Overview of active Helicopter Safety Enhancements (H-SE) – June 30, 2021

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.
• (2) have been officially put on HOLD, 1 of the ON HOLD H-SEs has been re-activated, H-SE 81
• (4) have been “Tabled” by the Steering Committee, however portions of these will be implemented via other H-SEs

<table>
<thead>
<tr>
<th>Group</th>
<th>H-SE No.</th>
<th>No. of Output</th>
<th>Months to Complete</th>
<th>Analysis Score</th>
<th>Title</th>
</tr>
</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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<td>Outreach</td>
<td>22_A</td>
<td>3</td>
<td>36</td>
<td>3.15</td>
<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>
</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>Tech &amp; Equip</td>
<td>70</td>
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<td>Tech &amp; Equip</td>
<td>81</td>
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<td>Improve Simulator Modeling for Outside-the-Envelope Flight Conditions - ON HOLD</td>
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<td>Tech &amp; Equip</td>
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<td>Tech &amp; Equip</td>
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<td>Training</td>
<td>115/128</td>
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<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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<td>Training</td>
<td>116</td>
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<td>Training</td>
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<td>Training for Recognition/Recovery of Spatial Disorientation</td>
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<td>Outreach</td>
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<td>Use of UAS or OPA in High Risk Environments/Operations</td>
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<td>Outreach</td>
<td>130</td>
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<td>30</td>
<td>3.15</td>
<td>Education and Simulation on Hazards of Over-The-Counter Medication</td>
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<tr>
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<td>30/122</td>
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<td>4.24</td>
<td>H-SE 117 - Output 3 - Competency-based Training and Assessments in Initial Pilot Training</td>
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<td>Policy</td>
<td>30/37</td>
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<td>54</td>
<td>3.33</td>
<td>H-SE 37 - All Outputs - Add Progressive Approach to Training Autorotations to Helicopter Flying Handbook</td>
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</table>
Overview of H-SE Status (All Outputs Together)
Overview of H-SE Status

Outputs which have been put On Hold or moved to other H-SEs have been removed from the count below.

- **16 Active H-SEs**
  - Output 1 (16) – as scheduled
  - Output 2 (15) – as scheduled
  - Output 3 (11) – 1 more than scheduled
  - Output 4 (4) – 1 more than scheduled
  - Output 5 (1) – 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 complete – “Safety Culture and Professionalism”
- H-SE 22A is complete – “Detection and Management of Risk Level Changes During Flight by Pilots and Nonflying Crew”
- H-SE 28/112 is complete - “Helicopter Final Walk Around/Security of External Cargo”
- H-SE 13A is complete – “Utilities Patrol and Construction (UPAC) Recommended Practice Guide”
- H-SE 130 is complete – “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)
Champion: Scott Tyrrell (scott.tyrrell@faa.gov)

COMPLETE:
Outreach: Industry to promote the recommended practice guides for utility patrol operations within industry and its customers.

CLOSEOUT COMMENTS:
• Briefed at HAI’s Utilities Patrol and Construction Working Group meeting in January 2020 before the document was “officially” approved. There had to be at least 200 attendees in a packed room. HAI could probably tell the Outreach Team how many UPAC operators were present.
• Briefed during one of USHST’s H-SE updates in summer 2020. Ron Stewart from Wilson Construction briefed it. I don’t know if HAI can trace back to who all participated in that WebEx and how many were UPAC operators.
• Tony M put together a mass distributed H-SE 13A Fact Sheet about the revised UPAC guide. It was sent out via various online sources as a press release and featured in an HAI “Rotor Daily” segment. It’s posted on the USHST website.
• Ron Stewart wrote an article that will appear in FAA’s Safety Briefing magazine, in the “Vertically Speaking” column, Nov/Dec issue. It is both an online and hard copy magazine.
• Link to: UPAC Safety Guide for Helicopter Operators
H-SE 19A – Safety Culture and Professionalism

Focal: Tony Malinaro (Tony.Molinaro@faa.gov)
Champion: Tony Randall

COMPLETE:
Go Local in-person and webinar safety workshops are completed and will be used across the country by FAASTTeam.

