

List of Subjects in 14 CFR Part 29

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 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 Bell Helicopter Textron, Inc., Model 525 helicopters:

Flight Envelope Protection

The Flight Envelope Protection (FEP) features of the flight control system (FCS) must meet the following requirements:

a. Onset characteristics of each envelope protection feature must be smooth, appropriate to the phase of flight and type of maneuver, and not in conflict with the ability of the pilot to satisfactorily change rotorcraft flight path, speed, or attitude within the approved flight envelope.

b. Limit values of protected flight parameters (and if applicable, associated warning thresholds) must be compatible with:

1. Rotorcraft structural limits;
2. Safe and controllable maneuvering of the rotorcraft;
3. Margins to critical conditions.

Dynamic maneuvering, airframe and system tolerances (both manufacturing and in-service), and non-steady atmospheric conditions—in any appropriate combination and phase of flight—must not result in a limited flight parameter beyond the nominal design limit value that would cause unsafe flight characteristics;

4. Rotor rotational speed limits;
5. Blade stall limits; and
6. Engine and transmission torque limits.

c. The aircraft must be responsive to pilot-commanded dynamic maneuvering within a suitable range of the parameter limits that define the approved flight envelope.

d. The FEP system must not create unusual or adverse flight characteristics when atmospheric conditions or unintentional pilot action causes the approved flight envelope to be exceeded.

e. When simultaneous envelope limiting is active, adverse coupling or adverse priority must not result.

f. Following a single FEP failure shown to not be extremely improbable, the rotorcraft must:

1. Be capable of continued safe flight and landing;

2. Be capable of initial counteraction of malfunctions without requiring exceptional pilot skill or strength;

3. Be controllable and maneuverable when operated with a degraded FCS, within a practical flight envelope identified in the Rotorcraft Flight Manual;

4. Be capable of prolonged instrument flight without requiring exceptional pilot skill;

5. Meet the controllability and maneuverability requirements of 14 CFR part 29 Subpart B throughout a practical flight envelope; and

6. Be safely controllable following any additional failure or malfunction shown to not be extremely improbable occurring within the approved flight envelope.

Issued in Fort Worth, Texas, on October 3, 2018.

Jorge Castillo,

Acting Manager, Rotorcraft Standards Branch, Policy and Innovation Division, Aircraft Certification Services.

[FR Doc. 2018–22267 Filed 10–11–18; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 29**

[Docket No. FAA–2017–1128; Notice No. 29–045–SC]

Special Conditions: Bell Helicopter Textron, Inc. (BHTI), Model 525 Helicopters; Control Margin Awareness

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the BHTI Model 525 helicopter. This helicopter will have a novel or unusual design feature associated with the fly-by-wire flight control system (FBW FCS) in the area of pilot awareness of the control margins remaining while maneuvering the helicopter. 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: These special conditions are effective November 13, 2018.

FOR FURTHER INFORMATION CONTACT: George Harrum, Aerospace Engineer,

FAA, Rotorcraft Standards Branch, Policy and Innovation Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222–4087; email George.Harrum@faa.gov.

SUPPLEMENTARY INFORMATION:**Background**

On December 15, 2011, BHTI applied for a type certificate for a new transport category helicopter designated as the Model 525. The Model 525 is a medium twin-engine rotorcraft. The design maximum takeoff weight is 20,500 pounds, with a maximum capacity of 19 passengers and a crew of 2.

The BHTI Model 525 helicopter will be equipped with a four-axis full authority digital FBW FCS that provides for aircraft control through pilot input and coupled flight director modes. The current 14 CFR part 29 regulations do not contain adequate standards for FBW FCS with respect to control margin awareness. The airworthiness standards for controllability and maneuverability of the rotorcraft are contained in § 29.143. These controllability requirements are compatible with most FBW systems, while most of the maneuverability requirements are not affected by FBW systems, except for the control margins. One of the purposes of the rule is to ensure that control margins (at the rotor and the anti-torque system level) are sufficient in the defined flight envelope to avoid loss of control (that is, the rotorcraft has adequate control power for the pilot to exit potentially hazardous flight conditions). Implicit in this purpose is that the pilot is provided with sufficient awareness of proximity to control limits. Because § 29.143 was written to address hydro-mechanical flight control systems, through which pilot awareness of control margins is provided by cyclic and pedal position relative to cockpit control stops, the rule is inadequate for certification of a FBW FCS, where there is no mechanical link between the inceptor and the receptor. Without a constant correlation between cockpit control and main or tail rotor actuator positions, the FCS may not provide tactile control margin feedback to the pilot through cockpit control position relative to the control position physical stop or limit, for all flight conditions. The special conditions will require the minimum safety standard to ensure awareness of proximity to control limits at the main rotor and tail rotor is provided to pilots of the Bell Model 525 helicopter.

