USHST H-SE Status Update

January 31, 2019
Overview of active Helicopter Safety Enhancements (H-SE) – January 31, 2019

Analysis scores ranged from 0.09 – 5.27, Mendoza Line was placed at 3.00

- Total of (21) Approved H-SEs of which, (21) have been officially started.

<table>
<thead>
<tr>
<th>Group</th>
<th>H-SE N</th>
<th>No. of Output</th>
<th>Months to Complete</th>
<th>Analysis Sco</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Outreach</td>
<td>19_A</td>
<td>3</td>
<td>22</td>
<td>3.61</td>
<td>Safety Culture and Professionalism</td>
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<tr>
<td>Outreach</td>
<td>22_A</td>
<td>3</td>
<td>36</td>
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<td>Detection and Management of Risk Level Changes During Flight by Pilots and Nonflying Crew</td>
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<tr>
<td>Outreach</td>
<td>28/112</td>
<td>3</td>
<td>30</td>
<td>4.15 &amp; 4.00</td>
<td>Helicopter Final Walk Around/Security of External Cargo</td>
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<tr>
<td>Outreach</td>
<td>13_A</td>
<td>2</td>
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<td>5.00</td>
<td>Utilities Patrol and Construction (UPAC) Recommended Practice Guide</td>
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<td>Outreach</td>
<td>130</td>
<td>3</td>
<td>30</td>
<td>3.15</td>
<td>Education and Simulation on Hazards of Over-The-Counter Medication</td>
</tr>
<tr>
<td>Policy</td>
<td>30</td>
<td>2</td>
<td>48</td>
<td>3.89</td>
<td>Develop/Publish ACS Rotorcraft-Helicopter Series</td>
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<tr>
<td>Policy</td>
<td>37</td>
<td>3</td>
<td>54</td>
<td>3.33</td>
<td>Add Progressive Approach to Training Autorotations to Helicopter Flying Handbook</td>
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<tr>
<td>Tech &amp; Equip</td>
<td>70</td>
<td>4</td>
<td>26</td>
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<td>Stability Augmentation System (SAS) / Autopilot</td>
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<td>Tech &amp; Equip</td>
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<td>Use of UAS or OPA in High Risk Environments/Operations</td>
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<td>Training</td>
<td>115/128</td>
<td>5</td>
<td>30</td>
<td>4.32 &amp; 3.56</td>
<td>Threat and Error Management for Initial and Recurrent Pilot Training</td>
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<tr>
<td>Training</td>
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<td>4</td>
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<td>Improve Make/Model Transition Training</td>
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<td>Training</td>
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<td>4.24</td>
<td>Competency-based Training and Assessments in Initial Pilot Training</td>
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<tr>
<td>Training</td>
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<td>53</td>
<td>5.27</td>
<td>Recommended Practices for Standardization of Autorotation and Emergency Aircraft Handling Training</td>
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<tr>
<td>Training</td>
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<td>3</td>
<td>20</td>
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<td>Increased Simulation/Education to Develop Safe Decision Making</td>
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<tr>
<td>Training</td>
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<td>78</td>
<td>3.70</td>
<td>Improve Understanding of Basic Helicopter Aerodynamics</td>
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<tr>
<td>Training</td>
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<td>Pre-flight risk assessment for student flights</td>
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<td>Training</td>
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<td>3</td>
<td>34</td>
<td>3.89</td>
<td>Training for Recognition/Recovery of Spatial Disorientation</td>
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Implementation Status as of January 31, 2019

Chart on next page

<table>
<thead>
<tr>
<th>No status reported for the following H-SEs</th>
<th>Status Color Key:</th>
<th>Calendar Key:</th>
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<tbody>
<tr>
<td>• H-SE 13A</td>
<td>• Green on target</td>
<td>• The numbers under the calendar indicate the Output number.</td>
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<tr>
<td>• H-SE 28/112</td>
<td>• Yellow less than 10% behind target</td>
<td>• Most Outputs are scheduled to start at the beginning of the month.</td>
</tr>
<tr>
<td>• H-SE 130</td>
<td>• Red greater than 10% behind target</td>
<td>• However there are a few that start mid-month and end mid-month. These are</td>
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<tr>
<td>• H-SE 37</td>
<td>• Blue is completed</td>
<td>identified with a 0.5 in there start and end months. (Example: Output 1 of H-SE</td>
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<tr>
<td>• H-SE 82</td>
<td></td>
<td>81 started 9.15.2017 and ended 11/15/2017. And Output 2 of 81 started 11/15/2017.)</td>
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<tr>
<td>• H-SE 125</td>
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Outreach
Policy
Tech & Equip
Training
<table>
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<th>Status</th>
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<td>115/128</td>
<td>25%</td>
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<td>Outreach</td>
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<td>30%</td>
</tr>
<tr>
<td>Outreach</td>
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<td>1%</td>
</tr>
</tbody>
</table>
Overview of H-SE Status
(All Outputs Together)
Overview of H-SE Status