CLOSEOUT COMMENTS:
Link to Go Local information: http://ushst.org.dnn4less.net/Go-Local
H-SE 22A – Detection and Management of Risk Level Changes During Flight by Pilots and Nonflying Crew

Focal: Steve Earsom (stephen.earsom@fws.gov)
Champion: Dawn Groh (Dawn.Groh@erau.edu)

COMPLETE:
Outreach: Industry to develop and promote recommended practices for pilot and nonflying crewmembers to (1) detect increased risk levels during the course of a flight, (2) effectively communicate the increased risk level to each other, and (3) make a decision on the appropriate risk mitigation.

CLOSEOUT COMMENTS:
- Team submitted document that overviews CRM practices of US Army flight crews to USHST EC
- Received comments from EC, revised document, and resubmitted for final approval
- Steve Earsom and Dawn Groh presented to a packed room at Heli Expo 2020 on the work that they’d already done.
- Steve briefed the materials again during one of the USHST summer All-Hands H-SE webexs. It was well received with several questions.
- Steve wrote an article about the results of the H-SEs work that was published in FAA’s Safety Briefing magazine in the “Vertically Speaking” column. I think it was the May/June issue? It is both an online and hard copy magazine.
**H-SE 28/112 – Helicopter Final Walk Around/Security of External Cargo**

Focal: Keith Cianfrani (kcianfrani@safety4pilots.com)
Champion: Scott Tyrrell (scott.tyrrell@faa.gov)

**COMPLETE:**

Outreach: Industry and the FAA to (1) develop guidelines/recommended practices for helicopter preflight inspection, final walk around, and postflight inspection and (2) to promote the guidelines/recommended practices to the training community and general pilot community.

**CLOSEOUT COMMENTS:**

Link: [Recommended Practices: Helicopter Preflight, Final Walk around and Post Flight Inspection Guidelines](#)
Link: [12 Rules to Live by for Your Pre-Flight Helicopter Inspection](#)
H-SE 130 – Education and Simulation on Hazards of Over-The-Counter Medication

Focal: Richard Martinez (Richard.martinex@L3T.com)
Champion: Manny Figlia (emanuele.figlia@airbus.com)

• 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. GAJSC has produced an OTC Medication for Pilots documents that meets the needs of Output 1. This document is the FAA web site at: https://www.faa.gov/licenses_certificates/medical_certification/media/OTCMedicationsforPilots.pdf
  2. For Output 2, the team determined that the simulation portion was not feasible. Output 2 complete.
  3. Output 3, is no longer applicable due to the results of Output 2. Output 3 complete.
  4. THIS CONCLUDES H-SE 130.
Group: Policy (2 Total H-SEs) – 1 H-SEs is Active (H-SE 37 “Tabled”)

- H-SE 30 is behind target (red) – “Develop/Publish ACS Rotorcraft-Helicopter Series”

Additional H-SE Efforts Being Accomplished

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

Focal: Tim Tucker
Champion: N/A

Output 1:
1. 75% complete (red)
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. After treading water for over a year it seems the FAA and DOT have finally resolved the issues that prevented the Helicopter Airman Certification Standards (ACS) from being published. However, no date has been set and the exact process for transitioning from the Practical Test Standards (PTS) to the ACS has not been determined. Hopefully, more information will be available in the next ACS Working Group quarterly telecom in June.
H-SE 30+ – Additional H-SE Efforts Being Accomplished


1. **Output 1:** FAA to work with industry on researching and evaluating helicopter progressive training techniques as detailed in AC 61-140A for autorotations and operational data.
   2. **Output 2:** FAA to incorporate progressive training findings into the Helicopter Flying Handbook (FAA-H-8083-21A). FAA should work with industry on any other areas that should be addressed in the HFH during this revision.
   3. **Output 3:** FAA, HAI, and USHST to conduct outreach on the latest revisions of HFH for helicopter operators.
   
   • **Status:** 50% complete (green)

H-SE 122: Recommended Practices for Standardization of Autorotation and Emergency Aircraft Handling Training

• **Output 5:** Support revisions of Helicopter Flying Handbook, Helicopter Instructor’s Handbook to include information from endorsed White Paper.

• **Status:**

H-SE 117: Competency-based Training and Assessments in Initial Pilot Training

• **Output 3:** Brief the ACS working group on competency definitions.

