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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 33

[Docket No. NE132; Special Conditions No. 33–009–SC]

Special Conditions: Turbomeca Arriel 2D Turboshaft Engine

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Turbomeca SA model Arriel 2D engines. The engine model will have a novel or unusual design feature which is a 30-minute power rating. This rating is 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 added safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: The effective date of these special conditions is June 27, 2011.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this rule contact Marc Bouthillier, ANE–111, Engine and Propeller Directorate, Aircraft Certification Service, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (781) 238–7120; facsimile (781) 238–7199; e-mail *marc.bouthillier@faa.gov.* For legal questions concerning this rule contact Vincent Bennett, ANE–7 Engine and Propeller Directorate, Aircraft Certification Service, 12 New England Executive Park, Burlington, Massachusetts 01803–5299; telephone (781) 238–7044; facsimile (781) 238–7055; e-mail *vincent.bennett@faa.gov.*

SUPPLEMENTARY INFORMATION:

Background

On August 26, 2010, Turbomeca applied for type certification for a new model Arriel 2D turboshaft engine. This engine consists of an axial air intake, an axial compressor and a centrifugal compressor driven by a single-stage turbine, a direct-flow annular combustion chamber, and a single-stage free turbine which drives a reduction gear assembly located at the rear end. The accessory gearbox, located at the front end, is driven by the gas generator turbine.

The engine will incorporate a novel or unusual design feature, which is a 30-minute power rating. This rating was requested by the applicant to support rotorcraft search and rescue missions that require extensive operations at high power. This type of rating is generally associated with multi-engine applications and has usually been named an all-engine-operating (AEO) rating. However, this model will be installed on a single engine rotorcraft, and the rating name for the purpose of this special condition is now 30-minute power rating. The number of times this new rating can be used during a flight is not intended to be limited.

The applicable airworthiness standards do not contain adequate or appropriate airworthiness standards to address this design feature. Therefore, a special condition is necessary to apply additional requirements for rating definition, instructions for continued airworthiness (ICA), and endurance testing. The 30 minute time limit applies to each instance the rating is used; however there is no limit to the number of times the rating can be used during any one flight, and there is no cumulative time limitation. The ICA requirement is intended to address the unknown nature of actual rating usage and associated engine deterioration. The applicant is expected to make an assessment of the expected usage and publish ICAs and ALS limits in accordance with those assumptions, such that engine deterioration is not excessive. The endurance test requirement of 25 hours operation at 30 minute rating is similar to several special conditions issued over the past 20 years addressing the same subject. It must be noted that test time required for the takeoff rating may not be counted toward the 25 hours of operation required for the 30-minute rating.

These special conditions contain the additional airworthiness standards necessary to establish a level of safety equivalent to the level that would result from compliance with the applicable standards of airworthiness in effect on the date of application.

Type Certification Basis

Under the provisions of 14 CFR 21.17(a) and 21.101(a), Turbomeca must show that the model Arriel 2D turboshaft engine meets the provisions of the applicable regulations in effect on the date of application, unless otherwise specified by the FAA. The current certification basis for engines in this model series varies, being either 14 CFR part 33, Amendment 14 or Amendment 15. Turbomeca proposes a certification basis of part 33, Amendment 15. In accordance with § 21.101(b), the FAA concurs with the Turbomeca proposal. Therefore, the certification basis for the Turbomeca Arriel 2D will be part 33, effective February 1, 1965, as amended by Amendments 33–1 through 33–15 inclusive. The FAA has determined that the applicable airworthiness regulations (part 33, Amendments 1–15 inclusive) do not contain adequate or appropriate safety standards for the model Arriel 2D turboshaft engine, because of a novel or unusual rating. Therefore, special conditions are prescribed under the provisions of 14 CFR 11.19 and 14 CFR 21.16.

The FAA issues special conditions, as defined by 14 CFR 11.19, in accordance with 14 CFR 11.38, which become part of the type certification basis in accordance with § 21.17(a)(2) and (b).

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

Novel or Unusual Design Features

The Turbomeca (TM) model Arriel 2D turboshaft engine will incorporate a novel or unusual design feature which is a 30-minute power rating, for use up to 30 minutes at any time between the take-off and landing phases of a flight.

This design feature is considered to be novel and unusual relative to the part 33 airworthiness standards.

Discussion of Comments

Notice of proposed special conditions, Notice No. 33–11–01–SC for the Arriel 2D engine model was published on April 1, 2011 (76 FR 18130). One comment letter was received.