- **21 Active H-SEs**
  - Output 1 (21) – all as scheduled
  - Output 2 (14) – 1 more than scheduled
  - Output 3 (7) – 2 more than scheduled
  - Output 4 (2) – 1 more than scheduled

Status shown by all Outputs together

Note: Yellow is less than 10% behind schedule
Group: Outreach (5 Total H-SEs) – All are Active

- H-SE 19A is behind target (red) – “Safety Culture and Professionalism”
- H-SE 22A is behind target (red) – “Detection and Management of Risk Level Changes During Flight by Pilots and Nonflying Crew”
  - Output 1 is behind target (red)
  - Output 2 is on target (green)
  - Output 3 is ahead of target (green) – scheduled to start May 1st, 2019
- H-SE 13A is behind target (red) – “Utilities Patrol and Construction (UPAC) Recommended Practice Guide”
- H-SE 130 is behind target (red) – “Education and Simulation on Hazards of Over-The-Counter Medication”
H-SE 13A – Utilities Patrol and Construction (UPAC) Recommended Practice Guide

Focal: Ron Stewart (rstewart@wilsonconst.com)

- Output 1:
  1. 0% complete (red)
  2. Review UPAC Safety Guide for Helicopter Operators for basic content and revise as necessary.

- Actions:
  1. USHST Outreach Team brief HAI's UPAC Committee on USHST fatal accident analysis as it applies to the UPAC industry. Ensure intervention strategies below the Mendoza Line (19, 110, 151) noted previously in the “Relation to Current Aviation Community Initiative” portion of this H-SE are discussed.
  2. HAI's UPAC Committee review and revise the UPAC Safety Guide for Helicopter Operators.

- Status:
  1. Started June 1, 2018.
  2. No status reported since Sep 2018.
  3. There has been quite a bit of email traffic regarding H-SE 13A in an effort to help move H-SE 13A forward.
**H-SE 19A – Safety Culture and Professionalism**

**Focal: Tony Malinaro (Tony.Molinaro@faa.gov)**

- **Output 1:** (100 % complete)
- **Output 2:** (100 % complete)
  1. Promote definition of “effective safety culture” as defined in Output 1 of this H-SE.

**Status:**
  1. The team has presented two Go Local interactive workshops so far and are making some tweaks to the format.
  2. Two more are planned for the Spring.

- **Output 3:**
  1. 0% Complete (red)
  2. Improve mentoring by engaging operators who have already adopted an effective safety culture and used it to change their operations. Connect these operators with those in the rotorcraft community who need mentoring to help the individual or organization being mentored to gain the knowledge and skill to establish an effective safety culture.

**Actions:**
  1. USHST Outreach Team will establish a framework of existing aviation networks that could be used to establish a safety culture mentoring program. Intent is to use both individuals and organizations to serve in this capacity.
  2. USHST Outreach Team Focus Groups will actively engage with their respective industry sectors to connect individuals or organizations to a safety culture mentor. The USHST Outreach Team will facilitate an initial dialogue with the two parties to get the connection process started.

**Status:**
  1. Focal needs some clarification from the Steering Committee before work can progress on Output 3.
  2. The Government Shutdown has delayed progress on Output 3. Expect it to pick up after Heli-Expo.
H-SE 22A – Detection and Management of Risk Level Changes During Flight by Pilots and Nonflying Crew

Focal: Steve Earsom (stephen_earsom@fws.gov)

- **Output 1**: (Completed)
- **Output 2**:
  1. 0% Complete *(red)*
  2. Apply information from Output 1 to develop recommended practices for identifying changes that present high risks in the helicopter flying environment for both pilot and non-pilot crewmembers and develop educational materials containing recommended practices, including recommendations for empowering non-flying crewmembers to recognize changes in the risk level and effectively communicate with the pilot flying.

- **Actions**:
  1. USHSTs Outreach Team and SEA Training Team to develop recommended practices in coordination with appropriate industry engagement.
  2. USHST Outreach and SEA Training teams to develop educational materials for implementing recommended practices.