• **Status:** The ACS working group is doing aspects of this entire H-SE already.

H-SE 115/128: Threat and Error Management for Initial and Recurrent Pilot Training

• **Status:** There is a brief introduction to TEM that the ACS team is getting into the Helicopter Flying Handbook, but it does not do to the detail that is dictated in H-SE 115/128. No additional work being done on this H-SE by H-SE 30 team.

• **Status Notes:**

1. The ACS WG POC expressed concerns incorporating H-SEs: 37, 122, 115/128, and 117 into H-SE# 30. The Rotorcraft ACS WG membership is made up of Powered-lift ACS WG members currently drafting the Powered-lift ACS series and guidance material. The additional H-SEs may diminish the efforts of those Powered-lift ACS WG members to complete the powered-lift ACS series and required reference material to meet the planned timeline for an entrant Powered-lift aircraft. Members of the Rotorcraft ACS WG may elect to develop material for any of the H-SEs above. The ACS WG, when able, will support their efforts.
H-SE 37 – Add Progressive Approach to Training Autorotations to Helicopter Flying Handbook

*Steering Committee decided to “Table” H-SE 37 at Heli-Expo 2019.*
*Portions of this H-SE plan to be incorporated under H-SE 30, via work already being accomplished.*

Refer to H-SE 30 page 15 for status.
Group: Tech & Equip (7 Total H-SEs) – 5 H-SEs are Active, 1 H-SE is “On Hold” and 1 is “Deffered”

- H-SE 70 is complete – “Stability Augmentation System (SAS) / Autopilot”
- H-SE 81 is behind target (red) – “Improve Simulator Modeling for Outside-the-Envelope Flight Conditions”
- H-SE 82 is behind target (red) – “Helicopter Flight Data Monitoring”
- H-SE 90 is complete – “Use of UAS or OPA in High Risk Environments/Operations”
- H-SE 91 is behind target (red) – “Enhanced Helicopter Vision System”
The H-SE 70 – Stability Augmentation System (SAS)/Autopilot

Focal: Chris Hill (chris.hill@rotor.org)
Champion: Wayne Fry (wayne.p.fry@faa.gov)

COMPLETE:
The white paper (output three) is published here and specifically promoted (output four) in the USHST’s March 31, 2021 Webinar video link available here with the excellent presentation by Tony and Erik available here.
We also had a separate HAI Spotlight on Safety video back in June 2020.
We will continue to work with stakeholders promote and complete viable recommendations

CLOSEOUT COMMENTS:
The H-SE 70 white paper has been published on the USHST website.

H-SE 81 – Improve Simulator Modeling for Outside-the-Envelope Flight Conditions

Focal: Cliff Johnson (Charles.C.Johnson@faa.gov)
Champion: Nick Mayhew

**Output 1:**
1. 55% 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:**
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.
2. Collect simulation data from various simulator/training devices, helicopter types, and operators 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.

**Status:**
1. The team continued to work on Output 2 and gathered more information on various industry simulators and technologies. Team members refined the initial matrix to correlate simulator platforms with their level of fidelity and underlying physics models while also incorporating accident and incident data along with examples of each condition. The team continued to develop a framework for incorporating training tasks into the matrix to be able to address what part of the models the team should focus on for specific conditions in order to improve the fidelity of all levels of full flight simulators, flight training devices, and aviation training devices. The team continued to examine data from the FAA’s S76 simulator during trials conducted in October 2020 through May 2021 including Inflow and AoA models as well as prepare for receipt of data from other simulators based on sample data obtained by the research team. Also, several members of the team presented findings from their research activities at VFS Forum 77 during the Safety session. The team also engaged in further discussions with several H-SE participants regarding some of the technologies (i.e., Virtual Reality) for simulator/flight training device model fidelity improvements. In addition, the team continued work on a document to identify and rank conditions of interest to address as part of the research and added accident/incident data and examples of each condition, while discussing and prioritizing conditions of interest.

