GAJSC

46 Safety Enhancements developed to date
29 completed and **17 underway**
Updated March 18, 2020

**** Completed = All GAJSC actions have been completed***
**** Underway = All GAJSC actions have not been completed***

Safety Enhancement 1: Angle of Attack (LOC-I – WG1)

Angle of Attack Systems – New & Current Production (completed)

This safety enhancement designs and implements a public education campaign on the safety benefits of AOA systems supplementing existing stall warning systems in new and current production aircraft. The campaign includes both pilot and manufacturer communities.

Safety Enhancement 2: Angle of Attack (LOC-I – WG1)

Angle of Attack Systems – Existing GA Fleet (completed)

This safety enhancement designs and implements a public education campaign on the safety benefits of AOA systems supplementing existing stall warning systems in the existing GA fleet. The campaign focuses on owners and operators.

The Aircraft Owners and Pilots Association's Air Safety Institute (AOPA) simultaneously launched an online education course, available to all pilots discussing stalls, spins and AOA. The program continues to this day and has been viewed by over 20,000 GA pilots. Additionally, several accident case study courses discussing Loss of Control-Inflight (LOC-I) have been produced and are offered free of charge to all pilots. More than 50,000 pilots have viewed these programs collectively.

Safety Enhancement 3: Loss of Control (LOC-I – WG1)

Aeronautical Decision Making (ADM) (completed)

This safety enhancement develops and implements a public education campaign raising awareness of the need for ADM, with an emphasis on preflight planning. The initiative will focus on ADM in preflight planning, professional decision making, Flight Risk Assessment Tools (FRAT), and stabilized approaches, missed approaches, and go-arounds.

Safety Enhancement 4: Loss of Control (LOC-I – WG1)

Over-Reliance on Automation (completed)

This safety enhancement improves certain aspects of flight training related to over-reliance on automated flight systems. The focus will be on proficiency in manual flying in the event of failure or malfunction of automated systems.

Several FAA documents relative to the Title 14, Code of Federal Regulations (14 CFR) Part 142 community were updated/produced to address manual flying proficiency: SAFO 13002, Manual Flight Operations, AC 61–93, AC 61–98, Currency Requirements and Guidance for the Flight Review and Instrument Proficiency Check, AC 61–136A, FAA Approval of Aviation Training Devices and Their Use for Training and Experience, and the instrument training handbook.

Safety Enhancement 5: Loss of Control (LOC-I – WG1)

Transition Training – Tools (completed)

This safety enhancement develops Web-based tools that will aid in all aspects of transition to unfamiliar aircraft across GA, to include ADM, to identify the risk of inadequate training when operating unfamiliar equipment. This safety enhancement also includes a public education campaign on the importance of transition training.

An online course that addresses transition training in a variety of aircraft has been released - co-sponsored by FAA, GAMA and AOPA.

Safety Enhancement 6: Loss of Control (LOC-I – WG1)

Transition Training – Letters of Deviation Authority (completed)

This safety enhancement provides for amendment of current policies to more easily allow letters of deviation authority (LODA) from 14 CFR 91.319(a) through (h) for transition training in experimental aircraft.

Safety Enhancement 7: Loss of Control (LOC-I – WG1)

Utilization of Type Clubs (completed)

This safety enhancement asks type clubs and operator groups to review their airplanes' existing procedures, and develop simplified procedures and checklists for missed approach, go-around, and other critical phases of flight to determine whether or where pilots are getting task-saturated/fixated in an effort to reduce the likelihood of fatal LOC accidents caused by high pilot workload.

Safety Enhancement 8: Loss of Control (LOC-I – WG1)

Flight Training after Period of Flight Inactivity (completed)

This safety enhancement develops and implements an awareness campaign to reduce LOC accidents resulting from returning to flying after periods of flight inactivity. To support this work, the Aircraft Owners and Pilots Association (AOPA) launched a Rusty Pilot Program in March of 2014. Several seminars and classes have been held around the country by AOPA in partnership with flight schools and flying clubs. Several more events are currently scheduled.

