[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 29

[Docket No. FAA-2014-1090; Special Conditions No. 29-037-SC]

Special Conditions: Airbus Helicopters Deutschland GmbH Model MBB-BK117D-2 Helicopters; Use of 30-Minute Power Rating

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Airbus Helicopters Deutschland GmbH Model MBB-BK117 D-2 helicopter. This model helicopter will have the novel or unusual design feature of a 30-minute power rating, generally intended to be used for hovering at increased power for search and rescue missions. 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: This action is effective on Airbus Helicopters Deutschland GmbH Model MBB-BK117D-2 Helicopters on December 19, 2014.

We must receive your comments by **[insert date 60 days after date of publication]**.

ADDRESSES: Send comments identified by docket number FAA-2014-1090 using any of the following methods:

- Federal eRegulations Portal: Go to http://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, D.C., 20590-0001.
- Hand Delivery of Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, S.E., Washington, D.C., between 8 a.m., and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to http://regulations.gov, including any personal information the commenter provides. Using the search function of the docket web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at http://DocketsInfo.dot.gov.

Docket: You can read the background documents or comments received at http://www.regulations.gov. Follow the online instructions for accessing the docket or go to the Docket Operations in Room @12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, D.C., between 9 a.m., and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Rao Edupuganti, Rotorcraft Standards Staff, ASW-111, Rotorcraft Directorate, Aircraft Certification Service, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-4389; e-mail rao.edupaganti@faa.gov.

SUPPLEMENTARY INFORMATION:

Reason for No Prior Notice and Comment Before Adoption

The FAA has determined that notice and opportunity for public comment are impractical and contrary to the public interest because the issuance of a design approval would significantly delay delivery of the affected aircraft. Therefore, we find that good cause exists for making these special conditions effective upon issuance.

Comments Invited

While we did not precede this with a notice of proposed special conditions, we invite 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 special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

Background and Discussion

On December 21, 2009, Airbus Helicopters Deutschland GmbH applied to amend Type Certificate No. H13EU to include the new Model MBB-BK117 D-2. The MBB-BK117 D-2, which is a derivative of the MBB-BK117 C-2 currently approved under Type Certificate No. H13EU, is a Transport Category, 14 CFR Part 29, twin engine conventional helicopter designed for civil operations. It is certificated with Category A performance and for day and night operation under visual and instrument flight rules. It is powered by two Turbomeca Arriel 2E engines with dual channel Full Authority Digital Engine Control systems and has four main rotor blades and a maximum gross weight of 8,046 pounds. It has an integrated modular avionics suite

with three 6x8 inch multi-function displays termed the Common Integrated Global Avionics for Light Helicopters.

Airbus Helicopters Deutschland GmbH proposes that the model MBB-BK117 D-2 use a novel and unusual design feature, which is a 30-minute power rating, identified in the Turbomeca Arriel 2E Engine Special Conditions No. 33-009-SC. 14 CFR 1.1 defines "rated takeoff power" as limited in use to no more than 5 minutes for takeoff operation. Thus, the use of takeoff power for 30 minutes will require special airworthiness standards, known as special conditions, to address the use of this 30-minute power rating and its effects on the rotorcraft. These special conditions will add requirements to the existing airworthiness standards in 14 CFR 29.1049 (Hover cooling test procedures), § 29.1305 (Powerplant instruments), and § 29.1521 (Powerplant limitations).

The following is a summary of the final special conditions:

In addition to the requirements of § 29.1049 (Hover cooling test procedures), the aircraft cooling effects due to use of the 30-minute power rating versus the Takeoff (5-minute) rating must be accounted for in the testing.

In addition to the requirements of § 29.1305, Powerplant Instruments, since this new 30-minute power rating has a 30-minute time limit associated with its use, the pilot must have the means to identify:

- When the rated engine power level is achieved,
- When the event begins, and
- When the time interval expires.

In addition to the requirements of § 29.1521, Powerplant Limitations, a new 30-minute rating must be limited to no more than 30 minutes per use. This new rating will allow use of power above maximum continuous power (MCP) for 30 minutes.

Furthermore, the Model MBB-BK117 D-2 rotorcraft flight manual must include limitations on use of the 30-minute power rating to state that continuous use above MCP up to takeoff power is limited to 30 minutes.

Type Certification Basis

Under 14 CFR 21.101, Airbus Helicopters Deutschland GmbH must show that the MBB-BK117 D-2 model helicopter meets the applicable provisions of the regulations incorporated by reference in Type Certificate No. H13EU or the applicable regulations in effect on the date of application for the change to the type certificate. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis." The regulations incorporated by reference in Type Certificate No. H13EU are as follows:

1. 14 CFR 21.29 and 14 CFR 29 effective February 1, 1965 plus Amendments 29-1 through 29-40 for the new or changed parts with respect to the MBB-BK117 C-2 identified in the document ETYC 1183/09-MHa, supplemented with requirements from other amendments listed below.

