Military Tutorial

- Military Air Safety Investigation Conference

Acknowledgements:
- Hosts: Thorkel Agustsson – RNSA/ITSB Iceland
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- Dave Harper, USAF Safety Center
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- Mike Schmank, Boeing T&E ASI

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Military Air Safety Investigator Summary

- **Overall**

- **Accident Investigation side:**
  - What happens when ICAO Annex 13 or STANAGS require real time modifications to the “normal” processes
  - Build Interfaces
  - Develop Agreements/Protocols
  - Transparent Communication
  - Military mishaps, Civilian mishaps, Military-Civilian Mishaps
  - Legal versus Safety investigation Boards
  - Training and education for investigators

- **Technical Side**
  - Alternative way to use Doppler shift to track aircraft
  - For aircraft fires: Auto-ignition temperature versus hot source ignition temps.
  - Advantage of using UAS systems to help accident investigations.
Military Air Safety Investigator Summary

P1: “MH17: Mission beyond borders”, Ron Smits, Dutch Safety Board
- MH17 accident behind border conflict
  - Investigation in a hostile environment
  - No access to site
  - New agreements/protocols
  - Priorities different from different organizations, across organizations
  - Change the plan
  - Recovery, transport, reconstruct Mishap Aircraft elsewhere

P2: “10 Year of Experience in Swedish Military Accident Investigation”, Agne Widholm, Statens haverikommission (SRK), Sweden
- Common application of investigative techniques between commercial and military accidents
- Depict how Swedish Accident Board is Organized
- Change in the Organization as military members rotate
Military Air Safety Investigator Summary

- P3: “Lessons learned on the way to conduct a multinational safety investigation from the Hellenic Air Force F-16D Mishap case (Jan 26, 2015)”, Brigadier Gen Caitucoli, BEAD-Air, France
  - International 6 Country SIB
  - Each country “knew” their own system – how to be transparent and open across borders and organizations, both regulations and legal aspects
  - Single Report/Common acceptance of causes (give and take)
  - Many ways to express cause of mishap
  - Communication and common approach
  - Take the time to “know” other in international accident investigations
  - OEM agreement to support all participants
Military Air Safety Investigator Summary

- P4: “Maintenance of Investigation Skills in periods of reduced activity”, Major Stephen Turner, UK Defence AIB
  - Fewer accidents – GOOD
  - BUT - fewer opportunities for investigators to use their skills
  - Approach using SQEP
  - Address competency
  - Military rotations for investigators
  - How to address skill fade and factors
  - Possible ways of mitigating”
    - more investigation of high end incident,
    - greater sharing of experience across investigative organizations, modes, nations & domains,
    - ever closer relationships with civilian agencies and industry (as they have the same challenges),
    - use of virtual and synthetic training, plus others.
- Example DASIF 2016: Forum to network, discuss for Military, Industry and Academia
P5: “Indoctrinating Minds to 101%”, Fahad Masood, Pakistan Air Force

- An alternative method of learning/education for knowledgeable adults
- K-CAASE methodology;
- Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation
- Low order thinking > high order thinking
- Practical application using “Andragogy” facilitation technique for aircraft “Ground Effect” analysis and application for student pilot learning
- Apply correct methodologies to emphasize:
  - How to Think Not What to Think
- Applied technique in the Pakistan College of Aviation Safety Management
Military Air Safety Investigator
Summary

- P6: “An alternative way of tracking aircraft based on Doppler effect phenomenon”, Piotr Ptak, Lappeenranta University of Technology, Finland
  - Alternative, reversionary method of aircraft tracking
  - Low cost
  - Existing technology
  - Further studies and application shows promise to develop, refine and deploy low cost systems
Military Air Safety Investigator Summary

P7: “Ignition Temperatures in Aircraft Fluid Fire Investigations – Which One to Use?”, Dr. Albert Moussa, BlazeTech Corporation

- In aircraft fires involving fuel, hydraulic fluid or oil, the investigator compares the temperatures of various equipment with a temperature threshold for ignition.
- There are two key threshold temperatures: Auto Ignition Temperature (AIT) and Hot Surface Ignition Temperature (HSIT).
- This tutorial will discuss and contrast these two temperatures and give an example of which one to use in a particular case.
- How changes in environmental conditions affect these temperatures
P8: "Unmanned Aerial System Use for Enhancing Aircraft Accident Investigations", Jeff Kraus, Boeing BT&E Test Safety/ASI

- UAS technology promises a significant enhancement to traditional methods of aircraft accident investigations
- Efficiency, safety, capabilities, cost
- Issues associated with operation, integration, responsible use, and safety
- UAS capabilities directly relate to components of SMS
- Regulatory Body UAS Rule changes
- Future areas to investigate
MASI/ISASI Purpose & Theme

MASI 2016

- **MASW: USAF Host ABQ NM 19-21 APR 2016**
  - “Sharing Safety Lessons Learned to Preserve Military Readiness
- **ISASI: Reykjavik, Iceland 17-21 OCT 2016**
  - “Every Link is Important”
  - MASI tutorial: “Extending the Networks”
  - Training and education for investigators

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<thead>
<tr>
<th>Year</th>
<th>Host</th>
<th>Location</th>
<th>MASW # of Days</th>
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<tbody>
<tr>
<td>2012</td>
<td>Boeing* (no International ASI’s)</td>
<td>Tempe, AZ</td>
<td>3 Days</td>
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<tr>
<td>2013</td>
<td>ISASI/MASI combined</td>
<td>Vancouver, CAN</td>
<td>1 Day with ISASI</td>
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<tr>
<td>2015</td>
<td>ISASI/MASI combined</td>
<td>Augsburg, Germany</td>
<td>1 Day with ISASI</td>
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<tr>
<td>2016</td>
<td>USAF Safety Center - MASW</td>
<td>Albuquerque, NM</td>
<td>3 Days</td>
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<tr>
<td>2016</td>
<td>ISASI/MASI-International Europe</td>
<td>Reykjavik, Iceland</td>
<td>1 Day with ISASI</td>
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<td>2017</td>
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<td>San Diego, CA</td>
<td>1 Day with ISASI</td>
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<tr>
<td>2018</td>
<td>Embry-Riddle MASW</td>
<td>Daytona Beach, FL</td>
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<tr>
<td>2018</td>
<td>ISASI</td>
<td>Dubai</td>
<td>ISASI Conference</td>
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* Military Air Safety Investigators (MASI) subset of International Society of Air Safety Investigators (ISASI)