Safety Enhancement 9: Loss of Control (LOC-I – WG1)

Part 135 Safety Culture (completed)

This safety enhancement develops and implements a publication education campaign on the safety benefits of standard operating procedures for 14 CFR part 91 positioning legs, FRAT, and Safety Management Systems.

Safety Enhancement 10: Loss of Control (LOC-I – WG1)

Stabilized Approach and Landing (completed)

This safety enhancement promotes and emphasizes the use of the stabilized approach and landing concepts through training and guidance material changes. Adequacy of the existing guidance and advisory material on go-arounds will be reviewed. Emphasis will be placed on the effects of wind on traffic pattern operations during flight review and transition training. The FAA (AFS-800) has published these documents.

[*NOTE: There is no SE 11.*]

Safety Enhancement 12 – Revision 1: Loss of Control and Controlled Flight Into Terrain (LOC-I – WG1 and CFIT WG)

Weather Technology (underway)

This safety enhancement investigates and deploys cost-effective technologies that can provide real-time weather information (including actual conditions as viewed through a remote camera) at airports, similar to what is being done in other parts of the United States, such as Alaska.

Safety Enhancement 13: Loss of Control (LOC-I – WG1)

Weather Technology (completed)

This safety enhancement educates the GA community on and promotes the use of available weather information technologies, such as the National Oceanic and Atmospheric Administration (NOAA) Aviation Digital Data Service (ADDS) icing tool.

Safety Enhancement 14: Loss of Control (LOC-I – WG1)

Engine Monitoring Technology (completed)

This safety enhancement develops a public education campaign based on the current available technological capabilities on the use of engine monitoring, engine analysis, and fuel-monitoring/indicator systems. As part of this work, GAMA conducted a review of the capabilities of existing engine monitoring technologies.

Safety Enhancement 15: Loss of Control (LOC-I – WG1)

Flight after Use of Medications with Sedating Effects (completed)

This safety enhancement includes a public/education/outreach campaign to promote the understanding of the effects of medications and the need to use current FAA recommendations and guidance on flying while under the influence of medications to ensure medications do not decrease a pilot's alertness and increase the risk of impairment of the airman's flight capabilities. The FAA, Jeppesen, and other flight training instruction content organizations will include medication awareness training for all pilots in their training curriculums. They will incorporate the "I'M SAFE" personal checklist from the Aeronautical Information Manual into the training curriculum, as well as all preflight risk assessment tools for use before each flight. Medical organizations will be encouraged to provide guidance to physicians to emphasize the importance of learning if patients are pilots and to recognize the importance of educating pilot patients about the possible hazards to flight associated with medications prescribed to or used by them.

Safety Enhancement 16: Loss of Control (LOC-I – WG1)

Flight with Impairing or Incapacitating Medical Conditions (completed)

This safety enhancement recommends the FAA Medical Certification Division improve electronic medical records to assist the applicant in accurately reporting previously reported historical medical events/records so that Aviation Medical Examiners have a complete and accurate history when providing medical examinations.

Safety Enhancement 17: Approach and Landing (LOC-I – WG1)

Flight with Impairing or Incapacitating Medical Conditions (completed)

This safety enhancement asks AOPA and Experimental Aircraft Association to work with the pilot community to determine additional methods to overcome barriers to open and honest communications on potentially hazardous medical issues and improve pilot professionalism and the ability to conduct accurate pilot medical self-assessment before each flight. This work included an AOPA developed a survey that was included in AOPA and EAA electronic newsletters. The groups received 2,297 responses and the results were used in the development of the online medical self-assessment course.

[*NOTE: There is no SE 18, 19, or 20.*]

Safety Enhancement 21: Loss of Control (LOC-I – WG1)

Risk Based Flight Review (completed)

This safety enhancement requires the FAA to compile and disseminate risk-based concerns to flight instructors and flight schools to highlight regional and national risks in training and flight reviews. National risk-based concerns identified by the GAJSC in studies for that year should also be shared.

