DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 27

[Docket No. FAA-2025-2303; Special Conditions No. 27-059-SC]

Special Conditions: Skyryse, Robinson Helicopter Company Model R66 Helicopter; Static Longitudinal Stability

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued 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 rotorcraft. This design features a four-axis full authority digital fly-by-wire (FBW) flight control system (FCS), which provides aircraft control through pilot input or coupled autopilot modes. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These 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: Effective [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Mitch Soth, Product Policy Management, AIR-62B, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, FAA Southwest Regional Office, 10101 Hillwood Parkway, Fort Worth, TX 76177; telephone 817-222-5104; e-mail mitch.soth@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

On April 10, 2023, Skyryse applied for a supplemental type certificate (STC) for the installation of novel control inputs and an FBW system in the Model R66 helicopter. The Robinson Model R66 helicopter, currently approved under Type Certificate No. R00015LA, is a single-engine, five-passenger helicopter with a maximum takeoff weight of 2,700 pounds.

Title 14 CFR §§ 27.171, 27.173, and 27.175 establish the minimum requirements for static longitudinal stability for operation under visual flight rules, and appendix B of part 27, sections IV and VII, "Airworthiness Criteria for Helicopter Instrument Flight," provides the airworthiness criteria for helicopter instrument flight. However, these requirements are inadequate for the Robinson Model R-66 helicopter as modified by Skyryse because the longitudinal control laws may permit neutral or negative static stability rather than requiring positive static stability throughout the approved flight envelope.

Type Certification Basis

Under the provisions of § 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 with the regulations in effect on the date of the 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 Features

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

A four-axis full authority digital FBW FCS that provides aircraft control through pilot control inputs or coupled autopilot modes in addition to degraded modes.

Discussion

The Skyryse Robinson Model R66 helicopter is configured with an FBW FCS, which needs to be evaluated for acceptable static stability characteristics.

For conventional rotorcraft having mechanical linkages from the primary cockpit flight controls to the rotor, static longitudinal stability means that a pull displacement or force on the cyclic will result in a reduction of speed relative to the trim speed, and that a push displacement or force will result in a higher speed relative to the trim speed. Acceptable longitudinal stability is necessary for the following reasons:

- Airspeed change cues are provided to the pilot through increased and decreased forces on the controller.
- Short periods of unattended control of the rotorcraft do not result in significant changes in attitude, airspeed, or load factor.
- A predictable pitch response is provided to the pilot.

- An acceptable level of pilot workload, to attain and maintain trim speed and attitude, is provided to the pilot.
- Longitudinal stability provides gust stability.

The pitch control movement of the cyclic for the FBW FCS is an attitude command, which results in a rotor movement to attain the commanded pitch attitude. The flight path commanded by the initial cyclic input will remain stick-free until the pilot gives another command. This control function is applied during "normal" control laws within the approved flight envelope.

As detailed in § 27.173(b) and considered in Advisory Circular (AC) 27.173(A), "Static Longitudinal Stability," which is contained within AC 27-1B, "Certification of Normal Category Rotorcraft," and the positive control force stability requirements in appendix B to part 27, sections IV and VII, the slope of the control position (cyclic) versus the airspeed curve must be positive (i.e., provide positive static stability) throughout the full range of altitude for which certification is requested with the throttle and collective pitch held constant.

The design of the Skyryse FBW FCS is such that the static stability requirements identified under part 27 and appendix B, section IV, may not be met for all flight conditions.

The 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.

Discussion of Comments

The FAA issued notice of proposed special conditions No. FAA-2025-2303 for the Robinson Model R66 helicopter, which was published in the *Federal Register* on November 21, 2025 (90 FR 52569).

The FAA received a comment from the Citizens Rulemaking Alliance, which raised several issues.

The commenter stated the FAA improperly relied on "good cause" to bypass the notice and comment procedures and 30-day delayed effective date under the Administrative Procedure Act. The commenter requested that the FAA withdraw the immediate effectiveness of the special conditions and republish them as proposed special conditions with a reasonable comment period.

The FAA disagrees. As noted in 14 CFR 11.38, the Administrative Procedure Act does not require notice and comment for special conditions, which are rules of particular applicability. Nonetheless, the FAA did provide notice and comment on these special conditions. Citizens Rulemaking Alliance submitted this comment in response to a notice of proposed special condition for which the FAA provided a 45-day comment period. In addition, these final special conditions are effective 30 days after publication in the Federal Register. Therefore, no change is necessary.

The commenter stated that the FAA failed to provide the technical rationale for its deviation from part 27 requirements and requested that the FAA place in the docket a non-proprietary, substantive summary of the technical basis and safety case. The commenter requested that the FAA include a description of the modified flight control architecture and control laws, a comparative assessment of the applicable regulations, flight test plans and results, failure modes and effects analysis excerpts, and proposed rotorcraft flight manual changes.

The FAA disagrees. The preamble of the notice of proposed special conditions explains the novel and unusual design feature and how the current requirements in part 27 are not applicable to FBW rotorcraft with indirect flight controls that have extensively augmented stability. The preamble also explains the FAA's justification for the safety standards in the special conditions. The additional information requested by the

commenter is proprietary. The Freedom of Information Act (5 U.S.C. 552) and the Trade Secrets Act (18 U.S.C. 1905) prohibit the FAA from disclosing such data.

The commenter stated that the special conditions are a "novel policy" under Executive Order 12866 and requested that the FAA submit them to the Office of Information and Regulatory Affairs for a significance determination.

The FAA disagrees. Special conditions are not subject to review under Executive Order 12866, which only applies to rules of general applicability.

Lastly, the commenter stated that the FAA failed to comply with the Regulatory Flexibility Act (5 U.S.C. 601-612) and requested that the FAA include in the docket its assessment of the burden of the special conditions on small entities.

The FAA disagrees. Special conditions are not subject to the Regulatory Flexibility Act, which only applies to general notices of proposed rulemaking.

Applicability

As discussed above, these special conditions are applicable to the Robinson Model R66 helicopter. Should Skyryse apply at a later date for an STC to modify any other model included on Type Certificate No. R00015LA to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only a certain novel or unusual design feature on the Model R66 helicopter. 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 rotorcraft.

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), 106(g), 40113, 44701-44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Robinson Helicopter Company Model R66 helicopter, as modified by Skyryse.

In lieu of the requirements of §§ 27.173(b) and 27.175 for operation under visual flight rules and the airworthiness criteria for helicopter instrument flight in appendix B to part 27, sections IV and VII, the following special conditions apply:

The rotorcraft must be shown to have suitable longitudinal stability in any condition normally encountered in service, including the effects of atmospheric disturbance. The showing of suitable static longitudinal stability must be based primarily on a positive control movement (positive control sense of motion as referenced in AC 27.173A), in addition to rotorcraft handling qualities by assessing pilot workload, cues, and pilot compensation for specific test procedures during the flight test evaluation.

Issued in Fort Worth, Texas, on April 29, 2026.

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Aircraft Certification Service.

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