The commenter agreed with the special conditions for the Arriel 2D model only; and only as driven by program needs and because the engine is already compliant via similar requirements applied during EASA type certification. The commenter expressed several technical and regulatory disagreements with the special conditions, which are discussed below.

The commenter stated disagreement with the special condition requirement of incorporating 25 hours of operation at the 30 minute rating into the § 33.87 test profile. The commenter proposed to take credit for the 30 minute periods run at takeoff rating that is part of the normal test profile required by § 33.87(b), thereby reducing the amount of test time at the new 30 minute rating. The FAA does not agree. The takeoff rating and other normal ratings are defined within 14 CFR part 1, and the associated requirements can be found in part 33. Takeoff rating is limited in use to a continuous period of not more then 5 minutes during takeoff operations. The existing § 33.87 requirements are designed to demonstrate engine durability for the takeoff rating which is considered a normal every flight operation, and is independent of any other ratings. The proposed 30 minute rating is not defined within part 33, but has been specifically requested by TM. This new rating can be used for periods of up to 30 minutes at any time during a flight for a variety of normal mission purposes. Also, the number of usages during a single flight is not limited; and its use does not require special maintenance actions.

The new 30 minute rating is intended for normal mission use, similar to takeoff and other normal use ratings, but is different then limited turboshaft one-engine-inoperative (OEI) ratings. The OEI ratings for turboshafts, with the exception of continuous OEI, are for limited use during a flight, and in some cases limited cumulative use. We understand the Arriel 2D model is intended for a single engine application, and therefore has no OEI ratings; however, the FAA finds that the test time associated with the continuous OEI rating is an appropriate baseline to define additional requirements for a normal use 30 minute rating. Therefore, engine durability using this rating must be demonstrated over and above the takeoff rating and other normal use ratings included in the rating structure. Therefore, no changes to the special conditions have been made in this regard.

The commenter also states that the 25 hour requirement is inconsistent with § 33.87 philosophies, stating that time at any rating validates any lower rating. The FAA does not agree. The § 33.87 test requirements are established to demonstrate engine durability at all normal and emergency ratings, and associated limits. The various test profiles incorporate specific elements to this end. The normal ratings all have individual elements that must be performed. The 30 minute rating is also a normal use rating and must also have a specific and independent element as part of the overall test. Any emergency ratings (for example, OEI) must also be demonstrated, however due to their limited use, these elements of the test may overlap certain normal rating elements found in the various test profiles. Therefore, no changes to the special conditions have been made in this regard.

The commenter also states that the basis for 25 hours of required run time was not described in the special condition. The 25 hours was selected to be between the baseline § 33.87 cumulative run time for takeoff rating (18.75 hours) and maximum continuous rating (45 hours). This requirement is weighted more heavily toward the takeoff time due to the definition of the rating and intended operation. Therefore, no changes to the special conditions have been made in this regard.

Applicability

These special conditions are applicable to the Turbomeca model Arriel 2D turboshaft engine. If Turbomeca applies later for a change to the type certificate to include another closely related model incorporating the same novel or unusual design feature, these special conditions may also apply to that model as well, and would be made part of the certification basis for that model.

Conclusion

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

List of Subjects in 14 CFR Part 33

Air transportation, Aircraft, Aviation safety, Safety.

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, the Federal Aviation Administration (FAA) issues the following special conditions as part of the type certification basis for the Turbomeca model Arriel 2D turbo shaft engine.

1. PART 1 DEFINITION. Unless otherwise approved by the Administrator and documented in the appropriate manuals and certification documents, the following definition applies to this special condition: ''Rated 30 Minute Power'', means the approved shaft horsepower developed under static conditions at the specified altitude and temperature, and within the operating limitations established under part 33, and limited in use to periods not exceeding 30 minutes each.

2. PART 33 REQUIREMENTS.

(a) Sections 33.1 Applicability and 33.3 General: As applicable, all documentation, testing and analysis required to comply with the part 33 certification basis, must account for the 30 minute rating, limits and usage.

(b) Section 33.4, instructions for continued airworthiness (ICA). In addition to the requirements of § 33.4, the ICA must:

(1) Include instructions to ensure that in-service engine deterioration due to rated 30 minute power usage will not be excessive, meaning that all other approved ratings are available within associated limits and assumed usage, for successive flights; and that deterioration will not exceed that assumed for declaring a time between overhaul (TBO) period.

(i) The applicant must validate the adequacy of the maintenance actions required under paragraph (b)(1) above.

