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

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

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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.

- System variations and complexities
- Match OEM training and doctrine
- Integrate Human Factors
- Sense and avoid interface
- 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
• 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
Application Example

• 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
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.
• 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