



FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: 2026-05

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SUBJ: Rotorcraft Loss of Control Prevention/Recovery Systems

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) provides information to help rotorcraft owners, operators, aircrew, and passengers understand how some loss of control incidents and accidents, including those caused by UIMC (Unintended entry into Instruments Meteorological Conditions), also called IIMC (Inadvertent entry into Instruments Meteorological Conditions), can be prevented through the use of technology such as Stability Augmentation Systems (SAS), Stability Control Augmentation Systems (SCAS), and Autopilot Systems. This SAIB also expands the list of safety enhancements available through the voluntary Rotorcraft Safety Promotion Concept (RSPC). RSPC is intended to encourage installation of safety features such as SAS, SCAS, and Autopilot Systems to reduce the risk of loss of control incidents and accidents for both 14 CFR part 27 and part 29 rotorcraft.

The subject matter of this SAIB does not warrant airworthiness directive (AD) action under 14 CFR part 39. However, operating a rotorcraft with SAS, SCAS, and/or Autopilot systems can reduce the risk of UIMC and loss of control incidents and accidents.

Background

Loss of control during flight was one of the three highest occurrence categories contributing to fatal rotorcraft accidents in the U.S. from 2009-2023, according to analysis of approximately 300 fatal accidents from the United States Helicopter Safety Team (USHST). About 20% of the fatal accidents were categorized as loss of control during flight. This percentage increases to 35% if the 15% of UIMC fatal accidents are included. UIMC is a separate occurrence category, however, once UIMC occurs, the typical sequence is that loss of control occurs shortly thereafter, often leading to a fatal outcome. Stability systems that either aid in preventing loss of control or initiate recovery when loss of control is deemed imminent may have a substantial impact in fatal accident reduction.

In 1983, appendix B of parts 27 and 29, Airworthiness Criteria for Helicopter Instrument Flight (IFR), became a regulatory requirement via Amendment 27-19 and 29-21, respectively. The requirements contained in appendix B increase the rotorcraft's minimum handling qualities, establish an IFR flight envelope, and ensure information required to operate in IFR remains available to the flight crew after instrument display failures. The increase in handling qualities requiring positive stability is achieved through technology such as SAS or SCAS and typically a 3-axis Autopilot. Therefore, rotorcraft certified for IFR operations are best equipped to lower pilot workload and prevent loss of control accidents, including those brought on by UIMC. However, the appendix B IFR regulations only apply to newly type-certificated rotorcraft or previously type-certificated rotorcraft seeking approval for operations in the IFR infrastructure. Rotorcraft intending to only operate in the VFR infrastructure are not required to

meet the appendix B IFR regulations. Therefore, the appendix B IFR regulations are optional, as rotorcraft are not required to be IFR-certified. There are no requirements to incorporate these IFR requirements into new type design approvals or the existing fleet.

The design requirements included in Appendix B of part 27 at Amendment 27-19 and part 29 at Amendment 29-21 increase safety in the event of UIMC and other possible causes of loss of control by increasing the rotorcraft's stability and handling qualities and decreasing pilot workload. This results in decreasing the likelihood of an incident or accident.

In a Notice of Proposed Rulemaking (NPRM) titled, "Air Ambulance and Commercial Helicopter Operations, 14 CFR part 91 Helicopter Operations, and 14 CFR part 135 Aircraft Operations; Safety Initiatives and Miscellaneous Amendments," published in the Federal Register on October 12, 2010 ([75 FR 62640](#)), the FAA identified loss of control, UIMC, and accidents during night conditions as common factors in helicopter accidents and that these accidents may have been prevented if pilots and helicopters were better equipped for UIMC, flat light, whiteout and brownout conditions, and flight over water. Additionally, it is noted in this NPRM that the NTSB has identified common probable causes of helicopter accidents including spatial disorientation, lack of general awareness, loss of control, poor decision making, failure to maintain clearance of obstacles, inadequate planning, and improper execution of standard operating procedures. SAS and Autopilot systems are being installed into an increasing number of helicopters, including helicopters limited by type design to visual flight rules (VFR), and are an important means for improving flight safety through improvements in stability, handling qualities, and reductions in pilot workload in these aircraft. The NPRM was published as a final rule on February 21, 2014 ([79 FR 9932](#)); the FAA then published a Final Rule; Technical Amendment on January 10, 2018 ([83 FR 1188](#)), to remove an incorrect cross-reference and make corresponding revisions.

SAS and Autopilot Systems are not required equipment for part 27 and 29 rotorcraft limited to VFR; therefore, this SAIB is of a different format than the RSPC Crash Resistant Fuel systems SAIB [2023-03R1](#) and Bird Strike SAIB [AIR-21-17R1](#). This SAIB does not include a make and model listing of rotorcraft models that could be available with these technologies because of the unique nature in which cockpit systems are far more easily equipped with different options, both in new rotorcraft by the OEMs at the customers request and retrofitted on fielded rotorcraft in the same manner. Therefore, this SAIB aims to educate and highlight the value and effective functionality that the various technology solutions can bring to the rotorcraft to combat accident causes such as UIMC and loss of control. This way the owners, operators, and the flying public know what to ask for and why.