- **Status**:
  1. Beginning to review data for Output 2.
  2. Status is unchanged for January. Should start showing some progress in February now that the government is open again.
H-SE 28/112 – Helicopter Final Walk Around
/Security of External Cargo
Focal: Keith Cianfrani (kcianfrani@safety4pilots.com)

- **Output 1:**
  1. 95% complete (red)
  2. Review data regarding inadequate aircraft inspection.

- **Actions:**
  1. USHST SAT to compile briefing on fatal accidents raising aircraft inspection concerns.
  2. USHST SAT to review briefing with the HAI SC.

- **Status:**
  1. Waiting on input from various OEMs.

- **Output 2:**
  1. 80% complete (green)
  2. Status - Received various recommendations from various organizations. Waiting on several more. Will reach out to individuals who offered assistance.

- **Output 3:**
  1. 40% complete (green)
  2. Status - The team is in the process of developing recommendations and guidelines with HAI SC, FAA and OEMs regarding pre-flight inspection procedures. Estimated completion date is Jan 31, 2018.
H-SE 130 – *Education and Simulation on Hazards of Over-The-Counter Medication*

Focal: Richard Martinez ([Richard.martinex@L3T.com](mailto:Richard.martinex@L3T.com))

- **Output 1:**
  1. 60% complete *(red)*
  2. USHST Outreach Team to educate the helicopter community on the impairment of OTC medication through a variety of messaging.

- **Actions:**
  1. USHST Outreach Team will request CAMI provide education/awareness materials about sedating OTC medication. In addition, the USHST Outreach Team also will request CAMI either provide or develop materials more specific to helicopters operations, if possible.
  2. USHST Outreach Team will review CAMI materials and discuss additional methods of outreach to best convey to pilots the effects of OTC medications on flying abilities in a way that is concrete and understandable.
  3. USHST Outreach Team will use the USHST website, mass media distribution, and face to face venues to distribute education/awareness materials. Face-to-face venues will include but not be limited to FAASTeam regional helicopter events and industry sponsored events, such as HAI's Heli-Expo.

- **Status:**
  1. The team has obtained updated informational material, which is in review. For action 2, the team is working on recommendations. And Action 3 is in the initial planning stages.
  2. For Output 2, the team is establishing a discussion on Initial Concepts / Pros & Cons and Options to potential solutions.
Group: Policy (2 Total H-SEs) – 2 H-SEs is Active

- H-SE 30 is a little behind Target (yellow) – “Develop/Publish ACS Rotorcraft-Helicopter Series”
- H-SE 37 is behind target (red) – “Add Progressive Approach to Training Autorotations to Helicopter Flying Handbook”
H-SE 30 – Develop/Publish ACS

Rotorcraft-Helicopter Series

Focal: Jim Ciccone (James.Ciccone@faa.gov)

Output 1:

1. 35% complete (yellow)
2. Develop new ACS for Rotorcraft-Helicopter series to replace the current PTS.

• Actions:
  1. If not already completed, add agenda item for the ARAC - ACS WG quarterly meeting, to introduce new helicopter industry participants and discuss efforts and roles within the WG for the new ACS.
  2. Establish timelines and address progression of each ACS.
  3. Conduct review of each helicopter ACS and address comments and required changes before release to industry.

• Status:
  1. The Rotorcraft Airman Certification Standards (ACS) Working Group (WG) continues to meet weekly via Telcon and Adobe Connect.
  2. The DRAFT Private Pilot Rotorcraft-Helicopter ACS and DRAFT Instrument-Helicopter ACS were approved by the Aviation Rulemaking Advisory Committee (ARAC), submission to the Federal Register for public comments is TBD.
  3. The DRAFT Commercial Pilot-Helicopter ACS is currently at Area of Operation (AOO) X. The WG is working to complete the Commercial ACS while at the December 11th & 12th ACS WG quarterly meeting in Washington DC. The competed DRAFT Commercial Pilot-Helicopter ACS will then be submitted to the ACS Committee for review and later submission to the ARAC for approval.

• Upcoming Activities:
  1. Due to the Government shutdown, which furloughed FAA employees of the FAA Airman Training and Certification Branch, AFS-810 December 21, 2018 through January 25, 2019, the Rotorcraft-Helicopter ACS WG was unable to meet weekly and continue its efforts to increase helicopter safety through flight training and testing standards. The ACS WG meeting scheduled for January 30, 2019 was canceled to allow the FAA to reopen and address immediate concerns.
  2. The FAA plans to resume weekly ACS meetings with the Rotorcraft ACS WG beginning February 6th.
H-SE 37 – Add Progressive Approach to Training Autorotations to Helicopter Flying Handbook

Focal: Shawn Coyle (shawncoyle@earthlink.net)

Output 1:

1. 25% complete (red)
2. FAA to work with industry on researching and evaluating helicopter progressive training techniques as detailed in AC 61-140A for autorotation and operational data.

