

Done in Washington, DC, this 14th day of November 2006.

**Kevin Shea,**

*Acting Administrator, Animal and Plant Health Inspection Service.*

[FR Doc. E6-19452 Filed 11-16-06; 8:45 am]

BILLING CODE 3410-34-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 33

[Docket No. NE127; Notice No. 33-06-01-SC]

#### Special Conditions: General Electric Company GEnx Model Turbofan Engines

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed special conditions.

**SUMMARY:** This action proposes special conditions for General Electric Company (GE) GEnx turbofan engine models. These engines will have a novel or unusual design feature associated with the fan blades. The Administrator has determined that the applicable part 33 airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the added safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the airworthiness regulations.

**EFFECTIVE DATES:** We must receive your comments by December 18, 2006.

**ADDRESSES:** You may mail two copies of your comments to: Federal Aviation Administration, Engine and Propeller Directorate, Attn: Robert McCabe, Rules Docket (ANE-111), Docket No. NE127, 12 New England Executive Park, Burlington, Massachusetts 01803-5299. You may deliver two copies to the Engine and Propeller Directorate at the above address. You must mark your comments: Docket No. NE127. You may send comments via email to [robert.mccabe@faa.gov](mailto:robert.mccabe@faa.gov). You must use the subject "Docket No. NE127". You can inspect comments in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

**FOR FURTHER INFORMATION CONTACT:** Robert McCabe, ANE-111, Rulemaking and Policy Branch, Engine and Propeller Directorate, Aircraft Certification Service, 12 New England Executive Park, Burlington, Massachusetts 01803-5299; telephone (781) 237-7138;

facsimile (781) 238-7199; email [robert.mccabe@faa.gov](mailto:robert.mccabe@faa.gov).

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

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 ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel about these special conditions. You can inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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.

If you want us to let you know we received your comments on this proposal, send us a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

##### Background

On December 13, 2004, the General Electric Company (GE) applied to the FAA for a new type certificate for the GEnx series engine models. On May 24, 2005, GE submitted a revised application for a type certificate that added models and changed the model designation nomenclature. The turbofan engine models to be certified are GEnx-1B54, GEnx-1B58, GEnx-1B64, GEnx-1B67, GEnx-1B70, GEnx-1B70/72, GEnx-1B70/75, GEnx-1B72, and GEnx-1B75. For these GEnx engine models, GE plans to use carbon graphite composite fan blades incorporating metal leading and trailing edges that use geometry, composite structural materials, and manufacturing methods very similar to those used for the previously certified GE90-series engine fan blades designs.

In lieu of direct compliance to § 33.94(a)(1) for the GEnx fan blades, the FAA has proposed that GE comply with new special conditions that retain the requirements of the original SC-33-ANE-08 created for the GE90-76B,

-77B, -85B, -90B, -94B model certification program, and then successfully applied to the GE90-110B1, -113B, and -115B model certification program.

These GE90 series engine model fan blades are manufactured using carbon graphite composite material that also incorporates metal leading and trailing edges. These unusual and novel design features result in the fan blades having significant differences in material property characteristics when compared to conventionally designed fan blades using non-composite metallic materials. GE submitted data and analysis during the GE90-76B, -77B, -85B, -90B, -94B model certification program showing the likelihood that a composite fan blade with fail below the inner annulus flow path line is highly improbable. GE, therefore, questioned the appropriateness of the requirement contained in § 33.94(a)(1) to show blade containment after a failure of the blade at the outermost retention feature.

The FAA determined that the requirements of § 33.94(a)(1) are based on metallic blade characteristics and service history, and were not appropriate for the unusual design features of the composite fan blade design planned for the GE90-76B, -77B, -85B, -90B, -94B model turbofan engines. The FAA determined that a more realistic blade retention test would be achieved with a fan blade failure at the inner annulus flow path line (the complete airfoil only) instead of the outermost blade retention feature as currently required by § 33.94(a)(1).

The FAA, therefore, issued special conditions SC-33-ANE-88 on February 1, 1995 for the GE90-76B, -77B, -85B, -90B, -94B engine models. These special conditions defined additional safety standards for the carbon graphite composite fan blades that were appropriate for the unusual design features of those fan blades and that were determined to be necessary to establish a level of safety equivalent to that established by the airworthiness standards of § 33.94(a)(1). The FAA later determined that these special conditions continued to be appropriate for the amended type certificate applied to the GE90-110B1, -113B, and -115B engine models.

