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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 27

[Docket No. FAA-2025-5245; Notice No. 27-26-01-SC]

Special Conditions: Skyryse, Robinson Helicopter Company Model R66 Helicopter; Flight Control System Annunciation of Control

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions for the Robinson Helicopter Company (Robinson) Model R66 helicopter. This helicopter, as modified by Skyryse, will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for normal category helicopters. This design feature replaces the mechanical flight controls with a digital fly-by-wire (FBW) system. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: Send comments on or before [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by Docket No. FAA-2025-5245 using any of the following methods:

Federal eRegulations Portal: Go to www.regulations.gov and follow the online instructions for sending your comments electronically.

Mail: Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.

Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Fax: Fax comments to Docket Operations at 202-493-2251.

Docket: Background documents or comments received may be read at www.regulations.gov at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Johannes VanHoudt, Product Policy Management, AIR-62B, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, 901 Locust, Kansas City, MO 64106; telephone (816) 329-4144; email john.g.van.houdt@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the proposed special conditions, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments received by the closing date for comments, and will consider comments filed late if it is possible to do so without incurring delay. The FAA may change these special conditions based on the comments received.

Privacy

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in title 14, Code of Federal Regulations (14 CFR) 11.35, the FAA will post all comments received without change to www.regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about these special conditions.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to these special conditions contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to these special conditions, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and the indicated comments will not be placed in the public docket of these proposed special conditions. Send submissions containing CBI to the individual listed in the For Further Information Contact section above. Comments the FAA receives, which are not specifically designated as CBI, will be placed in the public docket for these proposed special conditions.

Background

On April 10, 2023, Skyryse applied for a supplemental type certificate (STC) for replacing the current mechanical primary flight controls with an FBW flight control system (FCS) in the Robinson Model R66 helicopter. The Robinson Model R66 helicopter, currently approved under Type Certificate No. R00015LA, is a single engine

normal category rotorcraft with a maximum takeoff weight of 2,700 pounds and a maximum seating capacity of five passengers. The Model R66 is a single pilot helicopter approved for day and night operations under visual flight rules (VFR) only.

Section 27.695 was issued in 1964 for rotorcraft with rudimentary mechanical systems. The state of technology at that time provided no basis for a digital replacement. Skyryse is proposing to replace the current mechanical primary flight controls on the Model R66 helicopter with a digital FBW FCS. Because of the loss of pilot awareness that would have been provided by mechanical system feedback to the cyclic, an annunciation requirement is necessary through these special conditions.

Type Certification Basis

Under the provisions of 14 CFR 21.101, Skyryse must show that the Robinson Model R66 helicopter, as changed, continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. R00015LA or the applicable regulations in effect on the date of application for the change.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 27) do not contain adequate or appropriate safety standards for the Robinson Model R66 helicopter because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for an STC to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Robinson Model R66 helicopter must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Feature

The Robinson Model R66 helicopter would incorporate the following novel or unusual design feature:

A primary FCS that replaces the mechanical cyclic and collective with a FBW FCS. Skyryse applied for a supplemental type certificate for a system with aircraft-agnostic flight automation technology, the SkyOS, in Robinson Model R66 rotorcraft. The flight control inputs from this FBW system will replace the tactical feedback from pushrods with a position calculated by a computer. The SkyOS does not modify the engine, main rotor, tail rotor, or physical travel limits of the flight control surfaces.

Discussion

The proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards. The proposed special conditions are required to address the gap in the regulation that was created by the replacement of mechanical primary flight control with digital controls. Section 27.695 is based on the ability of the pilot to manage control of the rotorcraft with tactile feedback, which does not exist in the proposed FBW design. As such, to provide the same level of safety, these proposed special conditions would require a display of the commanded positions of the primary flight controls and any information regarding the FBW system state of operation.

Applicability

As discussed above, these proposed special conditions are applicable to the model for which they are issued. Should the applicant apply for an STC to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would apply to the other model as well.

Conclusion

This action affects only a certain novel or unusual design feature on one helicopter model. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the helicopter.

List of Subjects in 14 CFR Part 27

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

Authority Citation

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 40113, 44701, 44702, and 44704.

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration proposes the following special conditions as part of the type certification basis for the Robinson Helicopter Company Model R66 helicopter, as modified by Skyryse.

Flight Control Systems

The flight control system functions, controls, indications, and alerts must be designed to minimize flightcrew errors and confusion concerning operation of the flight control system. This includes any degraded functions required for continued safe flight and landing. Means must be provided to indicate the current mode of operation to the pilot. The controls and indications must be grouped and presented to the pilot in a format that clearly defines the flight control system functions. The displayed information must be visible to the flightcrew under all expected lighting conditions.

Issued in Fort Worth, Texas on April 16, 2026.

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Policy and Standards Division,
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