• Actions:
  1. Research and evaluate the current advisory guidance.
  2. AC 61-140A was based on USHST data and currently supplements and expands the guidance from the HFH. Assess AC 61-140A to determine what additional research, if any, is necessary to justify taking the expanded guidance on autorotations found in this AC and publishing it as principal guidance in the HFH.
  3. If further research is necessary, the FAA will solicit input from the USHST SEA Training Team.
  4. Determine if additional research is required on pilot performance and human factors related to the progressive approach.
  5. Determine if a complete review of the HFH is necessary, to include reclassification of training autorotations by removing the topic from the emergency section.

• Status:
  1. Steering Committee Sponsor made contact with Focal, but no status report of work being done.
Group: Tech & Equip (7 Total H-SEs) – 6 H-SEs are Active

- H-SE 70 is behind target (red) – “Stability Augmentation System (SAS) / Autopilot”
- H-SE 75 is behind target (red) – “Technology to Prevent Unintended Loss of Engine Power” ON HOLD - Focal not identified
- H-SE 81 is behind target (red) – “Improve Simulator Modeling for Outside-the-Envelope Flight Condition ON HOLD
- H-SE 82 is on target (green) – “Helicopter Flight Data Monitoring”
- H-SE 90 is ahead of target (green) – “Use of UAS or OPA in High Risk Environments/Operations”
- H-SE 91 is behind target (red) – “Enhanced Helicopter Vision System”
H-SE 70 – *Stability Augmentation System (SAS)/Autopilot*

**Focal:** Ray Debs ([ray@helitrak.com](mailto:ray@helitrak.com))

- **Output 1 & 2:** (100% complete)
  1. USHST to coordinate formation of H-SE 70 team
  2. Meet with FAA regarding certification pathways for SAS/autopilot technology for light helicopters.

- **Output 3:**
  1. 15% complete (red)
  2. Draft White Paper that identifies the need and pathways to certification for SAS/autopilot technology for light helicopters.

- **Actions:**
  1. H-SE 70 team to draft White Paper
  2. H-SE 70 team to submit White Paper to USHST Steering Committee for review and approval.

- **Status:**
  1. Focal is looking direction from the Steering Committee on path forward for the White Paper.
  2. No progress, focal is asking Steering Committee for assistance!
H-SE 75 – Technology to Prevent Unintended Loss of Engine Power

**Focal: TBD**

- **Output 1:**
  1. 0% complete (red)
  2. USHST to coordinate formation of H-SE 75 team

- **Actions:**
  1. USHST to convene team of subject matter experts to support H-SE 75.

- **Output 2:**
  1. 0% complete (red)
  2. Meet with the FAA regarding certification pathways for Full Authority Idle Protection (FAIP) devices.

- **Actions:**
  1. H-SE 75 team to coordinate meeting with FAA – Rotorcraft Standards Staff to:
     1. Describe the need for a FAIP in certain piston helicopters
     2. Describe safety benefits.
     3. Discuss potential certification paths and availability of Non Required Safety Enhancing (NORSEE) path.

- **Status:**
  1. No progress, since there is no Focal to shepherd this H-SE.
H-SE 81 – Improve Simulator Modeling for Outside-the-Envelope Flight Conditions

Focal: Ryan Mason ([ryan@heliweb.com](mailto:ryan@heliweb.com))

- **Output 1:**
  1. 80% complete (red)
  2. Form H-SE 81 team.

- **Actions / Status (No description of work complete):**
  1. USHST to convene team of subject matter experts to support H-SE 81.

- **Output 2:**
  1. 0% complete (red)
  2. Coordinate with the FAA, industry, and academia to review existing helicopter simulator/physics-based models and conduct research/testing to develop recommendations for improved helicopter mathematical/physics-based models.