2. Any other notes or needs from Steering Committee: Due to the COVID-19 pandemic outbreak, all work on the simulator and upcoming flight-testing has been delayed as the FAA has been relegated to telework only status and the simulation facility was shut down. However, beginning in October 2020 and continuing in January 2021, the team started limited Phase 1 Activities in the simulator to support future experimental trials for Simulator Device Fidelity using the S76 simulator. Dates for additional simulator work and other studies are still to be determined based on several factors related to the pandemic including the revision of the FAA’s IRB. The FAA still has not resolved the grounding of the FAA Helicopter, which has now become permanent. The H-SE focal is working with industry counterparts to identify another comparable helicopter for lease or purchase to complete the research activities and support the H-SE. This issue also affects H-SE 82 on HFDM and will eventually also affect H-SE 91 on Vision Systems and potentially other H-SE’s such as H-SE 127 where the focals are collaborating and sharing resources including flight test rotorcraft like the FAA’s S76.
H-SE 82 – Helicopter Flight Data Monitoring

Focal: Jeff Byrd (jbyrd@eit.com)
Champion: Raj Helweg

- **Output 1:**
  1. 90% complete (red)
  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 to 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. Sent email to several people to query interest on engaging in the monthly HSE 82 meetings, which stared again in March.
H-SE 90 – Use of UAS or OPA in High Risk Environments/Operations

Focal: Outreach Team: Chris Young & Shawn Hayes
Champion: Tony Randall

COMPLETE:
Technology/Equipment: FAA and industry to encourage the increased use of UAS (Unmanned Aircraft Systems), and continued development and integration of OPA (Optionally Piloted Aircraft) or autonomy-enabled helicopters, to supplement and support manned operations in high-risk operations or environments.

CLOSEOUT COMMENTS:

• As the Industry awaits Remote ID regulations (scheduled to be released before the end of the year), the H-SE 90 SME Team has been at an impasse as to how to proceed with this H-SE. Our volunteer organization is not in a position, or should be in a position, to force the manned helicopter community to switch to UAS or OPA for risky low level jobs where there are an inordinate amount of fatalities. If a transition occurs to UAS or OPA, it will happen when and where appropriate in sectors of the industry where it makes sense and is cost effective. And, another major stumbling block at the current time are restrictions on flying over people, flying at night, and flying Beyond Visual Line-of-Sight (BVLOS). None of these can currently be accomplished without a waiver from the FAA. The FAA is diligently working on Unmanned Aircraft System Traffic Management (UTM) and Urban Air Mobility (UAM) plans to integrate UAS, OPA, and UAM air vehicles into the NAS. The FAA is also working with Industry to develop standards for Detect and Avoid (DAA) and Vehicle to Vehicle (V2V) systems, which for BVLOS flight without a waiver, will be an absolute and complete necessity. What steps the FAA takes after releasing RID rules remains to be seen. Many experts in the industry believe future efforts will hinge on rules for night flight, flight over people, and UAS type certification rules or standards. Currently, all Part 135 BVLOS package and food delivery waivers in the U.S. are for testing inside of IPP test site areas. Once those flights move out of IPP areas, operators will need either a Section 44807 (formerly known as Section 333 exemption prior to the FAA Reauthorization Act of 2018), or apply for a Part 21.17(b) Special Class Category aircraft certification (*Docket No. FAA–2019–1038, issued September 18, 2020). Another avenue the FAA might pursue is another NPRM for DAA/V2V. Or, the FAA could simply wait for Industry Standards to be developed on these much needed collision avoidance systems.

• At this time, the Steering Committee agrees that this H-SE should be deemed completed because of the following: Output #3 called for continued face-to-face opportunities, social media, website presence, and other forms of media to communicate the findings of the UAS/OPA Team. A great deal of communication has been accomplished in the past 18 months, but now the promotion of this initiative can be passed to the USHST Outreach Team, Unmanned Aircraft Safety Team (UAST), the National Agricultural Aviation Association (NAAA), the UAS Working Group within Helicopter Association International (HAI), and the Utility Patrol and Construction (UPAC). Output #4 called for Industry to work with the FAA to develop standards for integrating autonomous and collision avoidance systems into existing helicopters, and outline requirements for future OPA still in development. As stated above, all of this coordination between the FAA and Industry is currently underway. There is no need to duplicate these efforts, so these outreach considerations can also be passed on to the groups listed in Output #3.
**H-SE 91 – Enhanced Helicopter Vision Systems**

Focal: Cliff Johnson (Charles.C.Johnson@faa.gov)

