

# Wildlife Hazard Education and Training for Pilots ...One Year On!

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# Why Educate and Train?



# Do Wildlife Threaten Aircraft?



**Hudson Has Helped!**

# US Airways Flight 1549

**Date** January 15, 2009

**Multiple** [bird strikes](#) [Controlled ditching](#)

**Survivors** 155 (All passengers and crew survived the accident)

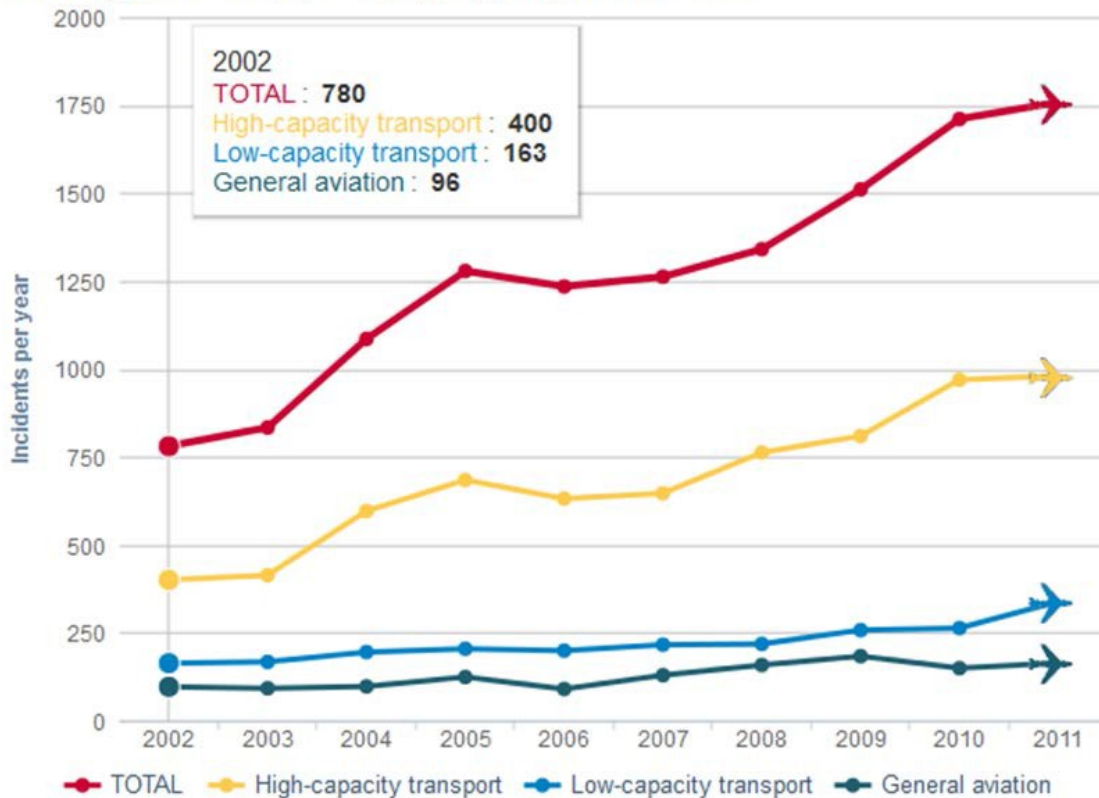


*Capt. C.B. "Sully" Sullenberger,  
the Hero of Hudson River*

# Is there a threat in Australia?

## Birdstrikes at Australian airports

Increasingly, birds and planes competing for space in the skies.



Source: Australian Transport Safety Report, June 2012

The number of collisions between Australian passenger planes and birds and bats has more than doubled in the past decade, despite airports employing extreme tactics to avoid the strikes.

These collisions have caused serious accidents, including the engine failure that forced a US Airways plane to land on New York's Hudson River in 2009.

Source: ATSB

# Pilot Perception

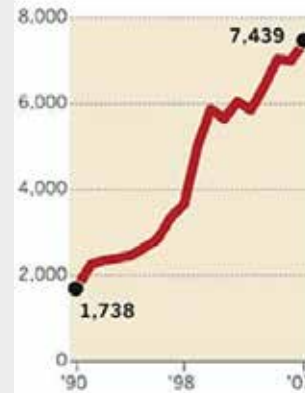
“No Problem-Aircraft Are Certified to Withstand Birdstrikes!”

However, the reality is...

## When birds and planes collide

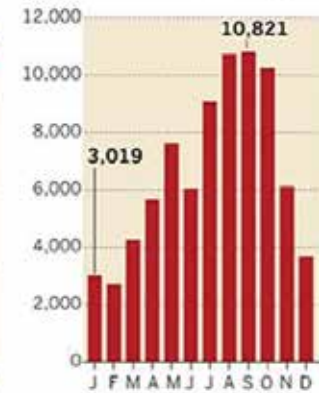
Airplane collisions with birds more than quadrupled from 1990 to 2007. Incidents occur most often in late-summer/fall months and involve no damage. Of all collisions, 85% are with commercial aircraft.