- **Actions / Status (No description of work completed):**
  1. H-SE 81 to lead review of current simulator/flight training device models for fidelity and gaps in model data for outside-of-the-envelope flight regimes (e.g., Hover, Quick Stop, LTE, VRS, Autorotations).
  2. Collect simulation data from various simulator/training devices, helicopter types, and operators (e.g., Flight Safety, CAE, ELITE, FRASCA, X-Plane, Microsoft Flight Simulator, etc.) and flight test data from operators performing candidate maneuvers across various mission segments.
  3. Use data to develop recommendations for improved mathematical/physics-based flight dynamics simulator models. Test improved mathematical/physics-based flight dynamics simulator models as applicable and feasible.
H-SE 82 – Helicopter Flight Data Monitoring

Focal: Jeff Byrd (jbyrd@eit.com)

• Output 1:
  1. 70% complete (green)
  2. Develop an educational outreach campaign that address the following:
     a) Fundamentals of why the use of data recording devices is valuable to an owner/operator (What is HFDM? How can it be used? How is it part of an effective SMS?).
     b) Specific examples of the benefits to using HFDM as described by success stories of those who were early adopters.
     c) How data recording can work side by side with participation in voluntary safety programs such as Aviation Safety Information Analysis and Sharing (ASIAS) and provide information back to the owner/operator on trends and higher risk areas.

• Actions:
  1. USHST Outreach Team review current industry materials describing HFDM (i.e., Fact Sheets, Toolkits, etc.) from USHST/IHST, Global HFDM Steering Group, Rotorcraft ASIAS HFDM research, etc. and develop modifications for new materials and media types (i.e., audiovisual, mobile app, etc.) for the educational outreach campaign. – completed
  2. USHST Outreach team work with the FAA, ANG-E2 to conduct HFDM Knowledge Sessions and safety seminars and outreach sessions at targeted events.
  3. USHST Outreach Team and the FAA, ANG-E2 develop and implement a pilot program (i.e., similar to the General Aviation Demo Project) for expanding recorder usage among targeted helicopter mission segments.
  4. The FAA and ANG-E2 collect helicopter flight test data from multiple helicopter types and mission segments for incorporation into ASIAS to demonstrate practical ASIAS capabilities to audiences during outreach.

• Status:
  1. Telecom on 9/19/2018.
  2. Discussed upcoming events for HFDM presentations and team presentation. Identified sources of information supporting economics of implementing FDM. Cliff Johnson will be POC for ANG-E2 for HFDM knowledge sessions.
H-SE 90 – Use of UAS or OPA in High Risk Environments/Operations

Focal: Mark Colborn (kd5elf@tx.rr.com)

• Output 1:
  1. 100% complete (blue)
  2. Identify operations and environments that are more susceptible to high-risk conditions for manned helicopter operations and for which use of a UAS or OPA could be viably integrated to supplement or support operations to mitigate risks.

• Actions:
  1. HAI UAS/OPA Committee and USHST to establish a small team of UAS/OPA SMEs (H-SE 90 SME Team) to research operations and environments that are more susceptible to high-risk conditions for manned operations and for which a UAS or OPA could be a viable to support or supplement operations.
  2. H-SE 90 SME Team to conduct a basic review or analysis of the fatal accidents where the working group recommended H-SE 90 as a solution is outlined above in the Statement of Work. The Team should use the USHST’s working group data from these LOC-I, UIMC, and LALT fatal accidents as a starting point for further research. They should also consider any recent studies from academia on the subject.
  3. H-SE 90 Team to organize the results of the analysis in Output 1 into a brief, formal report to submit to the USHST Outreach Team. The report should also have enough structure and formality to be submitted to the FAA such that any issues involving proposed new use of UASs or OPA can be clearly communicated, addressed, and resolved.

• Status:
  1. On Jan 31, 2019, “Identifying How UAS/OPA Can Reduce Fatal Accidents in High Risk Manned Helicopter Operations” was approved for publication and pushout to industry and government by the Steering Committee. All final changes/suggestions/additions were incorporated into the report as of February 3, 2019. No more changes will be accepted.
H-SE 91 – Enhanced Helicopter Vision System
Focal: Cliff Johnson (Charles.C.Johnson@faa.gov)

• Output 1:
  1. 80% complete (red)
  2. Research and evaluate helicopter vision-enhancing technologies and operational concepts for advanced vision systems.

