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Pilots: A Bird's Eye View

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When first selected for this presentation – had no idea

Someone suggested why not be a typical pilot, selfish and make it about yourselves?

Hence the title was created, but still with a conundrum - which made the pilot more prominent!



What is IATA?

- International Air Transport Association, founded in 1945
- Trade association for the world's airlines – 256 members
- Mission:
 - to represent, lead, and serve the airline industry
- Vision:
 - to be the force for value creation and innovation driving a safe, secure, and profitable air transport industry that sustainably connects and enriches our world



**First things first - a recap of who I work for



How I got here ...

- Pilot career only one envisaged
 - Varied between airlines and corporate
 - Allowed me the privilege of sampling birdstrikes all around world
- Stopped flying at 55 and joined IATA
 - Move to Montreal / Rigaud
 - Home affords phenomenal views of bird wildlife



* * For a start I didn't get out of the way of the hovering finger fast enough

1. For me, being a pilot was the only career

- I knew from a young age that daily routine did not gel with my character, and like all pilots, I instinctively knew the world should revolve around me – no brainer!
- I was very fortunate, a choice of the military / airline? / Chose airline because ...
- Lucky enough to join a pilot cadet training scheme with BOAC / BEA
- *This was where I encountered my 1st bird strike / We used a converted Comet 4 sim for procedures training (MPL) one particular day ...*

2. Career almost spread 50/50 in airline & corporate

3. This was fortunate because ...

4. Move to Montreal from Asia

- Live on the lake and get to watch a lot of wildlife

Sights from our deck ..



Some of the multiple dozens of pictures the wife takes!

- Fascinating to watch, many birds, with no collisions and no Air Traffic Controllers or TCAS?



Ideal situation for pilots / operators



70 YEARS
1945-2015
Flying better. Together.

15th Annual North American Bird Strike Conference

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15 September 2015

** Perhaps this is how pilots tend to see their world, and operators would like to see their world

- a nice cocoon or bubble around their aircraft that protects it nicely from all threats and keeps them flying at all times

** This is mainly due to their precious cargo and precious asset - aircraft costing around the \$150 - \$200 million / largest costing \$300 million and more

- Aircraft only generate revenue for their operators when airborne, so we prefer to keep them in the air!
- Bird strikes seriously frowned upon as most occasions the incident will be followed by an expensive period of repair 'down time'
- On top of which aircraft parts are very expensive, for example an engine fan blade can cost around \$10K
- Unfortunately, to my knowledge, protective aircraft shields have yet to be invented, so we have the reality instead ...



Then reality kicks in...



70 YEARS
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AND I GUESS THIS IS WHY WE ARE ALL HERE TODAY!



A Few Facts

- Bird strikes have always been a threat to aviation safety
- Most bird strikes occur in/around the airport environment
- The majority of bird strikes cause no more than minor damage
- Not all birds pose the same hazard
 - Approx 75% of bird strikes occur on wing and engine
- Bird strikes represent less of a hazard to aviation than other well-known threats



1. Bird strikes have always been a threat to aviation with the odd bird strike leading to a serious accident
 - Even the Wright Brothers managed one back in 1905
2. Although bird strike events may occur during any phase of flight they are most likely during take-off, approach and landing
 - This highlights the need and importance for wildlife management programmes at and around airports
3. Luckily, the majority of reported bird strikes have little or no effect on continued safe flight with only a few events causing a need to land
 - That stated, bird strikes can have significant economic and safety consequence on flight ops
4. Clearly different birds present a different threat individually
 - But the potential for increased severity and frequency of events is anticipated to rise due to both the increase in flights and the rising bird populations
5. However, for pilots there are other more notable threats, such as – Loss of Control (AF 447) / runway excursions / CFIT

Examples of bird strike outcomes ...



Some examples

As an operator, all you can do is...

- Create awareness among their pilots
- Teach them how to assess the situation
- How to react



** So what can operators do to keep their aircraft / their precious asset / their hard-earned capital / their revenue streams safe from these very dangerous winged creatures?

1. Many introduce training programmes and provide guidance to their crews:
 - on bird avoidance
 - removing the many common misconceptions about birds such as:
 - they don't fly at night flying / they don't fly in poor visibility / They **can** detect landing lights or coloured aircraft spinners / radar etc.
2. Crews are trained to be more vigilant if an airport has known or reported bird activity (so please communicate)
3. Sometimes this training has remarkable results and outcomes (Hudson: lost both engines)

As an operator, all you can do is...

➤ or not react!



..... Other times not so positive

- Aircraft aborted takeoff after V1 (with N-1 engine was recovering)



Indications to the pilot of a bird strike ...

- Visual
- Tactile
- Auditory
- Olfactory
- Engine indications
- Flight instruments
- Other airplane systems or structure

"Strategies for Prevention of Bird-Strike Events" – Boeing Aero, 2011



1. Visual: The bleeding obvious - see the birds in close proximity to the airplane or colliding with the airplane, and any other visible evidence
2. Tactile: Vibration of airframe or engine, thrust loss, increased drag, abnormal airplane handling characteristics.
3. Auditory: Noise of strike or noise attributed to the resulting damage - engine surge, compressor stalls, an increase in aerodynamic noise
4. Olfactory: Smoke, odor, or cooked bird smell
****4D presentation including smell, but... 1) too soon after breakfast or 2) ran into tech difficulties****
5. Engine indications: Reduction or fluctuation in primary power parameter, abnormal fuel flow, abnormal engine vibration
6. Flight instruments: Loss of data or erroneous indications arising from damage to air data sensors or angle-of attack sensors.
**** Example of where you might end up measuring the dead bird's temperature instead of the OAT ****
7. Other airplane systems or structure affected directly by a strike: Damaged communications or navigation antennas / radome / landing lights, etc



What is IATA doing?

- Encourage operators to engage with relevant groups
- Encourage more reporting with greater detail
- Operators to have prevention strategies
- Collate the data and provide reports to our airlines
- Ongoing trial project in the LATAM region to identify prime areas of concern



1. Encourage operators to participate in local, regional, national, or international aviation wildlife hazard activities / bird-strike committees or equivalent groups.
2. Encourage reporting - essential to assisting with this problem, some regions are good, others less so
 - We encourage increased reporting frequency
 - Improved accuracy
 - Provide more details within the reports
3. Prevention strategies - have pilots vary their flight operations when in areas of known activity:
 - delay departure
 - use another runway
 - Use idle power in descent
 - Avoid prolonged low level flight (below 2000’)



IATA and our Operators need you

- Operators rely on airport wildlife management teams
- Your work and efforts help us to minimize the probability of potentially dangerous and costly bird strikes

- On behalf of all IATA members, thank you!



1. As you can see airlines rely on your wildlife management activities
2. Your work is essential to assist us in minimizing the risk

On behalf of all IATA members: thank you and I wish you a fruitful conference and enjoyable stay here in Montreal.