Safety Enhancement 22: Approach and Landing (LOC-I – WG1)

Flight Data Monitoring (completed)

This safety enhancement aims to increase GA participation in Flight Data Monitoring (FDM) programs by creating a public education campaign on the safety benefits of FDM programs; assessing the GA community's current sentiment, perception of, and understanding of FDM before and after the public education campaign; determining the incentives, if any, required to generate a meaningful level of GA participation in a national FDM program; and creating a non-punitive policy to promote the use of voluntary GA FDM programs similar to that used with FOQA. Hold an Aviation Safety InfoShare-like conference to communicate best practices and encourage other fleet operators and individual owners/operators to participate in a national FDM program.

Safety Enhancement 23: Loss of Control (LOC-I – WG1)

Experimental-Amateur Built/Flight Test (completed)

This safety enhancement calls on the FAA and industry to develop a public education campaign based on best practices to guide experimental-amateur built (E-AB) aircraft builders on when to reenter a structured flight test phase following a modification to an aircraft. The FAA and industry will review and revise the adequacy of the existing guidance and advisory material on the issue of center of gravity limits, including lateral, for amateur-built experimental aircraft.

Safety Enhancement 24: Loss of Control (LOC-I – WG1)

Single-Pilot CRM (completed)

This safety enhancement identifies best practices regarding single-pilot CRM. The identified best practices should be communicated to the GA community through a public education campaign. This outreach was completed February 2014.

Safety Enhancement 25: Loss of Control (LOC-I – WG1)

Reduce Regulatory Roadblocks (completed)

This safety enhancement is for the FAA to institute streamlined processes in its Office of Aviation Safety (AVS) for certifying and installing novel technology that has a high probability of safety benefits with an accompanying low safety risk.

Safety Enhancement 26: Loss of Control (LOC-I – WG1)

Reduce Regulatory Roadblocks (completed)

This safety enhancement involves the 14 CFR Part 23 Reorganization Aviation Rulemaking committee (ARC) developing the top-level industry standard, as well as a lower tier standard for the existing fleet of small airplanes. The objective of this Part 23 tier is to provide standards appropriate for alterations and modifications of older Part 23, Civil Air Regulations (CAR) 3, CAR 4a, and Aeronautics Bulletin No. 7 airplanes. The criteria should include standards for safety-enhancing, non-required equipment as well as for general alterations. The burden of proof for low-risk safety-enhancing modifications would be that the equipment does not interfere with existing certified hardware. By providing current standards, FAA approval of safety-enhancing updates should be more efficient and less costly.

Safety Enhancement 27: Loss of Control (LOC-I – WG1)

Reduce Regulatory Roadblocks (completed)

This safety enhancement calls for a review of 14 CFR21.8 and 21.9, to make sure these rules are not unintentionally producing roadblocks to the installation of non-required, safety-enhancing equipment. If these rules are creating an unintended roadblock, create paths that are most cost effective up to and including the exemption process.

Safety Enhancement 28: Loss of Control (LOC-I – WG2)

Pilot Response to Unexpected Events (completed)

This safety enhancement will be used to educate flight instructors and pilots on the need for preparing for unexpected events in the cockpit, focusing on the importance of briefing for emergencies, positive transfer of controls, and the recognition and management of the "startle response." This safety enhancement will also better prepare pilots for engine failure after takeoff. Work will include developing best practices, refining the takeoff pre-brief to emphasize what action will be taken dependent on the current situation, and recommend training/practicing the developed best practices on a regular basis.

[*NOTE: There is no SE 29.*]

Safety Enhancement 30: Loss of Control (LOC-I – WG2)

Medication List for Pilots (underway)

This safety enhancement is to develop a medication list, easily available to all pilots and available online, of approved or acceptable medications along with disqualifying medications. The online tool should provide accurate aerospace medical guidance about the most common acceptable and unacceptable medications with recommended return-to-duty times following the use of these medications and provide information about drug interactions. The underlying conditions the medication treats should be highlighted.

Safety Enhancement 31: Loss of Control (LOC-I – WG2)

Test Pilot Utilization and E-AB Pilot Proficiency (completed)

This safety enhancement will improve amateur-built flight testing safety through greater understanding of test pilot qualifications and a listing of test pilots willing to work with homebuilders.

Safety Enhancement 32: Loss of Control (LOC-I – WG2)

Airman Certification Standards (underway)

This safety enhancement establishes standards for pilot testing and training, to include introducing risk-based decision making at the earliest point practical in airman training.