• Actions:
  1. FAA – ANG-E2 should engage with industry to review the current vision systems enhancing technologies available and how compatible they may be with rotorcraft. A survey of industry vision systems manufacturers may be necessary as part of this effort. FAA – ANG-E2 should compile the results of this review in support of the FAA internal discussion described in Step 2.
  2. FAA – ANG-E2, AFS-400, AFS-800, and AIR-Rotorcraft Standards Staff should meet to discuss any existing operational and certification barriers (regulation, policy, guidance) that may have either discouraged or prohibited use of already available advanced vision technologies. These will be issues the FAA should resolve in Output 2.
  3. Following the FAA discussion from Step 2, if there are currently available vision systems enhancing technologies that could be accepted and installed by the rotorcraft community without significant action necessary by the FAA, this type of technology should be promoted immediately and not delayed by further study (skip to Output 3, “promotion”). However, if options are limited and further study is required, FAA – ANG-E2 should do the following:
     a) Conduct a study on pilot performance and human factors aspects of vision-enhancing system displays via flight testing.
     b) Conduct a study on vision systems’ sensor technologies and performance via flight and ground testing.
     c) Examine obstacle-detection capabilities with vision systems technologies (i.e., wire detection with FLIR, LiDAR, MMWIR, etc.).
  4. At the conclusion of this output, FAA- ANG-E2 should develop a report on operational concepts for utilization of helicopter vision-enhancing systems in low-visibility operations (i.e., night, IMC, etc.) and enhanced VFR.

• Status:
  1. FAA Team members began circulating the sensor/display product technology review/survey review to the other FAA organizations identified in Output #2 for feedback/input prior to the FAA Discussion regarding barriers to certification and operation.
  2. FAA Team members continued to integrate and calibrate Elbit’s SkyLens Display and HeliEVS sensor and flew test flights with the EVS system on a heads-down display and heads-up(head-worn) display in the FAA’s S76 Helicopter in both VMC and IMC weather conditions.
  3. Additional flight tests and progress on the H-SE were delayed due to the 35-day government shutdown and its impacts on the effort, but are planned for the system in Spring/Summer 2019. Team plans to hold meeting (before, during, or after) HeliExpo in Atlanta to discuss progress on the other outputs.
Group: Training (8 Total H-SEs) – All H-SEs are Active

  - Output 1 is behind target (red)
  - Output 2 is ahead of target (green) (Outputs 2, 3, and 4 run concurrently)
  - Output 3 is a little behind target (yellow)
  - Output 4 is a little behind target (yellow)
- H-SE 116 is behind target (red) – “Improve Make/Model Transition Training”
- H-SE 117 is behind target (red) – “Competency-based Training and Assessments in Initial Pilot Training”
- H-SE 122 is behind target (red) – “Recommended Practices for Standardization of Autorotation and Emergency Aircraft Handling Training”
Group: Training (8 Total H-SEs) – All H-SEs are Active – cont.

- H-SE 123 is on target (green) – “Increased Simulation/Education to Develop Safe Decision Making”
- H-SE 124 – “Improve Understanding of Basic Helicopter Aerodynamics”
  - Output 1 is on target (green)
  - Output 2 is ahead of target (green)
  - Output 3 is ahead of target (green)
  - Output 4 is ahead of target (green)
- H-SE 125 is behind target (red) – “Pre-flight risk assessment for student flights”
- H-SE 127A is behind target (red) – “Training for Recognition/Recovery of Spatial Disorientation”
H-SE 115/128 – Threat and Error Management for Initial and Recurrent Pilot Training

Focal: Philipp Wynands (pwynands@metroaviation.com)

- **Output 1:**
  1. 33% complete (red)
  2. Develop recommended practices for incorporating TEM into initial and recurrent helicopter training.

- **Actions:**
  1. FAA, USHST SEA Training Team, and HAI TC to review existing materials on teaching TEM.
  2. FAA, USHST SEA Training Team, and HAI TC to develop recommendations for implementing TEM in initial and recurrent helicopter pilot training. In completing this work, the group should examine TEM within the context of the LOC-I, UIMC, and LALT fatal accidents analyzed by the USHST working group to guide their recommendations.
  3. FAA, USHST SEA Training Team, and HAI TC to issue recommendations.

- **Status:**
  1. Distributed CASA TEM training materials for review and discussion. Conference call planned for week of April 9<sup>th</sup>, 2018.
  2. No change since June.

- **Output 2:**
  1. 25% complete (green)
  2. Revise Advisory Circular (AC) 60-22, Aeronautical Decision Making (or issue new AC, as appropriate) to incorporate TEM recommendations.

- **Actions:**
  1. FAA to incorporate TEM recommendations in AC 60-22, as appropriate, or issue a new AC.
**H-SE 116 – Improve Make/Model Transition Training**

Focal: David Small (dsmall0831@outlook.com)

- **Output 1:**
  1. 20% complete (red)
  2. Review best practices and recommendations related to transition training developed and published by other organizations (e.g., AOPA, EAA, GAJSC) and use these materials to create updated and unified recommendations regarding transition training in helicopters.

