Understanding the trends of wildlife strikes

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Flight Plan

• ICAO wildlife strikes analysis (IBIS)
• SARPs in Annex 14, Volume I
• Airport Services Manual, Part 3 – Wildlife Control and Reduction
• Ongoing work at ICAO
ICAO Wildlife Strike Analysis (IBIS)

STATES REPORTING: 91
STATES OF OCCURRENCE: 105
Reported strikes distributed by Region in which they occurred
When and Where the Wildlife Strikes Occurred
Wildlife Strikes Reported According to Flight Phases

FLIGHT PHASE 2008-2015

- PARKED: 0%
- TAXI: 5%
- TAKE OFF: 31%
- EN ROUTE: 4%
- APPROACH: 33%
- LANDING: 26%
- UNKNOWN: 1%

ICAO/ACI WSHRS, 16-18 May 2017, Montreal
Wildlife Types Frequently Struck

- **UNKNOWN**: 39%
- **PERCHING BIRDS**: 22%
- **SHORE BIRDS**: 11%
- **HAWKS, EAGLES, VULTURES**: 9%
- **PIGEONS, GROUSE**: 7%
- **MAMMALS**: 3%
- **SWIFT, TREE-SWIFT, HUMMINGBIRD**: 2%
- **DUCKS, GEESE, SWANS**: 2%
- **OWLS**: 2%
- **HERON, STORK, IBIS, FLAMINGO**: 1%
Effects on Flight

- Aborted Take Off: 21%
- Precautionary Landing: 49%
- Engine(s) Shut Down: 3%
- Other: 28%

ICAO/ACI WSHRS, 16-18 May 2017, Montreal
Damage to the Aircraft

• The extent of damage to the aircraft was coded for 33,376 wildlife strikes, which is approximately 34 per cent of the total number of strikes reported.

• Of the wildlife strikes for which the damage was coded, seventeen aircraft were destroyed, 600 strikes caused substantial damage to the aircraft, and 1,874 strikes caused minor damage.
Parts of Aircraft Struck

- Tail: 1%
- Rotor: 1%
- Fuselage: 12%
- Windshield: 15%
- Radome: 13%
- Nose: 14%
- Landing Gear: 12%
- Propeller: 2%
- Engines: 13%
- Wing: 14%
- Lights: 1%
- Other: 8%
Parts of Aircraft Damaged

- Tail: 3%
- Rotor: 1%
- Fuselage: 5%
- Windshield: 5%
- Radome: 7%
- Nose: 6%
- Wing: 19%
- Lights: 6%
- Engines: 21%
- Propeller: 2%
- Landing Gear: 5%

Other: 20%
Comparison Between the Parts struck and the Parts Damaged
Global Trend by Data Comparison

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>No. of States Reporting</td>
<td>51</td>
<td>91</td>
</tr>
<tr>
<td>No. of States/Territories of Occurrence</td>
<td>145</td>
<td>105</td>
</tr>
<tr>
<td>No. of Strikes</td>
<td>42,508</td>
<td>97,751</td>
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<tr>
<td>Day Time Strikes</td>
<td>63%</td>
<td>68%</td>
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<tr>
<td>Night Time Strikes</td>
<td>24%</td>
<td>25%</td>
</tr>
<tr>
<td>Peak Month Activity</td>
<td>12% (August)</td>
<td>14% (August)</td>
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<tr>
<td>Strikes during Takeoff</td>
<td>39%</td>
<td>31%</td>
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<tr>
<td>Strikes during Approach</td>
<td>40%</td>
<td>33%</td>
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<tr>
<td>Strikes during Landing</td>
<td>17%</td>
<td>26%</td>
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</tbody>
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For detailed information about 2008-2015 wildlife strike analyses (IBIS), refer to ICAO EB 2017/25, which is available at: www.icao.int/IBIS.
Annex 14, Volume I

• The wildlife strike hazard on, or in the vicinity of, an aerodrome shall be assessed through:
  – the establishment of a national procedure for recording and reporting…
  – the collection of information from aircraft operators, aerodrome personnel….on the presence of wildlife…constituting a potential hazard to aircraft operations; and
  – an ongoing evaluation of the wildlife hazard by competent personnel.
• Action shall be taken to decrease the risk to aircraft operations by adopting measures to minimize the likelihood of collisions between wildlife and aircraft.
Annex 14, Volume I (cont’d)

• The appropriate authority shall take action to eliminate or to prevent the establishment of garbage disposal... unless an appropriate wildlife assessment indicates that they are unlikely..... Where the elimination of existing sites is not possible, the appropriate authority shall ensure that any risk to aircraft posed by these sites is assessed and reduced to as low as reasonably practicable.
States should give due consideration to aviation safety concerns related to land developments in the vicinity of the aerodrome that may attract wildlife.
ASM, Part 3 – Wildlife Control and Reduction

- Comprehensive guidance on the fundamental elements of an airport bird/wildlife strike control programme, including:
  - Assignment of personnel
  - A process to collect and analyze data, using a risk assessment methodology
  - A process of habit and land management and to expel or remove hazardous birds/wildlife
  - A process to liaise with non-airport agencies and local land owners...
ASM, Part 3 – Wildlife Control and Reduction

- Guidance dealing with wildlife other than birds both on habit management and repellent techniques
- Examples of modified procedures for aircraft arriving at and departing airports with hazardous birds/wildlife, for aircraft operators
- Detailed guidance on risk assessment of bird/wildlife strikes, taking account of severity and probability
- Summary of best practices for bird/wildlife management programmes on airports
- Emerging technology and communications procedures
Ongoing Work at ICAO

• PANS-Aerodromes (Doc 9981)
  – Dedicated chapter on wildlife hazard management

• Update guidance in Doc 9137 ASM Part 3
Thank You