Type Certification Basis

Under the provisions of 14 CFR 21.17, BHTI must show that the Model 525 helicopter meets the applicable

provisions of part 29, as amended by Amendment 29–1 through 29–55 thereto. The BHTI Model 525 certification basis date is December 31, 2013, the effective date of application to the FAA.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 29) do not contain adequate or appropriate safety standards for the BHTI Model 525 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 type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the BHTI Model 525 helicopter must comply with the noise certification requirements of 14 CFR part 36, and the FAA must issue a finding of regulatory adequacy under section 611 of Public Law 92–574, the “Noise Control Act of 1972.”

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 § 21.17(a)(2).

Novel or Unusual Design Features

The BHTI Model 525 helicopter incorporates the following novel or unusual design features: A four-axis full authority digital FBW FCS. Pilot control inputs, through the mechanically linked cockpit controls (cyclic, collective, directional pedals), are transmitted electrically to each of the three Flight Control Computers (FCCs). The pilot control input signals are then processed and transmitted to the hydraulic flight control actuators which affect control of the main and tail rotors.

Discussion

These special conditions require the minimum safety standard to ensure awareness of proximity to control limits at the main rotor and tail rotor is provided to pilots of the Bell Model 525 helicopter. The system design must provide the pilot with sufficient awareness of proximity to control limits, traditionally achieved through conventional flight controls by the pilot’s inherent awareness of cyclic stick and pedal position relative to control stops.

Discussion of Comments

Notice of proposed special conditions No. 29–045–SC for the BHTI Model 525 helicopter was published in the **Federal Register** on June 6, 2018 (83 FR 26225). No comments were received, and the special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions are applicable to the BHTI Model 525 helicopter. Should BHTI apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on one model of rotorcraft. It is not a rule of general applicability.

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Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 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 Bell Helicopter Textron, Inc., Model 525 helicopters:

Control Margin Awareness

In addition to the existing § 29.143 requirements, the following special condition applies: The system design must ensure that the flight crew is made suitably aware whenever the means of primary flight control approaches the limits of control authority. For the context of this special condition, the term “suitable” indicates an appropriate balance between nuisance and necessary operation.

Issued in Ft Worth, Texas, on October 3, 2018.

Jorge Castillo,

Acting Manager, Rotorcraft Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

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DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 100

[Docket Number USCG–2018–0577]

RIN 1625–AA08

Special Local Regulation; Choptank River, Talbot and Dorchester Counties, MD

AGENCY: Coast Guard, DHS.

ACTION: Temporary final rule.

SUMMARY: The Coast Guard is establishing temporary special local regulations for certain navigable waters of the Choptank River. This action is necessary to provide for the safety of life on these waters near Oxford, MD, from October 7, 2018, through October 15, 2018, during a sailboat regatta. This regulation prohibits persons and vessels from being in the regulated area unless authorized by the Captain of the Port Maryland-National Capital Region or a designated representative.

DATES: This rule is effective without actual notice from October 12, 2018 through 5:30 p.m. on October 15, 2018. For the purposes of enforcement, actual notice will be used from 11:30 a.m. on October 7, 2018 until October 12, 2018.

ADDRESSES: To view documents mentioned in this preamble as being available in the docket, go to <http://www.regulations.gov>, type USCG–2018–0577 in the “SEARCH” box and click “SEARCH.” Click on Open Docket Folder on the line associated with this rule.

FOR FURTHER INFORMATION CONTACT: If you have questions on this rule, call or email Mr. Ronald Houck, U.S. Coast Guard Sector Maryland-National Capital Region; telephone 410–576–2674, email Ronald.L.Houck@uscg.mil.

SUPPLEMENTARY INFORMATION:

I. Table of Abbreviations

CFR Code of Federal Regulations
COTP Captain of the Port
DHS Department of Homeland Security
FR Federal Register
NPRM Notice of proposed rulemaking
§ Section
U.S.C. United States Code

II. Background Information and Regulatory History

On February 13, 2018, the Tred Avon Yacht Club of Oxford, MD, notified the Coast Guard through submission of a marine event application that from October 5, 2018, through October 15, 2018, it will be conducting a sailboat