Safety Enhancement 33: Loss of Control (LOC-I – WG2)

Safety Culture (underway)

This safety enhancement improves the safety culture of general aviation, to include industry promotion of local flying clubs and pilot associations to help foster an environment of education and mentoring for pilots.

Safety Enhancement 34: Loss of Control (LOC-I – WG2)

Outreach (completed)

This safety enhancement calls for new, improved, and effective communication to the pilot community on the following topics:

- Importance of abiding by limitations and knowledge of aircraft performance
- Primary duty of a pilot being to fly the aircraft – Aviate/Navigate/Communicate
- Scenario-based training for handling spatial disorientation
- Need for training and currency when flying in mountainous areas
- Importance of certified flight instructors and airmen establishing, maintaining, and adhering to personal minimums

Safety Enhancement 35: System Component Failure - Powerplant (SCF-PP WG)

Mitigating the Risk of Improper Torqueing (underway)

To help prevent fatal general aviation accidents due to failure of the powerplant system, the general aviation community should educate the maintenance community about the fatal and other accident risk caused by improper torqueing techniques. The community should also determine if there are potential technology solutions for new and legacy aircraft that can cost effectively be implemented to eliminate or mitigate the risk of improper torqueing. One technology that should be considered is Direct Tension Indicating (DTI) technology utilizes visual indications for mechanics to confirm proper torque. Currently, ASTM F959 provides a standard for compressible washer DTI for structural engineer. In their current state, they are single-use mechanical load cells used to indicate when the required tension has been achieved in structural fastener assemblies.

Safety Enhancement 36: System Component Failure - Powerplant (SCF-PP WG)
V_{mc} Scenario Training (underway)
FAA and industry to encourage the development of training scenarios based on fatal accidents caused by VMC related LOC to be used in multiengine training.

Safety Enhancement 37: System Component Failure - Powerplant (SCF-PP WG)
Multi-engine Emergency Management Technology (underway)
Encourage a research program to develop requirements and performance specifications for proposed VMC-imminent warning device designs under asymmetric thrust conditions, as well as research and develop technological solutions to prevent pilots from feathering the wrong engine. FAA/industry to implement developed solutions.

[*NOTE: There is no SE 38.*]

Safety Enhancement 39: System Component Failure - Powerplant (SCF-PP WG)
Smart Cockpit Technology (completed)
Industry to research and develop smart cockpit technology that helps identify emergency situations, prompts pilots (aurally/visually) through pertinent checklist items, and provides instructions based on aircraft position and condition of flight.

[*NOTE: There is no SE 40.*]

Safety Enhancement 41: System Component Failure - Powerplant (SCF-PP WG)
Survivability (completed)
FAA/industry to research survivability issues and potential solutions (air bags, shoulder harnesses, UV wear indication, helmets, fire prevention, ballistic parachutes, etc.) and implement recommendations.

Safety Enhancement 42: System Component Failure - Powerplant (SCF-PP WG)
Mitigating V-Band Clamp Failures (underway)
To help prevent fatal general aviation accidents due to failure of the powerplant system, the general aviation community should develop an appliance-specific document addressing the safety of exhaust related v-band clamp assemblies.

Three accidents were identified with v-band clamp issues in the SCF-PP analysis. Specifically noted were fatigue cracking at spot welds that led to exhaust leaks which then propagated into inflight fires and powerplant failures. In some cases the v-band clamp cracking was due to improper installation and in other cases corrosion. In addition to being noted in the SCF-PP dataset, historical documentation has noted an ongoing issue with v-band clamps (reference NTSB accident investigations, and OEM and FAA service documents). Considering the three representative accidents, as well as the historical OEM, FAA, and NTSB documents, the FAA shall investigate the need for an appliance-specific airworthiness directive.

[*NOTE: There is no SE 43.*]

Safety Enhancement 44: System Component Failure - Powerplant (SCF-PP WG)
Modernized Maintenance Safety Reporting System (underway)
FAA evaluate the feasibility of a modernized maintenance data exchange program to take the place of the current M&D/SDR process and improves the ability to identify issues/trends with components across multiple OEMs and across multiple certification offices.

