINDINGS**

- Questionnaires sent out - FEB 11;
- Last response – JUN 30;
- Considered usable – 296.

**Personal Background**

- 69% working in the aviation environment for more than 10 years;
- 47% were captains;
- 28% certified by CENIPA (Safety Course);
- 82% attended at least one safety course;
Pilots agree that arrival and departure controllers are indispensable members of the bird-strike risk-management team;

Pilots are not sure that heating the windshield during preflight is a bird-hazard risk-management proven technique;

During preflight reviews crews should always consider course of actions that may be necessary in case of bird strikes;

Pilots should check the runway for birds before commencing takeoff;

The use of landing lights during takeoffs, landings and whenever flying below 10,000 Ft is a well known technique by pilots;
Many pilots (57%) do not select engine ignition on for takeoff to improve flameout protection in case of a bird strike;

Pilots agreed that they should plan their flights in order to operate at the highest altitude ASAP to reduce their exposure;

Pilots (26%) are concerned about reducing the speed in high-risk areas because of an impending stall after a maneuver to avoid birds;

Pilots highly agreed that they should listen to ATC and other aircraft so as to get current information about birds;
Pilots sometimes suffer pressure from the company to keep their flights as scheduled:

- Pilots (43%) will not delay landing until conditions are safer;
- Pilots (49%) will not ask ATC for another runway or for a diversion to another airport in order to prevent bird strikes;
- If birds are encountered during approach, pilots (30%) will not consider a go-around and a second approach.

According to some pilots, due to high concentrations of birds near certain airports, delaying the approach and/or landing procedures may increase exposure to birds, thus augmenting the risk.
Pilots are motivated, proactive, and somehow committed to report hazards; however, 10% of respondents do not agree with this cornerstone of the safety process:

- Guidelines to report bird hazard should provide training orientation;
- The bird hazard report should be better divulged and made available by many means;
- Situations that are to be reported should be clear;
- The report should be easy to comprehend.
“Since pilots should comply with ATC procedures, some recommended techniques are impracticable”;

“Due to fuel restrictions, airport slots, ATC aircraft congestion management some procedures are almost impossible”;

“There are constraints that crewmembers face daily, for instance, commercial ones (especially time pressure), which hinder pilots actions to avoid bird strikes”;

“Information pilots receive regarding bird activity close to airports has no credibility since it is a continuous broadcast of recorded noncontrol information”.
FINDINGS

- Reasonable explanations for the previous findings (pilots did not agree to some degree with best practices towards reducing the risk of bird strikes):
  - None of these procedures were presented during pilots' initial training;
  - Only 37% of respondents agreed that most of these procedures are reviewed during recurrent training in their companies.
- Pilots are important stakeholders in any safety program;

- Many participants lacked the necessary knowledge about situations and procedures they should adopt to reduce the risk of bird strikes;

- Employees may not follow work practices if they have not been instructed in the proper procedures;

- Without the skills and motivation it is not an easy task to get pilots to be proactive and motivated;

- Pilots demonstrated good knowledge of the risk management process;
A paramount element in a safety program for bird hazard is education and training;

Training should take place in many ways and must be a continuing and never ending process;

In organizations with superior safety records, training is serious business;

An array of mitigating actions and recommendations are available to stakeholders of the aviation industry, especially airport operators; however there is almost no training for pilots regarding best practices that could reduce the risk of aircraft accidents due to bird strikes.
Air operators should focus their efforts on the development of bird-hazard Standard Operating Procedures – SOPs, which should be included in company publications addressing different areas, among them initial and recurrent training for pilots;

- It is clear that pilots play an important role towards reducing the risk of bird strikes. Thus, through education and awareness they will be motivated and really prepared to face the bird-hazard problem.
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