AIRLINES´ PILOTS´PERCEPTIONS CONCERNING RECOMMENDED PRATICES THAT REDUCE THE RISK OF BIRD STRIKES

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OVERVIEW

Introduction

Purpose of the research

Literature Review

Population & Sample

Findings

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INTRODUCTION

- *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.

Literature Review

- 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 ;

$$R = P \times S$$

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

Literature Review

- 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;

Literature Review

- **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.**

<u>This situation is no longer acceptable!</u>

- **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 .**

Literature Review

- There are effective mitigation actions that could be adopted by pilots to reduce the risk (Probabilty 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)**

Population and Sample

EXPERTS

PURPOSIVE SAMPLE

- The survey questionnaire was conceived with the aim to asses 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;

FINDINGS

- 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;

FINDINGS

- 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;

FINDINGS

- 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.

FINDINGS

- Pilots are motivated, proactive, and somehow commited to report hazards; however, 10% of respondents do not agree with this cornerstone of the safety process:
  - **Guidelines to report bird hazard should provide trainiing 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.**

ADDITIONAL COMMENTS

- *“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.

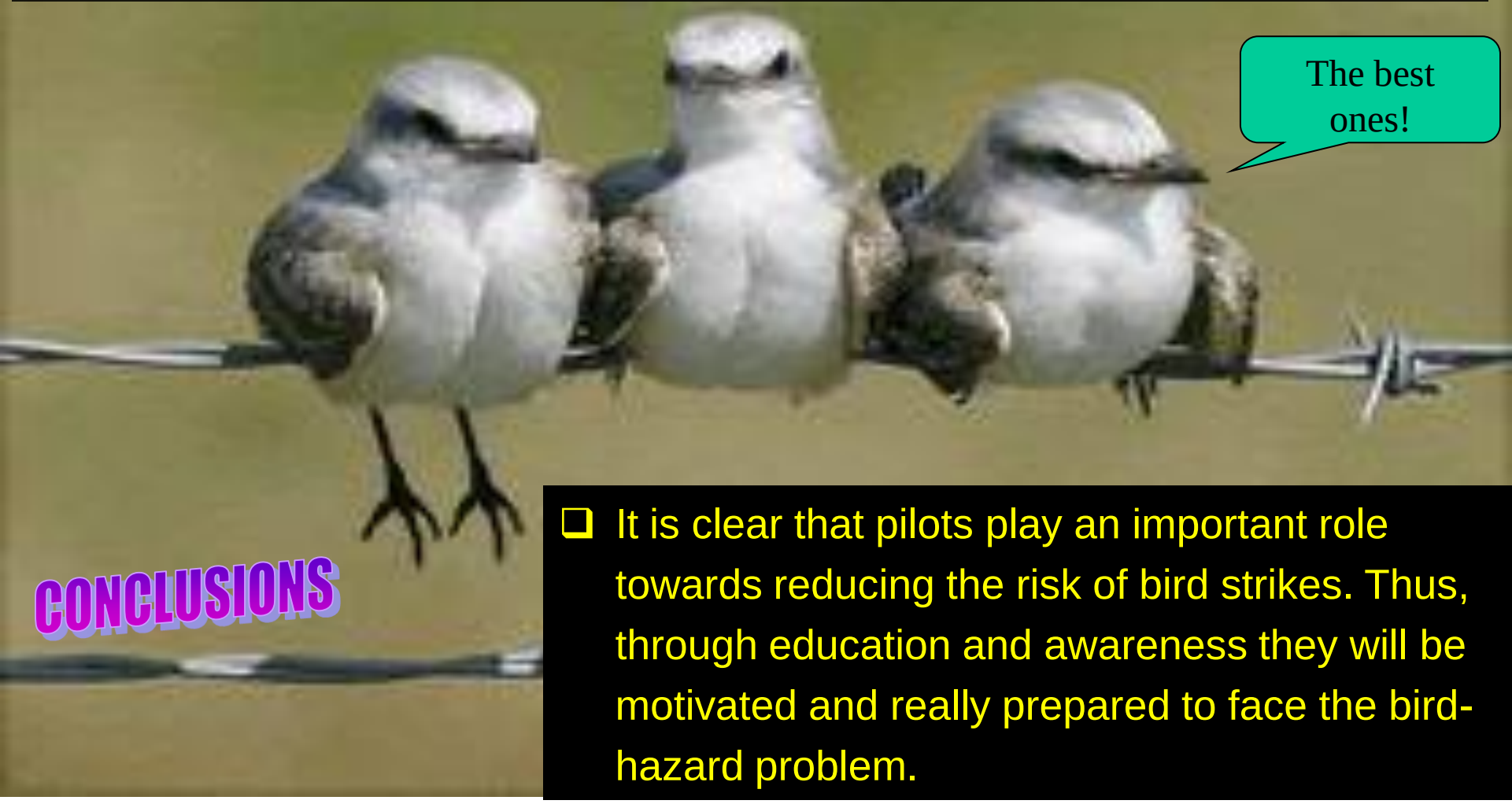
CONCLUSIONS

- 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;

CONCLUSIONS

- 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;



CONCLUSIONS

- 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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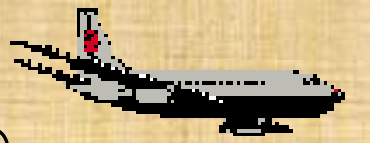

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