Champion: Dawn Groh

**Output 1: 100% Complete**

**Output 2: Technology & Equipment H-SE Status**

- **Target**: 100.00%
- **Complete Status**: 91%
- **SE Number**: 91
- **Vision Focal**: 0.00%
- **Groh SE**
- **Number**: 90

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**Actions:**

1. The recommended approach is for the FAA to pursue the least arduous path to allow availability of some level of vision-enhancing technologies. Preferably, this approach would be no more complex than a revision to policy or guidance. The following represents a potential list of policy and guidance that would require either development or update. There is also one regulatory reference listed also included. Given that rulemaking is a sow, time consuming process, pursuing regulatory change could jeopardize implementation of this H-SE ever occurring and should be pursued only as a last resort, and certainly only if absolutely necessary.
   - Update FAA Order 8260.42B and FAA Advisory Circular 9080-C. Revise FSIMS 8900.1. Update FAA Advisory Circular 90-106A (or create a new AC specific to helicopters).
   - Review § 91.175/176. Consider whether rulemaking is necessary and pursue this path only if necessary for successful implementation of the H-SE.
   - Implement resolution to any issues identified as FAA barriers in Step 2 of Output 1.

**Status:**

1. The research focal attended the May 2021 monthly technical interchange meeting with Lifeflight of Maine regarding Low-Level IFR Infrastructure and Routing which involves a vision system component as part of a national demonstration project. In addition, members of the research team continued to engage and attend follow-up EUROCAE WG-79/RTCA SC-213 regular and plenary meetings of WG-4. Further discussions related to the MASPS are planned in the form of a virtual vision systems summit hosted by the Vertical Flight Society in partnership with HAI and other safety organizations as well as the FAA. The H-SE Team planned and organized the summit which is scheduled to occur June 25, 2021. Additional work by the H-SE Team focused on integrating industry partners’ Vision Systems technologies into the FAA’s S76 simulator for experimental trials planned to occur in fall 2021. In May 2021, additional simulator configuration and testing work took place that followed work that originally began in Oct. 2020. This focused on flight instruments and FMS configuration, weather, scenery, and other aspects of the FAA’s helicopter simulator during functionality testing. Additional vision systems related content and discussion in anticipation of the summit were conducted between H-SE members and those principals presenting as part of the Vertical Flight Society’s (VFS) Forum 77 (Safety and Crew Systems technical sessions), Helicopter Safety Advisory Committee (HSAC) May 2021 Conference, and HeliOffshore’s 2021 Annual General Meeting and Conference. Furthermore, coordination between this H-SE and H-SE #127A is still ongoing, as we have held discussions to assist H-SE #127A with analyzing additional data and to develop videos from the simulator of specific accident scenarios that feature low visibility or degraded visual environments.

2. Any other notes or needs from Steering Committee: Due to the COVID-19 pandemic outbreak, all work on the simulator and upcoming flight-testing has been delayed as the FAA has been relegated to telework only status and the simulation facility was shut down. However, beginning in October 2020 and continuing through May 2021, the team started limited Phase 1 Activities in the simulator to support future EHVS experimental trials such as initial scenario development and experimental design using the S76 simulator. Dates for additional simulator work and other studies are still to be determined based on several factors related to the pandemic including the revision of the FAA’s IRB. The FAA still has not resolved the grounding of the FAA Helicopter, which has now become permanent. The H-SE focal is working with industry counterparts including OEM’s (i.e. Sikorsky, Leonardo) to identify another comparable helicopter for lease or purchase to complete the research activities and support the H-SE. This issue also affects H-SE 82 on HFDM and will eventually also affect H-SE 81 on Improve Simulator Modeling and potentially other H-SE’s such as H-SE 127 where the foci are collaborating and sharing resources including flight test rotorcraft like the FAA’s S76.
Group: Training (8 Total H-SEs) – All H-SEs are Active

- H-SE 116 is behind target (red) – “Improve Make/Model Transition Training”
- H-SE 123 is complete – “Increased Simulation/Education to Develop Safe Decision Making”
- H-SE 124 – “Improve Understanding of Basic Helicopter Aerodynamics”
  - Output 4 is ahead of target (green)
  - Output 5 is ahead of target (green)
- H-SE 125 is behind target (red) – “Pre-flight risk assessment for student flights”
- H-SE 127A is ahead of target (green) – “Training for Recognition/Recovery of Spatial Disorientation”
H-SE 115/128 – Threat and Error Management for Initial and Recurrent Pilot Training

Steering Committee decided to “Table” H-SE 115/128 at Heli-Expo 2019.
Portions of this H-SE plan to be incorporated under H-SE 30, via work already being accomplished.