The FAA has developed a continuum of safety enhancements for Loss of Control Prevention/Recovery as:

Tier 1: Rotorcraft equipped with either a SAS or a SCAS. These are "hands on" systems, where the pilot is required to continuously have hands on the controls and make continuous flight control inputs, however, the SAS or SCAS is actively working in conjunction with the pilot to dampen forces and aircraft upsets. The handling qualities are improved, and the pilot's workload is thereby reduced.

Tier 2: Rotorcraft equipped with a system that contains, at a minimum, 2-axis autopilots (pitch and roll), and attitude hold capability. These can be installed in addition to and along with a SAS or SCAS, or by

themselves. When engaged within their approved flight envelope, these offer limited “hands off” and require some pilot input with the cyclic axes being controlled by the system, but the pilot still makes inputs on the pedals and collective. Handling qualities are improved as well as higher reductions in pilot workload.

Tier 3: Rotorcraft equipped with a system that contains, at a minimum: 3- or 4-axis autopilots (pitch, roll, and yaw), and attitude and altitude hold capability. These can be installed in addition to a SAS or SCAS, or by themselves. When engaged within their approved flight envelope, these offer full “hands off” or “pilot monitoring” and the cyclic, pedal, and collective axes are controlled by the system. Additionally, these offer outer loop navigational coupling for enroute and approach flying being done by the system. Handling qualities are significantly improved as well as providing a significant reduction in pilot workload.

Recommendations

The FAA recommends if you own, operate, or will occupy a seat in a rotorcraft as a pilot, aircrew, or passenger, you consider the following options to minimize the potential of a loss of control incident or accident.

The FAA introduced a new resource when SAIB AIR-21-17R1 was published, the RSPC. This concept is intended to better inform and educate stakeholders about the continuum of voluntary design and equipment safety enhancement options. SAIB AIR-21-17R1 introduced bird strike designs and mitigations to the RSPC, while SAIB 2023-03R1 introduced design features of CRFS to the RSPC. This new SAIB addresses equipment to prevent Loss of Control, including situations involving UIMC. The RSPC documents related to these subjects are available at:

https://www.faa.gov/aircraft/air_cert/design_approvals/rotorcraft/RSPC.

Each of the 3 tiers on the continuum offers a different safety benefit in terms of loss of control prevention. Stakeholders are encouraged to voluntarily use this resource to determine the design and equipment features that best fit their operational needs, available resources, and personal risk tolerances.

The RSPC is intended to assist you in making an informed risk-based decision. If you are not familiar with some of the terms used to describe the different design features on the RSPC continuum in this SAIB, the FAA recommends the following actions to help you to determine the SAS and/or Autopilot capability of a specific rotorcraft.

- **For those considering owning or leasing a rotorcraft:**

Refer to this SAIB and ask the rotorcraft manufacturer about the SAS, SCAS, and/or Autopilot system installed on their product compared to the RSPC continuum. Rotorcraft manufacturers can provide you information on available FAA-approved design modifications that will improve loss of control prevention.

- **For current owners and operators:**

Refer to this SAIB and ask the rotorcraft manufacturer about available FAA-approved design modifications that will improve loss of control prevention. Review the rotorcraft specific flight manual or supplement to see if the aircraft is approved for IFR operations and has an IFR section in the manual.

If the rotorcraft is not approved for IFR flight operations, determine if a SAS, SCAS, or Autopilot section or supplement is included. If such a supplement does exist, compare its description and operation to the RSPC Tiers in this SAIB to determine its level.

- **For pilots and aircrew:**

Refer to this SAIB and ask your operator about the SAS, SCAS, and/or Autopilot system installed on their rotorcraft compared to the RSPC continuum in this SAIB for Loss of Control. Review the rotorcraft specific flight manual or supplement to see if the aircraft is approved for IFR operations and has an IFR section in the manual. If the rotorcraft is not approved for IFR flight operations, determine if a SAS, SCAS, or Autopilot section or supplement is included. If such a supplement does exist, compare its description and operation to the RSPC Tiers in this SAIB to determine its level.

- **For passengers:**

Refer to this SAIB and ask the operator about the SAS, SCAS, and/or Autopilot system installed on their rotorcraft compared to the RSPC continuum in this SAIB for Loss of Control.

- **For rotorcraft manufacturers and modifiers:**

Refer to this SAIB and contact an FAA Certification Branch if you want to pursue FAA approval of design modifications that will allow your product to meet a higher level of loss of control prevention on the RSPC continuum.

For Further Information on Rotorcraft Loss of Control Prevention/Recovery Systems and this SAIB contact:

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