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ROTARY WING NEWSLETTER

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SAFETYWIRE

FAA Issues SAIB on Bird Strikes for Rotorcraft

FAA Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: AIR-21-17R1
Date: October 3, 2023

SUBJ: Rotorcraft Bird Strike Protection and Mitigation
This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) provides information to help all rotorcraft owners, operators, aircrew, and passengers understand rotorcraft bird strike safety standards. This SAIB also introduces a voluntary Rotorcraft Safety Promotion Concept (RSPC) to encourage installation of safety enhancing designs, use of certain safety equipment, and adoption of operational procedures to mitigate the risk of bird strike for both Part 27 and Part 29 rotorcraft.

The FAA is revising this SAIB to update the Rotorcraft Safety Promotion Concept (RSPC) internet links that were previously listed and to update FAA contact information.

The subject matter of this SAIB does not warrant airworthiness directive (AD) action under 14 CFR Part 39. However, operating a rotorcraft with bird strike safety enhancements and following operational mitigations may reduce the probability of a bird strike occurring. Additionally, some of these recommendations may reduce the likelihood or severity of injuries and limit the damage to the rotorcraft if a bird strike occurs.

Background

Rotorcraft have a unique vulnerability to bird strike in comparison to other aircraft. Most rotorcraft flight profiles are in the low altitude environment below 3,500 feet AGL, an airspace that is also the most densely populated with birds. In their 2017 report to the Aviation Rulemaking Advisory Committee, the Rotorcraft Bird Strike Working Group (RBSWG) cited that more than 90% of bird strikes occurred in this airspace. The outcome of a bird strike to a rotorcraft may vary from benign to catastrophic in nature, depending on variables such as the speed of the rotorcraft, the type of bird, size of bird, and the location on the rotorcraft where the bird impact occurs. A bird strike may lead to a loss of control in-flight, either through damage to a critical system component on the rotorcraft or by penetrating into the crew area and incapacitating the pilot. For a thorough explanation of the risk of bird strike to rotorcraft, the full report for the RBSWG is publicly available at: https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/search/searchResults

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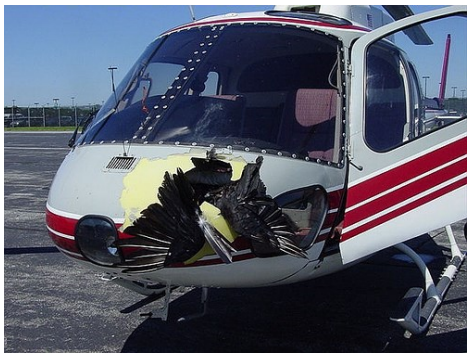
On August 8, 1996, the FAA issued airworthiness standards to protect against bird strike through Amendment 29-40 of 14 CFR Part 29, section 29.631. While this safety enhancing regulation was limited in applicability to newly type certificated transport category rotorcraft, these protections can also be utilized on Part 27 and other Part 29 rotorcraft that fall outside the applicability of the regulation. This offers a particularly significant safety opportunity for Part 27 rotorcraft since they make up about 80-90% of the U.S. registered rotorcraft fleet.

A rotorcraft designed to 14 CFR 29.631 requirements increases the protection to occupants and thus reduces the likelihood of a fatal or incapacitating injury if a bird strike occurs. Some of the same safety enhancing design features that are required of newly type certificated Part 29 rotorcraft may be voluntarily pursued to increase the bird strike protection for Part 27 rotorcraft and also for the Part 29 rotorcraft that were not required to meet the regulation. There is also optional safety enhancing equipment available that offers bird strike deterrence capability that may prevent the bird strike from occurring in the first place.



Aside from design and equipment considerations, operational mitigations can reduce the likelihood of a bird strike by pilots knowing and understanding bird flight patterns and taking appropriate preemptive actions. Finally, personal protective equipment is another aspect of operational mitigation that is important in preventing occupant injury or pilot incapacitation for cases where the bird strike penetrates through the windshield.

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 two options in order to minimize the potential for bird strike and maximize the protection to you if a bird strike occurs.