Refer to H-SE 30 page 15 for status.
H-SE 116 – Improve Make/Model Transition Training

Focal: Stacia Joyce (Stacia.Joyce@airmethods.com)
Champion: Raj Helweg

- **Output 1:**
  1. 25% 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. New focal identified, Stacia Joyce. Previous focal (now Champion) will stay on to help shepherd this one to the finish line.
  2. Focal has reached out via email to the contacts that Tony Molinaro provided. These folks included people from TOPS, EAA, GAJSC, APSA (formerly ALEA), in hopes of assembling a team to work on SE 116. The only person who responded was Bryan Smith. I will reach out again this month because of the holidays. I also reached out to someone with King Schools to see about future involvement, again no response.
H-SE 117 – Competency-based Training and Assessments in Initial Pilot Training

Steering Committee decided to “Table” H-SE 117 at Heli-Expo 2019.
Portions of this H-SE plan to be incorporated under H-SE 30, via work already being accomplished.

Refer to H-SE 30 page 15 for status.
Steering Committee decided to “Table” H-SE 122 at Heli-Expo 2019.
Portions of this H-SE plan to be incorporated under H-SE 30, via work already being accomplished.

Refer to H-SE 30 page 15 for status.
**H-SE 123 – Increased Simulation/Education to Develop Safe Decision Making**

**Focal:** Nick Mayhew (nick.mayhew@L3Harris.com)

**Champion:** N/A

**COMPLETE:**

OUTREACH: Plan executed with FAA and Precision Flight Controls (PFC) on H-SE 123 outreach at Helicopter Institute in Fort Worth TX and ERAU in Prescott AZ (VR devices delivered 9 April 2021) as Heli Expo New Orleans was cancelled. Final script for the 3-4 minute “YouTube” style video that will promote the RP now complete; Frasca has started the production on their AS350 FTD or other devices as available and the video will be released as soon a practical. Nick is also in discussion with the FAA Rotorcraft Collective working group who may wish to use the video in their outreach program.

**CLOSEOUT COMMENTS:**

- Held monthly web conference meeting Friday 14 May 2021. This closes the H-SE 123 as 100 % complete. There will be no further meetings unless required for outreach. H-SE 123 Recommended Practice (RP) document released 27 April 2020 and is accessible at USHST.org.

- Nick met with Brad Palmer, Nick DeLotell and Eddie Miller from FAA (AFS 800) on Wed 19 May 2021 and it was agreed to no longer pursue the AC route as the FAA stated that it would not get through their legal review. We agreed to shift the outreach of the H-SE to the FAASTeam to reach the CFI population and add it to their annual plan. **THIS ACTION ALLOWS 100% H-SE 123 COMPLETION AND THIS H-SE IS HEREBY DECLARED CLOSED AND COMPLETE.** A small working group will continue to work on producing the promotional video and other outreach as deemed necessary.
**H-SE 124 – Improve Understanding of Basic Helicopter Aerodynamics**

*Focal: Tim Tucker (pilottucker@earthlink.net)*  
*Champion: N/A*

**Output 4:**
1. 50% complete (green)
2. Revise AC 61-83 (Nationally Scheduled, FAA-Approved, Industry-Conducted Flight Instructor Refresher Course) to add critical helicopter aerodynamics to the core topic list.

**Actions:**
1. The FAA to coordinate with the USHST SEA Training Team to revise AC 61-83 to include helicopter critical aerodynamic state recognition and recovery information.
2. FAA to release an updated advisory circular.

**Status:**
1. The FAA has published the new HFH late October, which completes Output 1 and Output 2.
2. Due to the release of the new HFH, Output 3 is no longer required.
3. Output 4 – status report is 50% complete.