Safety Enhancement 45: System Component Failure - Powerplant (SCF-PP WG)
Maintenance Placard (completed)
Industry to research and develop smart cockpit technology that helps identify emergency situations, prompts pilots (aurally/visually) through pertinent checklist items, and provides instructions based on aircraft position and condition of flight.

[*NOTE: There is no SE 46.*]

Safety Enhancement 47: System Component Failure - Powerplant (SCF-PP WG)
A&P Education and Training (underway)
Improved guidance and improved availability of guidance to maintenance professionals and improved training and outreach. Additionally, compilation of research and additional research as required in regards to human factors in maintenance.

Safety Enhancement 48: System Component Failure - Powerplant (SCF-PP WG)
Ignition Systems (underway)
Improve reliability in reciprocating engine ignition systems through research and possible promotion of alternative ignition systems.

Safety Enhancement 49: System Component Failure - Powerplant (SCF-PP WG)
Outreach (completed)
This safety enhancement calls for new, improved, and effective communication to the pilot community on the following topics:

- Outreach to airframe and powerplants (A&P) on the importance of checking critical parts during work that r these parts accessible, even if parts are not the subject of maintenance.
- Outreach to pilots on emergency situations and survival training.
- Outreach to pilots on engine maintenance and monitoring engine performance.
- Outreach regarding the broader use of FADEC systems.
- Outreach that highlights existing guidance on determining the best glide speed and distance for amateur-buil
- Smart Cockpit Technology, see SE 39
- V-Band Clamp Failures and Turbocharger Safety
- Enhanced Vision Systems

Safety Enhancement 51: Controlled Flight Into Terrain (CFIT WG)
Augmented Visual Technology for GA (underway)

Encourage GA pilots and operators to equip and utilize Enhanced Vision System (EVS)/Synthetic Vision System (SVS) technology to enhance situational awareness with respect to surrounding terrain.

Safety Enhancement 52: Controlled Flight Into Terrain (CFIT WG)
WINGS Program Overhaul (underway)

FAA to overhaul and develop a plan for continual improvement of the FAA Pilot Proficiency Program (WINGS) to make it more user-friendly and dynamic. Aspects of the current WINGS program's automation are not user-friendly, especially for tablet and smartphone users. To encourage greater use of the program and reach more pilots, the CFIT working group recommends refreshing the program's automation so that it is more user friendly and will work easily on all user devices. In addition, the working group recommends reviewing/updating the program's training content to ensure it is all up to date and includes CFIT-specific information from the CFIT Working Group's efforts.

Safety Enhancement 53: Controlled Flight Into Terrain (CFIT WG)
Pressure to Complete a Mission (underway)

To identify opportunities for improving awareness of the need to mitigate mission completion pressure on piloting, including sources and types of pressures, and the impact on decision-making. External pressures, while difficult to anticipate, can influence a pilot's aeronautical decision-making, causing distraction and potential deviation from SOPs. The SE recommends conducting a review of existing measures intended to address pressure to complete a flight, and identifying new opportunities for improved education and outreach to the flying community on the importance of managing pressure.

Safety Enhancement 54: Controlled Flight Into Terrain (CFIT WG)
TAWS for GA, Addressing Time-Limited Inhibit, and Future Auto Ground Collision Avoidance (underway)

Improve TAWS capabilities and algorithms to better protect pilots operating in areas with challenging terrain, and develop additional safety protections to prevent the permanent inhibition of nuisance TAWS alerts during a terrain-critical flight.

Safety Enhancement 58: Controlled Flight Into Terrain (CFIT WG)
Approach Guidance in Night/Mountainous VFR (underway)

To further prevent controlled flight into terrain (CFIT) accidents, the FAA along with pilot organizations, flight instructor refresher course (FIRC) providers, and training providers should conduct an education campaign and/or develop learning modules educating the **instrument-current** pilot community **of the safety benefits of backing up a nighttime VFR approach with lateral and vertical navigation guidance**, particularly in mountainous terrain.

One additional CFIT SEs to be added to list after review and final edits