(2) Include in the airworthiness limitations section (ALS), any mandatory inspections and serviceability limits related to the use of the 30-minute rating.

(c) Section 33.87, Endurance Test. In addition to the requirements of §§ 33.87(a) and 33.87(b), the overall test run must include a minimum of 25 hours of operation at 30 minute power and limits, divided into periods of 30 minutes power with alternate periods at maximum continuous power or less.

(1) Modification of the § 33.87 test requirements to include the 25 hours of operation at 30-minute power rating,

must be proposed by the Applicant and accepted by the FAA. Note that the test time required for the takeoff rating may not be counted toward the 25 hours of operation required for the 30-minute rating.

Issued in Burlington, Massachusetts, on May 19, 2011.

Colleen M. D'Alessandro,

Acting Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 2011–13008 Filed 5–26–11; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2011–0123; Airspace Docket No. 11–AGL–2]

Amendment of Class E Airspace; Duluth, MN

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action amends Class E airspace for Duluth, MN, to accommodate new Area Navigation (RNAV) Standard Instrument Approach Procedures at Duluth International Airport. The FAA is taking this action to enhance the safety and management of Instrument Flight Rule (IFR) operations at the airport.

DATES: *Effective date:* 0901 UTC, August 25, 2011. The Director of the Federal Register approves this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA Order 7400.9 and publication of conforming amendments.

FOR FURTHER INFORMATION CONTACT: Scott Enander, Central Service Center, Operations Support Group, Federal Aviation Administration, Southwest Region, 2601 Meacham Blvd., Fort Worth, TX 76137; telephone (817) 321–7716.

SUPPLEMENTARY INFORMATION:

History

On March 23, 2011, the FAA published in the **Federal Register** a notice of proposed rulemaking to amend Class E airspace for Duluth, MN, creating additional controlled airspace at Duluth International Airport (76 FR 16348) Docket No. FAA–2011–0123. Interested parties were invited to participate in this rulemaking effort by submitting written comments on the proposal to the FAA. No comments were received. Class E airspace designations are published in paragraph 6005 of FAA Order 7400.9U dated August 18, 2010, and effective September 15, 2010, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document will be published subsequently in the Order.

The Rule

This action amends Title 14 Code of Federal Regulations (14 CFR) Part 71 by amending Class E airspace, as an extension to a Class D or Class E surface area; and Class E airspace extending upward from 700 feet above the surface, for new standard instrument approach procedures at Duluth International Airport, Duluth, MN. This action is necessary for the safety and management of IFR operations at the airport. Geographic coordinates will also be updated to coincide with the FAA's aeronautical database.

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. Therefore, this regulation: (1) Is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the U.S. Code. Subtitle 1, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is promulgated under the authority described in subtitle VII, part A, subpart I, section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it amends controlled airspace for Duluth International Airport, Duluth, MN.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for 14 CFR Part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E. O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of the Federal Aviation Administration Order 7400.9U, Airspace Designations and Reporting Points, dated August 18, 2010, and effective September 15, 2010, is amended as follows:

Paragraph 6004 Class E airspace areas designated as an extension to a Class D or Class E surface area.

* * * * *

AGL MN E4 Duluth, MN [Amended]

Duluth International Airport, MN
(Lat. 46°50′32″ N., long. 92°11′37″ W.)
Duluth VORTAC
(Lat. 46°48′08″ N., long. 92°12′10″ W.)

That airspace extending upward from the surface within 3.4 miles each side of the Duluth VORTAC 193° radial extending from the 4.9-mile radius of Duluth International Airport to 14.2 miles south of the VORTAC, and within 3.6 miles each side of the 267° bearing from Duluth International Airport extending from the 4.9-mile radius of the airport to 9.7 miles west of the airport.

Paragraph 6005 Class E Airspace areas extending upward from 700 feet or more above the surface of the earth.

* * * * *

AGL MN E5 Duluth, MN [Amended]

Duluth International Airport, MN
(Lat. 46°50′32″ N., long. 92°11′37″ W.)

That airspace extending upward from the 700 feet above the surface within a 7.1-mile radius of Duluth International Airport, and within 4.4 miles each side of the 267° bearing from the airport extending from the 7.1-mile radius to 7.7 miles west of the airport.

Issued in Fort Worth, Texas, on May 17, 2011.

Walter L. Tweedy,

Acting Manager, Operations Support Group, ATO Central Service Center.

[FR Doc. 2011–13109 Filed 5–26–11; 8:45 am]

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