**Output 5:**
1. 50% complete (green)
2. Develop presentations/promotional materials regarding identification of and response to vortex ring state, low RPM rotor stall, and low G mast bumping for use by the training community.

**Actions:**
1. USHST SEA Training Team to develop materials for the training of industry on identification of and response to vortex ring state, low RPM rotor stall, and low G mast bumping, including PowerPoint presentations.
2. USHST SEA Training Team to conduct outreach to distribute materials to training community.
H-SE 125 – Pre-Flight Risk Assessment For Student Flights

Focal: David Dziura (david.dziura@gmail.com)
Champion: TBD

- **Output 2:**
  1. 60% complete (red)
  2. Develop guidance for the inherent risks associated with the flight training environment, thereby allowing mitigation to be implemented to reduce the risk as low as reasonable possible (ALARP) prior to and during the training flight.

- **Actions:**
  1. USHST Training Team is to develop and issue guidance based on the information obtained from Output 1.
  2. USHST Training Team to promote the pre-flight risk assessment guidance to flight training organizations.

- **Output 3:**
  1. 40% complete (red)
  2. Deliver suggested pre-flight risk assessment guidance to the FAA for possible development into an Advisory Circular to support establishing a standard for pre-flight risk assessments on training flights.

- **Actions:**
  1. USHST Training Team to meet with FAA (AFS-800) to review results of the recommended practices consolidated by industry and discuss development of an Advisory Circular (AC) supporting pre-flight risk assessment guidance for training.
  2. AFS-800 should consider AC development using the results of the USHST’s work.

- **Output 4:**
  1. 35% complete (red)
  2. If an AC is developed, then promote the contents of the AC to flight instruction organizations.

- **Actions:**
  1. The text of H-SE 125 specifies several methods for promotion of this H-SE. Please refer to H-SE 125 Output 4 Actions 1-4. Document progress of outreach effort (who contacted, number of attendees, etc).

- **Status:**
  1. No Advisory Circular will be developed at this time, per Nick Mayhew. Instead developing a USHST Safety Bulletin for publishing. Focal has most of the SB text written, almost ready for review.
  2. Implementation and improvement of Pre-Flight Risk Assessment at major training and instructor access locations is on-going.
H-SE 127A – Training for Recognition/Recovery of Spatial Disorientation

Focal: Jill Browning (jill.g.browning@lmco.com)
Champion: Chris Lowenstein (chris.o.lowenstein@lmco.com)

• Output 2:
  1. 95% complete (yellow)
  2. Create helicopter unique SD training products to include simulation technology.

• Actions:
  1. Define SD scenarios for emphasis in training products (use 52 fatal accidents analyzed by the USHST LoC-I/UIMC/LALT working group as starting point).
  2. Coordinate education materials to define simulation technology.
  3. Create educational materials (fact sheets, articles, video, lesson plans, scenarios, etc).
  4. Report completion to USHST SAT.

• Status:
  1. This will ultimately inform the content of the training products. Great progress and team expansion to include training support individuals. Sending white paper for USHST peer review end of this week, due end of month. Next step for team will be simulator and flight training scenarios. Some collaboration with HAI training.

• Output 3:
  1. 60% complete (green)

• Actions:
  1. Use all available media outlets (Rotor Safety Challenge at Heli Expo, regional FAAST conferences, other safety conferences) to promote and distribute SD training products and technology.
  2. USHST Outreach Team will track use of SD training products.
     a) Track purchase, usage, and installation of SD training products and simulation technologies.
     b) Survey whether end users find the new products effective.

• Status:
  2. Still working on developing the actual training that we will deploy but the good news is that the white paper is officially released on the USHST website. It’s also made its way into multiple reference documents. Some specifics were actually referenced in the NTSB meeting on the Calabasas S-76 accident last year. The HSE 127A team plans to present at the 31 March USHST All Hands. We’ve also been working closely with the HAI training team to ensure consistency between the messaging to the community on IIMC and Spatial Disorientation. We are now shifting our efforts to develop training specific scenarios for simulator and in aircraft. We will again work to deconflict duplication with HAI and also ensure consistency in the message for those training scenarios. With the release of the white paper, we are poised to call this output complete but will continue to work on different media to transmit the message to industry (video, CBT, FAAST, HAI Training, published recommended scenarios.)