1. Rotorcraft Design and Equipment Safety Enhancement Options

The FAA is introducing a new resource, the Rotorcraft Safety Promotion Concept (RSPC), to better inform and educate stakeholders about the continuum of voluntary design and equipment safety enhancement options related to bird strike. The RSPC documents are available at: https://www.faa.gov/aircraft/air_cert/design_approvals/rotorcraft/RSPC#birdstrike

The different areas on the continuum each offer a different safety benefit in terms of bird strike deterrence or protection. 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.

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For stakeholders interested in the Part 29 rotorcraft that meet the bird strike protection requirements of 14 CFR 29.631, the FAA maintains a list at the same RSPC website: https://www.faa.gov/aircraft/air_cert/design_approvals/rotorcraft/RSPC#birdstrike

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 different areas on the RSPC continuum in this SAIB, the FAA recommends the following actions to help you to determine the bird strike design and equipment capability of a specific rotorcraft.

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

Refer to this SAIB and ask the rotorcraft manufacturer about the bird strike protection and mitigation of their product compared to the RSPC continuum. Rotorcraft manufacturers can provide you information on available FAA approved design modifications that will improve bird strike protection and mitigation.

- **For current owners and operators:**

Refer to this SAIB and ask your local FAA Flight Standards District Office (FSDO) about the bird strike protection and mitigation of your rotorcraft compared to the RSPC continuum. The FSDO may also connect you to an FAA Aircraft Certification Service to assist in answering this question. Rotorcraft manufacturers can also provide you information on available FAA approved design modifications that will improve bird strike protection and mitigation.

- **For pilots and aircrew:**

Refer to this SAIB and ask your operator about the bird strike protection and mitigation of their rotorcraft compared to the RSPC continuum.

- **For passengers:**

Refer to this SAIB and ask the operator about the bird strike protection and mitigation of their rotorcraft compared to the RSPC continuum.

- **For rotorcraft manufacturers and modifiers:**

Refer to this SAIB and contact an FAA Aircraft Certification Service if you want to pursue FAA approval of design modifications that will allow your product to meet a higher level of bird strike protection and mitigation on the RSPC continuum.

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2. Operational Risk Mitigation Options

Reasonable flight planning and in-flight decisions can keep the rotorcraft away from bird rich environments and help prevent bird strikes. In the event a bird strike does occur, personal equipment is an important consideration that offers protection. Among the RBSWG's operational recommendations were the following.

- ***Learn about the local bird population and use it to plan and fly your route.*** Among the key considerations are seasonal migratory times and concentration patterns within your typical operating area.
- ***Reduce airspeed when practical.*** Three out of four bird strikes (77%) occur during airspeeds greater than 80 knots. When operating rotorcraft in areas of high bird concentrations, the likelihood of a damaging bird strike goes up as airspeed increases. When operating in these areas, fly at 80 knots or less, particularly when at lower altitudes.
- ***Increase Altitude.*** Increase altitude as quickly as possible and practical, when allowed by other flight variables. There is a 32% decrease of bird strike likelihood for every 1,000 feet gained above 500 feet AGL. Also, birds fly higher at night, so you will have to increase your altitude even more than during the day to try to avoid them.
- ***Wear Personal Protective Equipment (PPE).*** A helmet and visor, at least for the crew, should be worn when practical. This is one of the simplest acts that can improve safety in rotorcraft operations.

Reminder on Reporting Incidents

Report all wildlife strikes at https://wildlife.faa.gov/home.

For Further Information, Contact

Information on Design and Equipment Safety Mitigations and this SAIB contact:

Jorge Castillo, Manager, Product Policy Management: GA, Airplanes, Rotorcraft & Emerging Airrcraft., Policy and Standards Division, 10101 Hillwood Parkway, Fort Worth, Texas, 76177; phone: (817) 222-5110; fax: (817) 222-5961; email: jorge.r.castillo@faa.gov.

Information on Operational Mitigations contact:

Federal Aviation Administration (FAA) General Aviation and Commercial Division's, Operations Group AFS-830 at 202-267-1100.