- **Actions:**
  1. USHST SEA Training Team will review existing best practices and recommendations related to transition training. They should request assistance as needed from HAI TC, AOPA, EAA, GAJSC, or any other industry organizations that may have experience developing transition training.
  2. USHST SEA Training Team will draft standardized guidelines for transition training to include a gap analysis template for CFIs. The gap analysis template will allow CFIs to identify highest risk areas for pilots of various experience levels transitioning to a different helicopter type.
  3. USHST SEA Training Team will review their draft proposal with insurance underwriters for final edits (consider using NBAA to establish connection, if needed).
  4. USHST SEA Training Team will publish the transition training toolkit.

- **Status:**
  1. The team has reached out to several organizations, EAA, AOPA, HAI, FAA, etc. and are accumulating reference material on transition training. For February the focal will continue to reach out for information from different operators and OEM’s. Seems like most of the information out there such as EAA and AOPA is fixed wing related, but it can still be used for rotor wing.
  2. Under the SOW, the H-SE mentioned aircraft clubs as great advocates for the promotion and education of the actions of the H-SE. The focal has joined a couple and is evaluating their potential as an avenue to disseminate the actions of this H-SE.
H-SE 117 – Competency-based Training and Assessments in Initial Pilot Training

Focal: Nicky Armour (narmour@mitre.org)

- **Output 1:**
  1. 80% complete (red)
  2. Convene H-SE 117 Subject Matter Expert (SME) team to define pilot competence for the list of subject areas noted in this H-SE.

- **Actions:**
  1. USHST SEA Training Team and the FAA to conduct outreach to convene a team of SMEs to define competency in list of subject areas noted in this H-SE.
  2. H-SE 117 SME team to establish a team lead, define roles, and establish a meeting schedule.

- **Status:**
  1. The training team (Jim Ciccone, Nick Mayhew, and Phillip Wynands) will assist with leading this H-SE. The training team has been working on the new ACS for initial pilot training. The objective is to see what the ACS has addressed and if it applies to the items identified in H-SE 117 in regards to recurrent or initial training elements.
  2. Next meeting scheduled for Feb 25th.

- **Output 2:**
  1. 20% complete (green)
  2. Provide guidance regarding how to train initial helicopter pilot applicants on demonstrating competence for the list of subject areas noted in this H-SE.

- **Actions:**
  1. H-SE 117 SME team to review existing regulations, standards (PTS), and guidance on knowledge, skills, and risk management that pilots must know.
  2. H-SE 117 SME team to define what competence level required for completion of the training for the subjects.
  3. H-SE 117 SME team to develop guidance materials for using the competency definitions in training.
H-SE 122 – Recommended Practices for Standardization of Autorotation and Emergency Aircraft Handling Training

Focal: Philipp Wynands (pwynands@metroaviation.com)

- **Output 1:**
  100% complete - Define an H-SE 122 SME team

- **Output 2:**
  1. 15% complete (red)
  2. Draft a White Paper documenting the consensus on recommended training practices for Certified Flight Instructor-Rotorcraft/Helicopter with focus on areas defined in the Statement of Work and develop an online database of resources when the draft is complete.

- **Actions:**
  1. Compile and review existing resources.
  2. Define structure of White Paper:
  3. Cont.....

- **Status:**
  1. The final work on the Private ACS will be completed within the next few weeks. This already incorporates new standards for autorotation training and therefore guidance will also be revised.
H-SE 123 – Increased Simulation/Education to Develop Safe Decision Making

Focal: Nick Mayhew (nick.mayhew@L3T.com)

• Output 2:
  1. 40% complete (green)
  2. H-SE 123 SME team will work to eliminate any barriers in existing guidance and oversight that may currently inhibit or discourage increased use of helicopter simulation devices. The specific intent is to prevent future fatal accidents by enabling a greater number of pilots to be safely educated on at risk scenarios at all levels of simulator training.

• Actions:
  1. The H-SE 123 SME team will conduct a full review of guidance and oversight for all helicopter simulation in the U.S. The team should provide recommendations to the FAA on the necessary revisions to guidance and oversight that would allow as much simulator training and checking credit as possible. If the recommendations are implemented, they would serve to promote increased use of simulation for at risk scenarios.
  2. If necessary, the USHST SAT can brief the H-SE 123 SME team on the LOC-I, UIMC, LALT analysis and scoring process that led to the prioritization of this particular H-SE. (Cont.....)

