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Advanced UAS Training; Integration of Remote Live Aircraft Crash Investigation with UAS

Scott S. Burgess
Embry-Riddle Aeronautical University, burgesco@erau.edu

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Advanced UAS Training; Integration of Remote Live Aircraft Crash Investigation with UAS

Scott Burgess, Ph.D., CFI/IP, RPC

Associate Professor

Department of Flight, College of Aeronautics, Worldwide Campus

Embry-Riddle Aeronautical University

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- Current Aviation Education and Training (AET/ET) methodologies
- Tech vs. Traditional in AET/ET
- Application: Accident Investigation ET methodology
- Theory and Practice
- Delivery
- Path forward

- Current methods are;
  - Aeronautical Knowledge, Aircraft and Systems Education
    - Face-to-Face (F2F)
    - Online classroom
    - Computer Based Education and/or Simulation
  - Flight Training
    - Actual hands-on
    - Simulation

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- As drones evolve, so must training in new and evolving uses and operation of UAS.
  - System variations and complexities
  - Match OEM training and doctrine
  - Integrate Human Factors
  - Sense and avoid interface
 - New control methods

- This industry requires tech savvy individuals
- Technology has enabled remote learning
- Fidelity increases, enhancing learning
- SBT can advance learning, enhancing safety
- Learning enhanced as "plugged-in" generations captivated by the click

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- Needs; Technology must present high-fidelity delivery in a distributed modality.
- Presentation of materials historically driven by modality
  o Recorded/posted
  o User interface must be supportable and compatible
  o Fidelity can only go so far
  o Utility somewhat affected by learner generation
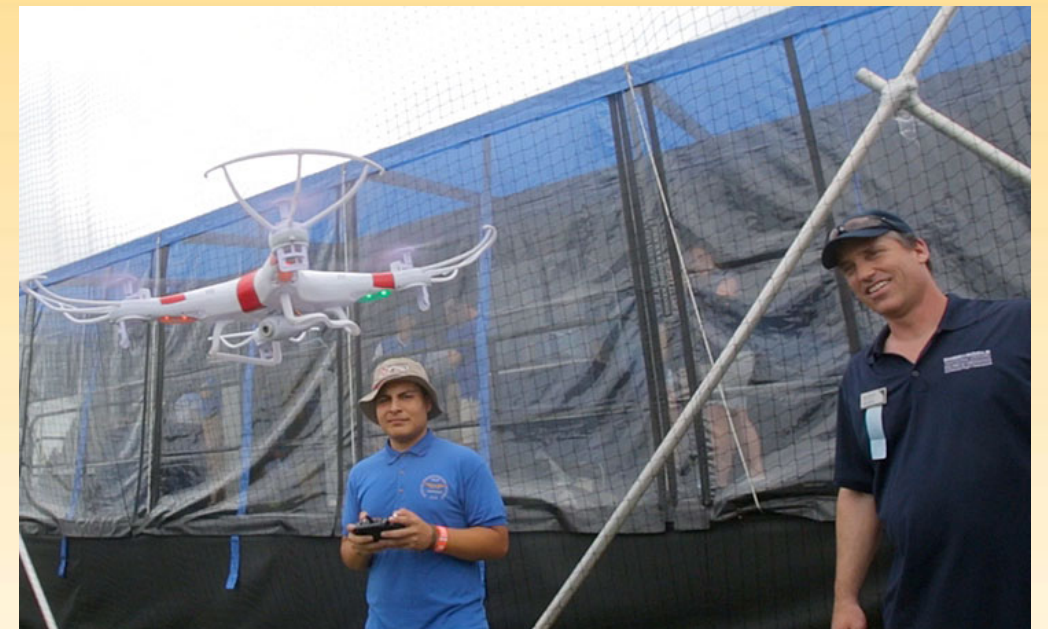
- Let's use UAS in Aircraft Accident Investigation as a discipline to explore

  o Integration of UAS into missions such as aircraft crash investigation are occurring or in development with safety investigators globally.

    - British AAIB
    - NTSB
    - ERAU Crash Lab

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- Specialization in academia for these niche disciplines is essential to pair with technology
- Largely done in F2F setting.
  - Face to face settings traditionally present best opportunity for full fidelity
  - Distributed modalities currently challenged to offer high fidelity
  - KSA should dictate available modality and material presentation means

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- Technology advancements will drive and expand UAS capabilities and uses exponentially

- Beyond visual line of site operations will also evolve use methods
  - College graduates could enter an industry with;
    - BVLOS knowledge and experience
    - Advanced technology comprehension
    - Ready and capable for advanced KSA
    - Experience with RSO

Delivery Modalities

- UAS education and training must maintain the pace of traditional and evolving means of academic delivery
  - Synchronous
  - Asynchronous
  - Hybrid
- Delivery flexibility expands achieving a degree in a quality manner
- Not without challenges

- RSO can evolve Asynchronous academics.
  - Changes the status quo
  - Should be focal point for advancement
  - Allows matching the KSAs in use now

- Challenged by Regulation

- Simulation

Meeting Academic Needs

- Academia must resolve best methods for asynchronous education which includes advanced technology

- Fidelity is essential

- Minimize deltas between the training and operational systems

- We must:
  - ... develop the concept of remote split operations with sUAS
  - ... continue to conduct live flight and practical application of theory