Federal Aviation Administration

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FAA Updates Fact Sheet on State and Local Drone Regulations

(Source: Dronelife.com Posted By: Miriam McNabb, August 07,2023)

Since before the passage of Part 107 in 2016, regularizing commercial drone use in the United States, state and local laws – sometimes in conflict with FAA regulations – have developed. This issue is sometimes discussed as Drone Federalism, such as the failed "Drone Federalism Act of 2017," or as FAA Preemption, which is the concept that the FAA rules the airspace from the ground up. Former FAA Administrator Michael Huerta warned against the proliferation of state and local drone laws, saying that a "patchwork quilt" of regulations across the U.S. would only create confusion, limiting the commercial industry and not enhancing safety.

In 2015, the FAA published a "Fact Sheet" to state and local governments (since removed from the FAA website.) In that Fact Sheet, the FAA emphasized their position that airspace regulation belongs strictly to the federal government, citing "authority to regulate the areas of airspace use, management and efficiency, air traffic control, safety, navigational facilities, and aircraft noise at its source."

> *Substantial air safety issues are raised when state or local governments attempt to regulate the operation or flight of aircraft . If one or two municipalities enacted ordinances regulating UAS in the navigable airspace and a significant number of municipalities followed suit, fractionalized control of the navigable airspace could result. In turn, this 'patchwork quilt' of differing restrictions could severely limit the flexibility of FAA in controlling the airspace and flight patterns, and ensuring safety and an efficient air traffic flow. A navigable airspace free from inconsistent state and local restrictions is essential to the maintenance of a safe and sound air transportation system.*

The Softening Stance

Since then, the FAA has softened it's stance somewhat. The 2017 UAS Integration Pilot Program (the precursor of the FAA BEYOND Program) strove to give state and local governments input into the development of drone regulations. State drone laws, however, have continued to be enacted: sometimes to the severe detriment of the commercial industry or without a full understanding of the technology.

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The 2023 Fact Sheet still emphasizes FAA authority, but recognizes the existence of state laws.

> *The general balance between Federal and state authority in the context of aviation regulation is well established. The Federal Aviation Administration ("FAA") has the exclusive authority to regulate aviation safety and the efficient use of the airspace by aircraft. Attempts by state and local governments to regulate in those fields are preempted.1 Outside those fields, the States are generally free to regulate—even by enacting laws that are aimed at or affect aviation—as long as their laws do not conflict with FAA regulations or relate to the prices, routes, or services of commercial air carriers.*

The Fact Sheet clarifies preemption, and provides examples of drone laws that may or may not be preempted.

> - *State laws are subject to conflict preemption when compliance with both Federal and state regulations is impossible, or when the state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.*
>
> - *Even if a state law regulates outside the fields of aviation safety and airspace efficiency and is therefore not covered by field preemption, it may still be preempted if it conflicts with one or more FAA regulations.*

Examples of drone laws that may be preempted by federal aviation regulations include selling or leasing air rights above highways, bans over entire cities, or local licensing or registration fees. State and local drone regulations focused on criminal acts like trespass, voyeurism, criminal mischief, or transportation of controlled substances, would not be preempted.

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Read more:

- https://dronelife.com/2015/12/18/faa-fact-sheet-establishes-authority-over-states-considering-drone-legislation/
- https://dronelife.com/2017/10/26/rep-jason-lewis-uas-integration-pilot-program-doesnt-go-far-enough/
- https://dronelife.com/2018/07/24/faa-stance-on-state-drone-regulation-preemption-is-still-preemption/
- https://dronelife.com/2017/02/24/open-letter-state-local-policy-makers/
- https://dronelife.com/2023/05/11/who-owns-the-airspace-over-my-house-the-chicken-farmer-case-and-advocating-for-reasonable-state-and-local-drone-regulations/
- https://dronelife.com/2020/05/19/faa-and-drone-regulation-should-the-faa-have-excusive-control/

Miriam McNabb

Miriam McNabb is the Editor-in-Chief of DRONELIFE and CEO of JobForDrones, a professional drone services marketplace, and a fascinated observer of the emerging drone industry and the regulatory environment for drones. Miriam has penned over 3,000 articles focused on the commercial drone space and is an international speaker and recognized figure in the industry. Miriam has a degree from the University of Chicago and over 20 years of experience in high tech sales and marketing for new technologies.