• Output 3:
  1. 40% complete (green)
  2. Work with industry to identify specific at risk scenarios, address the feasibility of their inclusion or further emphasis in simulator training for both ab initio and recurrency sessions, promote their inclusion, and recommend how the most recently identified at risk scenarios can continue to be routed to the simulator training providers..

• Status:
  1. Held monthly web conference on Jan 11th. ACS Annex with accident summary for scenario and key objectives continues development. ERAU scenarios (8) received and distributed for comment and field beta testing. Awaiting FIT/Georgia Tech undergraduates submissions to populate Annex
H-SE 124 – Improve Understanding of Basic Helicopter Aerodynamics

Focal: Tim Tucker (pilottucker@earthlink.net)

- **Output 1:**
  1. 80% complete (green)
  2. Review the Helicopter Flying Handbook (FAA-H-8083-21A), Helicopter Instructor’s Handbook (FAA-H-8083-4) and pertinent ACs to assess explanations of unsafe aerodynamic situations and provide recommendations for revisions.

- **Actions:**
  1. The FAA, USHST SEA Training Team, and HAI Training Committee to collaborate on recommendations for revising the content in the Helicopter Flying Handbook and Helicopter Instructor’s Handbook concerning unsafe aerodynamic situations.

- **Output 2:**
  1. 80% complete (green)
  2. Revise to the Helicopter Flying Handbook, Helicopter Instructor’s Handbook and pertinent ACs concerning unsafe aerodynamic situations, to include vortex ring state, low G mast bumping, and low RPM rotor stall guidance.

- **Actions:**
  1. The FAA should use the recommendations from Output 1 to initiate and complete revisions to the Helicopter Flying Handbook, Helicopter Instructor’s Handbook and pertinent ACs.

- **Output 3:**
  1. 25% complete (green)

- **Status:**
  1. AFS 630 has decided to publish the revised HFH with virtually all the changes the SEA Training Team recommended. Publication was set for Feb, but shutdown might affect schedule. Another revision of the handbook will be made after the ACS is in effect. Another face-2-face scheduled mid March.
H-SE 125 – Pre-Flight Risk Assessment For Student Flights

Focal: TBD

• Output 1:
  1. 30% complete (red)
  2. Review existing flight training pre-flight risk assessment material, identify gaps between recommended practices and findings from USHST fatal accident analysis, and consolidate recommended practices.

• Actions:
  1. USHST SEA Training Team to review existing material from sources listed in the “Relation to Current Aviation Community Initiatives”, for Pre-Flight Risk Assessments.
  2. Identify gaps between reviewed material and findings from USHST fatal accident analysis.
  3. Identify inherent risks associated with the flight training environment.
  4. Consolidate findings and recommendations into a format conducive to developing guidance.

• Status:
  1. New member joined the team following the Prescott Face-to-Face. He will be helping to complete the research of the different types of assessments that are used in the industry.
  2. Ideally, we are trying to identify the features of the various risk assessments. Example – whether they use point values to identify high risk, color codes, categories of risk factor questions, etc. This will help with trying to find what methodology would work best in a training environment.
  3. Focal has stated that he has to step down. If you are interested in becoming the Focal for this H-SE, please let Lee Roskop (Lee.Roskop@faa.gov), or Mona Polson (mpolson@bellflight.com) know.
H-SE 127A – *Training for Recognition/Recovery of Spatial Disorientation*

**Focal:** Jill Browning ([jill.g.browning@lmco.com](mailto:jill.g.browning@lmco.com))

- **Output 1:**
  1. 55% complete *(red)*
  2. Review existing SD training products for inclusion in helicopter specific SD training.

- **Actions:**
  1. Research and review current SD products available (GAMA facilitate via survey).
  2. USHST SEA Training Team will review GAMA survey results to determine if current materials meet needs.
  3. If USHST Special Areas Training Team finds current materials are inadequate, they will create a requirements document to define unmet needs. This may involve outreach to simulator providers or other research entities.

- **Status:**
  1. Focal is coordinating with Lauren (GAMA) to determine the best method to survey additional GAMA members based on the information utilized by the 127A team previously. The Focal expects to have a path forward on that once they confirm the survey protocol with Lauren.
  2. Lauren (GAMA) has sent a link of the survey to the Steering Committee.
  3. The survey link has been sent out to the Bell pilots.
  4. *Chris Hill from HAI has offered to send out the survey link to the HAI contact email list.*