



**SUBJ:** Rotorcraft Crash Resistant Fuel 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 the importance and safety benefits of crash resistant fuel systems (CRFS) for rotorcraft. 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 CRFS designs that reduce the risk of post-crash fires for both 14 CFR Part 27 and Part 29 rotorcraft. This SAIB is a follow-on to SAIB SW-17-31R2, dated December 5, 2019, that previously informed the rotorcraft community of CRFS compliant designs.

The subject matter of this SAIB does not warrant airworthiness directive (AD) action under 14 CFR Part 39. However, operating a rotorcraft with either a full CRFS or partial CRFS reduces the risk of post-crash fires and improves occupant survivability in an accident.

## **Background**

On November 2, 1994, the FAA issued airworthiness standards to increase safety and occupant survivability in the event of a survivable crash by decreasing the likelihood or delaying the onset of post-crash fires. The FAA issued 14 CFR 27.952, Amendment 27-30 and 14 CFR 29.952, Amendment 29-35 along with other related standards to minimize crash-induced fuel leaks and potential fuel ignition sources during and after a crash. These safety enhancing regulations are only mandatory on newly type certificated rotorcraft, but these protections can be utilized on rotorcraft that fall outside the applicability of the regulation on a voluntary basis.

On October 5, 2018, 49 U.S.C. § 44737 (2018) became public law, created by the FAA Reauthorization Act of 2018. This law lists the helicopter fuel system safety requirements for operation of a “covered” rotorcraft in the United States airspace. The law was limited in applicability to newly manufactured rotorcraft. The requirements are consistent with recommendations that the Aviation Rulemaking Advisory Committee (ARAC) Rotorcraft Occupant Protection Working Group (ROPWG) provided to the FAA on March 23, 2018 to improve rotorcraft fuel system crash resistance.

The FAA initially issued SAIB SW-17-31 on October 13, 2017 to provide owners and operators a list of helicopters equipped with a fully compliant CRFS. Two subsequent revisions to the SAIB added information about the helicopter fuel system safety requirements established by 49 U.S.C. § 44737 (2018) and added a second list of helicopters that met these requirements.

As noted, the applicability of 49 U.S.C. § 44737 (2018) was limited to newly manufactured rotorcraft. However, the ROPWG made other recommendations that applied to rotorcraft in the existing fleet that had not previously been equipped with CRFS designs. For these cases, the ROPWG recommended retrofit of simpler fuel system safety enhancements. These safety enhancements may be voluntarily incorporated to increase the post-crash fire protection.

The full report for the ROPWG is publicly available at:

[https://www.faa.gov/regulations\\_policies/rulemaking/committees/documents/index.cfm/search/searchResults](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/search/searchResults).

## 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 options below in order to minimize the potential for a post-crash fire and maximize the protection to you in a survivable accident.

The FAA introduced a new resource when we published SAIB AIR-21-17, the Rotorcraft Safety Promotion Concept (RSPC). This concept is intended to better inform and educate stakeholders about the continuum of voluntary design and equipment safety enhancement options. The initial SAIB introduced bird strike designs and mitigations to the RSPC, while the current SAIB introduces design features of CRFS to the RSPC. The RSPC document related to CRFS is available at [https://www.faa.gov/aircraft/air\\_cert/design\\_approvals/rotorcraft/media/rot\\_CRFS\\_RSPC.pdf](https://www.faa.gov/aircraft/air_cert/design_approvals/rotorcraft/media/rot_CRFS_RSPC.pdf). The different areas on the continuum each offer unique safety benefits in terms of post-crash fire protection. Stakeholders are encouraged to use this resource to determine the design and equipment features that best fit their operational needs, available resources, and personal risk tolerances.

For stakeholders interested in rotorcraft designs meeting CRFS standards, the FAA maintains a list at [https://www.faa.gov/aircraft/air\\_cert/design\\_approvals/rotorcraft/media/rot\\_CRFS\\_Compliant\\_List.pdf](https://www.faa.gov/aircraft/air_cert/design_approvals/rotorcraft/media/rot_CRFS_Compliant_List.pdf)

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 crash resistant fuel system capability of a specific rotorcraft.

- **For those considering owning or leasing a rotorcraft:**  
Refer to the RSPC document link above and ask the rotorcraft manufacturer about the fuel 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 post-crash fire prevention.
- **For current owners and operators:**  
Refer to the RSPC document link above and ask the rotorcraft manufacturer about available FAA-approved design modifications that will improve post-crash fire prevention.
- **For pilots and aircrew:**  
Refer to the RSPC document link above and ask your operator about the fuel system installed on their rotorcraft compared to the RSPC continuum.
- **For passengers:**  
Refer to the RSPC document link above and ask the operator about the fuel system installed on their rotorcraft compared to the RSPC continuum.
- **For rotorcraft manufacturers and modifiers:**  
Refer to the RSPC document link above and contact an FAA ACO if you want to pursue FAA approval of design modifications that will allow your product to meet a higher level of crash resistant fuel system post-crash fire prevention on the RSPC continuum.

**For Further Information on Crash Resistant Fuel Systems and this SAIB contact:**

Jorge Castillo, Manager, Strategic Policy Rotorcraft Section, Aircraft Certification Service Policy and Innovation Division, 10101 Hillwood Parkway, Fort Worth, Texas, 76177; phone: (817) 222-5110; fax: (817) 222-5961; email: [Jorge.R.Castillo@faa.gov](mailto:Jorge.R.Castillo@faa.gov).