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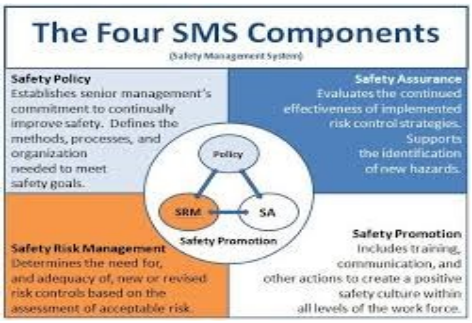
SAFETY MANAGER'S CORNER

Why Safety Promotion?

Safety promotion is an important part of an SMS (one of the four pillars), setting the tone for the organization, and helping to build a robust safety culture while helping to achieve your safety objectives. Safety promotion also helps to foster improved safety performance by communicating lessons learned, broader safety information and the distribution of the SMS manual as well as safety procedures in the organization. The promotion of safety must be recognized as a "core value" within an organization and its management team must always demonstrate its commitment to safety. Your success is directly proportional to the effort your managers put forth – there is no capacity for "lip service". It goes well beyond simply handing out safety awards. Understanding the overall objective and how each employee's role contributes in assuring hazards are identified, risks assessed and effective mitigations are developed and implemented are integral components in establishing a safety oriented culture.



Effective Safety Promotion in an organization includes:

- Promoting a Positive Safety Culture
- Management Involvement
- Personnel Competency and Training
- Communication

One of the easiest ways for managers to discuss the importance of safety on the job is through short safety briefings, or "toolbox talks". You don't have to be a professional speaker to do this well. These are typically done weekly, at the beginning of the work day or at a shift change. Keep the talk informal, limit the length of your discussion, invite your people to participate and encourage them to help suggest possible solutions to issues identified. Choose topics related to recent developments at your organization and pertinent to the work tasks your employees perform. You will find that these toolbox talks are an excellent method to engage your workers and identify (and resolve) real safety related issues within your organization.

Through safety promotion an organization adopts a culture that goes beyond merely avoiding accidents or reducing the number of incidents, although these are likely to be the most apparent measures of success. It is more to do the right thing at the right time in response to normal and emergency situations. Effective safety promotion sets the tone that predisposes both individual and organizational behavior and fills in the blank spaces in the organization's policies, procedures and processes, providing a sense of purpose and direction.

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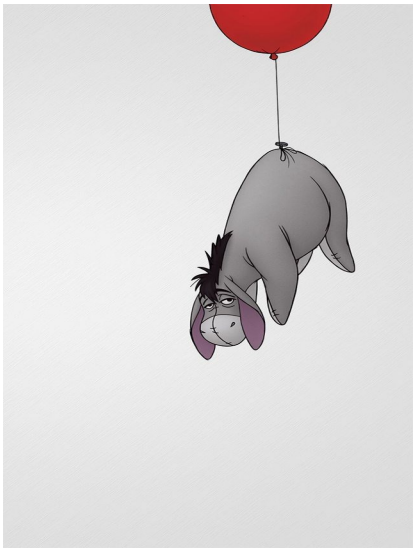
Quote of the Month

“You can't stay in your corner of the Forest waiting for others to come to you. You have to go to them sometimes.”

— A.A. Milne, Winnie the Pooh

Safety promotion is often times overlooked. But communication of an effective SMS is a foundational core principle. Without the buy in from a work group, you’ll never achieve a pro-active system. To get buy in you must leave your corner of the forest and go to theirs. Show them how the system works, and most importantly, show them that you care. When they feel like you have their backs, that you’re fighting for their benefit, that’s when you’ll get the buy in.

On Short Final...



Well folks, the call of the wild blue yonder is loud and pervasive. It has been my distinct pleasure to work with all of you, and the mission is one I truly believe in. It is with heartfelt gratitude I thank my team, and the most sincere best wishes to all of the safety departments we work with, I bid adieu….. “Eeyore” Signing Off!

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