

The John Ernsting Panel

Sharing The Skies Safely Now and In The Future



Air Vice-Marshal Professor John Ernsting



ICASM 2018

BANGKOK



SHARING THE SKY SAFELY

11-15 November 2018 Millennium Hilton Bangkok, Thailand

The John Ernsting Panel

Sharing The Skies Safely Now and In The Future

Panel Overview

John Crowley MD MPH

Dothan, Alabama, USA

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Disclaimer and COI

- This presentation does not represent the views of the US Government.
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- The author has no conflicts of interest to report

Sharing the Skies Safely

A Broad Topic



**Healthy Pilots Make
the Skies Safer**



**Healthy Skies Make
the Pilots Safer**

Sharing the Skies Safely

With Whom or What Must We Share?

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With Whom or What Must We Share?

Insects

Mammals

Birds

UAVs

General Aviation

Military Aviation

Commercial Aviation

Spacecraft

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Insects

Not a common 'safe skies' issue
- Bugs on wing can reduce lift

Insect Hazards

- Blocked pitot tubes
- Bee infestations
- Obscured windscreens
- Cockpit panic



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Mammals

- 327 bat strikes in Australia 1996-2006*
 - 19% caused major aircraft damage
- 1810 bat strikes in USA 1990-2016*
 - Major damage rare



* Civil aviation data

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Birds

ICAO reports
65,139 bird strikes
2011–14

- M. common:
doves and larks
- M. commonly
serious: turkey
vulture



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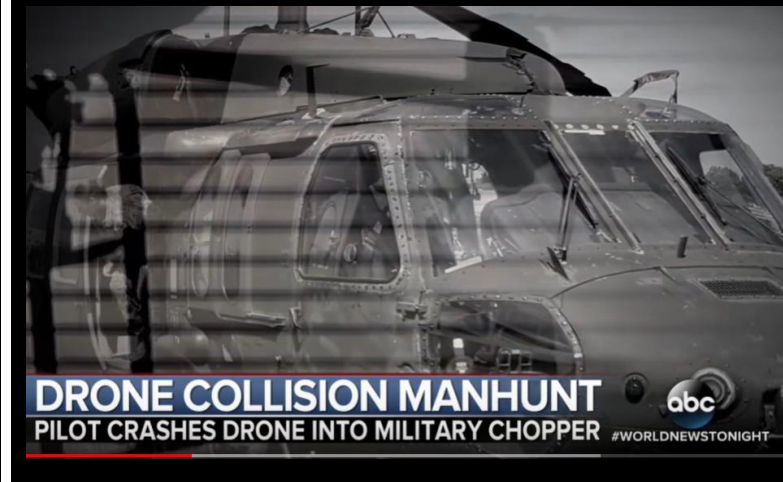
Increasing reports of near misses on short final

Terrorist threat

UAS filling the skies

Swarms

(and increasing injuries)



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General Aviation

Exponential growth predicted

Congested highways in the sky

Controversial



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General Aviation

Military Aviation

Commercial Aviation

Spacecraft

Military Aviation

Airspace
protected and
shared

Vulnerable to
high-tech threats

Manned-
Unmanned
Teaming



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Commercial Aviation

40% growth in commercial aviation by 2035 in US

Projected increased traffic could overload systems

Worldwide programs to modernize



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Spacecraft

Intersects
airspace during
launch and
reentry

Hypersonic and
Subsonic

Safety and Cost
concerns

Transport, Airlines

Space Launches Are Causing More Delays for U.S. Airlines

Justin Bachman, Bloomberg - Jun 27, 2018 9:00 am



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Keeping Commercial Air Travel
and Airspace Safe: European
Problems are Global Issues
R Vermeiren
Medical Service, EUROCONTROL



Sharing the Skies Safely

Now and in the Future

Unmanned Aerial Systems and
Airspace Safety: Sharing A Crowded
Airspace into The Future

M Antunano

Civil Aerospace Medical Institute, FAA

Birds

UAVs

General Aviation

Military Aviation

Commercial Aviation

Spacecraft

Sharing the Skies Safely

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Insects

Mammals

Birds

UAVs

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Military Aviation

Commercial Aviation

Spacecraft

Deconflicting Travel of Aircraft and
Spacecraft Through the US National
Airspace System

J Vanderploeg

FAA Center for Excellence for

Commercial Space Transportation



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