2. 14 CFR 29 requirements with amendment through 29-51 for:
   29.25, 29.59, 29.62, 29.67, 29.77, 29.81, 29.85, 29.143, 29.173, 29.175, 29.177, 29.351, 29.397, 29.562, 29.602, 29.865, 29.923, 29.1317, 29.1323, 29.1329, 29.1351, 29.1359, 29.1457, 29.1459, 29.1521, 29.1587, B29.5, B29.7

3. Equivalent Level Of Safety:
   a) 14 CFR 29.807 (a)(4) Emergency exits
   b) 14CFR 29.1305, 29.1351(b)(6) , 29.1435(a)(3) Part Time Display of Vehicle Parameters
   c) 14 CFR 29.1545(b)(4), 29.1549(b) Airspeed & Powerplant indication green marking

4. Environmental Standards:
   a) 14 CFR 36 Appendix H at amendment 36-25

5. The main differences between the MBB-BK117 C-2 and the MBB-BK117 D-2 are as follows:
    a) Installation of Turbomeca Arriel 2E engines with FADEC control
    b) New tail section including composite structure and fanned tail rotor (FENESTRON) with composite blades
    c) New cockpit indication system using integrated modular avionics.
    d) Auto Flight System as a standard configuration of the MBB-BK117 D-2
    e) Main gearbox modifications to support 30 minute run-dry capability
    f) Maximum take-off weight increased to 3650 kg

In addition, if the regulations incorporated by reference do not provide adequate standards regarding the change, the applicant must comply with certain regulations in effect on the date of application for the change. The FAA has determined that the Model MBB-BK117 D-2 must also comply with the noise certification requirements of 14 CFR part 36; and the FAA must issue a finding of regulatory adequacy under § 611 of Public Law 92-574, the "Noise Control Act of 1972."

Regulatory Basis for Special Conditions

The Administrator has determined that the applicable airworthiness regulations (that is, 14 CFR part 29) do not contain adequate or appropriate safety standards for the MBB-BK117 D22 model helicopter because of a novel or unusual design feature. Therefore, special conditions are prescribed under the provisions of 14 CFR 21.16.

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

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 novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, the special conditions would also apply to the other model.

Novel or Unusual Design Features

The MBB-BK117 D-2 model helicopter will incorporate the following novel or unusual design feature:

- A 30-minute power rating.

Applicability

These special conditions are applicable to the Airbus Helicopters Deutschland GmbH Model MBB-BK117 D2 helicopter. Should Airbus Helicopters Deutschland GmbH apply at a later date for an amendment 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 the Airbus Helicopters Deutschland GmbH Model MBB-BK117 D-2 helicopter. It is not a rule of general applicability.

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 Airbus Helicopters Deutschland GmbH Model MBB-BK117 D-2 helicopters. Unless stated otherwise, all requirements in §§ 29.1049, 29.1305 and 29.1521 remain unchanged.

Section 29.1049 Hover cooling test procedures. In addition to the requirements of this section, for rotorcraft with a 30-minute power rating, the hovering cooling provisions at the 30-minute power rating must be shown--

(a) At maximum weight or at the greatest weight at which the rotorcraft can hover (if less), at sea level, with the power required to hover but not more than the 30-minute power, in the ground effect in still air, until at least 5 minutes after the occurrence of the highest temperature recorded, or until the continuous time limit of the 30-minute power rating if the highest temperature recorded is not stabilized before.

(b) At maximum weight and at the altitude resulting in zero rate of climb for this configuration, until at least 5 minutes after the occurrence of the highest temperature recorded, or until the continuous time limit of the 30-minute power rating if the highest temperature recorded is not stabilized before.

Section 29.1305 Powerplant instruments, at Amendment 29-40. In addition to the requirements of this section, a means must be provided to indicate to the pilot when the engine is at the 30-minute power level, when the event begins, and when the time interval expires.

Section 29.1521 Powerplant limitations, at Amendment 29-41. In addition to the requirements of this section, use of the 30-minute power must be limited to no more than 30 minutes per use. The use of the 30-minute power must also be limited by:

(1) The maximum rotational speed, which may not be greater than--

(i) The maximum value determined by the rotor design; or

(ii) The maximum value demonstrated during the type tests;

(2) The maximum allowable turbine inlet or turbine outlet gas temperature (for turbine engines);

(3) The maximum allowable power or torque for each engine, considering the power input limitations of the transmission with all engines operating;

(4) The maximum allowable power or torque for each engine considering the power input limitations of the transmission with one engine inoperative;

(5) The time limit for the use of the power corresponding to the limitations established in paragraphs (1) through (4) above; and

(6) The maximum allowable engine and transmission oil temperatures, if the time limit established in paragraph (5) above exceeds 2 minutes.

Issued in Fort Worth, Texas on December 19, 2014.

Lance T. Gant

Acting Directorate Manager, Rotorcraft Directorate,

Aircraft Certification Service.

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