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
Agenda

• 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
UAS AET Methodologies

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

- 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
Application

• 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

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

• 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
Academic Delivery

• RSO can evolve Asynchronous academics.
  o Changes the status quo
  o Should be focal point for advancement
  o 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
Future Pathways

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