Annual bird-plane collisions



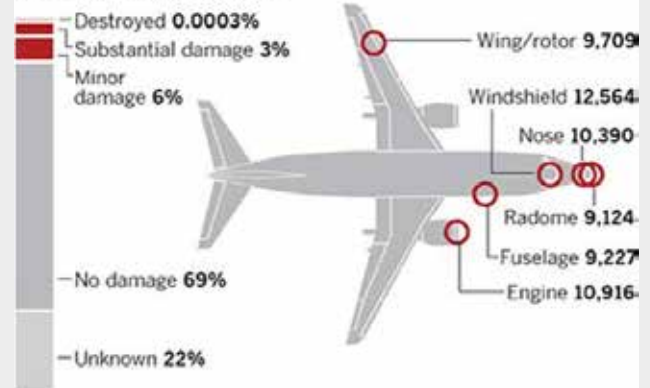
By month

(Based on total collisions, 1990-2007)



## Damage to plane and most common strike areas

(Based on total collisions, 1990-2007)



Strike data include commercial, business, private and military/police aircraft.





B-747 engine-vulture ingestion-Nairobi

**NEW engine standards are being implemented by JAA/FAA-but only for NEW engines**



B-767 gull ingestion-Tel Aviv



MD-11 gull ingestion-Portland, Ore.

# Composite rotating blades

DH-8 composite props vs. Canada geese during landing at Toronto – both engines severely damaged







**B-737 windshield destroyed by goose impact over New York – window spalled on impact showering cockpit with glass**

# It can save lives



According to the DOT IG, wildlife strikes have resulted in at least 24 deaths and 235 injuries in the U.S., and 229 deaths worldwide, since 1988.

...and money



Wildlife strikes have caused nearly 600,000 hours of aircraft downtime and \$1.5Bn in damages annually.

# Discussion for Today

- Underlying Issues
- Recommended Practices
- Educational Video
- Training Modules



# What Are the Underlying Issues?





# Pilots Perception and Subsequent Action

Pilots (Generally) Do Not Fly Through These



Pilots (Sometimes) Do Not Regard These as a Similar Hazard



Is it a bird, is it a plane? ... The number of bird strikes jumped between 2002 and 2011. Photo: Quentin Jones

# Pilots Do Not Receive Education, Training or Examination

## **15. Threat and Error Management (TEM)**

15.1. Explain the principles of TEM and detail a process to identify and manage threats and errors during single pilot operations; and

15.2. Explain the meaning of "threat" and give examples of threats:

- (a) give an example of a committed error and how action could be taken to ensure safe flight;
- (b) Explain how the use of checklists and standard operating procedures can prevent errors;
- (c) Describe how an undesired aircraft state can develop from an unmanaged threat or error;
- (d) Explain what resources a pilot could identify and use to avoid or manage an undesired aircraft, state such as being lost or entering adverse **weather**;
- (e) Explain the importance of ensuring that tasks are prioritised to manage an undesired aircraft state;
- (f) Describe how establishing and maintaining interpersonal relationships can promote safe flight.



Extract from the CASA MOS 61 Schedule 3 Aeronautical Knowledge Standards

# Missing-Wildlife!

Schedule 3

Proposed Manual of Standards

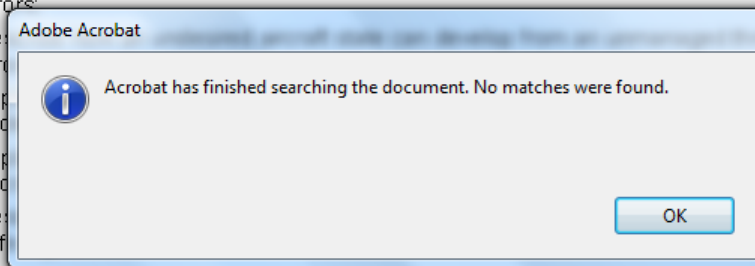
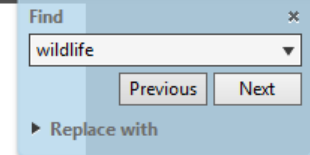
Flight Crew Licensing

## **15. Threat and Error Management (TEM)**

15.1. Explain the principles of TEM and detail a process to identify and manage threats and errors during single pilot operations; and

15.2. Explain the meaning of "threat" and give examples of threats:

- (a) give an example of a committed error and how action could be taken to ensure safe flight;
- (b) Explain how the use of checklists and standard operating procedures can prevent errors;
- (c) Describe the meaning of "threat" and give examples of threats that or
- (d) Explain the meaning of "error" and give examples of errors that or
- (e) Explain the meaning of "violation" and give examples of violations that or
- (f) Describe the meaning of "unsafe act" and give examples of unsafe acts that or



# Operators Do Not Have SOPs or Formalised Training Programs

## V Scope of SOPs

### V.1 General Principles

SOPs should identify and describe the standard tasks and duties of flight-crew for each flight phase (i.e., **what-to-do** and **when-to-do**).

SOPs should be accomplished by recall but critical tasks (e.g., selections of systems and changes of aircraft configuration) should be cross-checked by use of normal checklists (i.e., for error detection and correction), according to the phase of flight.

SOPs should be supplemented by information on specific operating techniques (e.g., adverse weather operation) and by operational recommendations for specific types of operations (e.g., operation on wet or contaminated runway, operation in ETOPS area and/or in RVSM airspace).



# The Remedy=(Draft) Recommended Practices



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## Recommended Practices

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The AAWHG, together with industry, are developing Recommended Practices (**RP**) for aviation Wildlife hazard Management.

The development of these RP documents allows the aviation industry to:

- Utilise the most suitable elements that are available from worldwide practice;
- Capture the unique experiences and knowledge available from our industry; and
- Tailor our practices to meet the conditions that are unique to Australia.