The FAA also determined that the composite fan blade design and construction presents factors other than the expected location of a blade failure that must be considered. Tests and analyses must account for the effects of in-service deterioration of, manufacturing and materials variations in, and environmental effects on, the composite material. Tests and analyses

must also show that a lightning strike on a composite fan blade will not result in a hazardous condition to the aircraft and that the engine will continue to meet the requirements of § 33.75.

Therefore, due to the close similarity of the GENx model series fan blade design to the previously certified GE90 model series fan blade design, the FAA is proposing to issue similar special conditions as part of the type certification basis for the GENx engine models in lieu of direct compliance to § 33.94(a)(1). These special conditions define the additional requirements that the Administrator considers necessary to establish a level of safety equivalent to that which would be established by direct compliance to the airworthiness standards of § 33.94(a)(1).

#### Type Certification Basis

Under 14 CFR 21.17, GE must show that the GENx series turbofan engine models meet the requirements of the applicable provisions of § 21.21 and part 33. The FAA has determined that the applicable airworthiness regulations in part 33 do not contain adequate or appropriate safety standards for the GENx series turbofan engine models because of its novel and unusual fan blade design features. Therefore, these special conditions are prescribed under the provisions of 14 CFR 11.19 and § 21.16, and will become part of the type certification basis of the GENx engine in accordance with 14 CFR 21.17(a)(2).

As discussed above, these special conditions apply only to the GENx series turbofan engine models. If the type certificate for those models is amended later to include any other models that incorporate the same novel or unusual design features, these special conditions would also apply to the other models under the provisions of 14 CFR 21.101(a)(1).

#### Novel or Unusual Design Features

The GENx-1B54, -1B58, -1B64, -1B67, -70B, -1B70/72, -1B70/75, -72B and -75B engine models will incorporate the following novel or unusual design features: fan blades to be manufactured using carbon graphite composite material that incorporates metal leading and training edges.

#### Applicability

As discussed above, these special conditions apply only to the GENx-1B54, -1B58, -1B64, -1B67, -70B, -1B70/72, -1B70/75, -72B and -75B turbofan engine models. If GE applies later for a change to the type certificate to include another model incorporating the same novel or unusual fan blade

design features, these special conditions would apply to that model as well.

#### Conclusion

This action affects only the carbon fiber composite fan blade design features on the GENx series turbofan engine models. It is not a rule of general applicability, and it affects only the General Electric Company which has applied to the FAA for certification of these fan blade design features.

#### List of Subjects in 14 CFR Part 33

Air transportation, Aircraft, Aviation safety, Safety.

The authority citation for these special conditions continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701-44702, 44704.

#### The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for the GENx series turbofan engines.

1. In lieu of the fan blade containment test with the fan blade failing at the outermost retention groove as specified in § 33.94(a)(1), complete the following requirements:

(a) Conduct an engine fan blade containment test with the fan blade failing at the inner annulus flow path line.

(b) Substantiate by test and analyses, or other methods acceptable to the Administrator, that a minimum material properties fan disk and fan blade retention system can withstand without failure a centrifugal load equal to two times the maximum load which the retention system could experience within approved engine operating limitations. The fan blade retention system includes the portion of the fan blade from the inner annulus flow path line inward to the blade dovetail, the blade retention components, and the fan disk and fan blade attachment features.

(c) Using a procedure approved by the Administrator, establish an operating limitation that specifies the maximum allowable number of start-stop stress cycles for the fan blade retention systems. The life evaluation shall include the combined effects of high cycle and low cycle fatigue. If the operating limitation is less than 100,000 cycles, that limitation must be specified in Chapter 5 of the Engine Manual Airworthiness Limitation Section.

(d) Substantiate that, during the service life of the engine, the total probability of the occurrence of a hazardous engine effect defined in § 33.75 due to an individual blade

retention system failure resulting from all possible causes will be extremely improbable, with a cumulative calculated probability of failure of less than  $10^{-9}$  per engine flight hour.

(e) Substantiate by test or analysis that not only will the engine continue to meet the requirements of § 33.75 following a lightning strike on the composite fan blade structure, but that the lightning strike will also not cause damage to the fan blades that would prevent continued safe operation of the affected engine.

(f) Account for the effects of in-service deterioration, manufacturing variations, minimum material properties, and environmental effects during the tests and analyses required by paragraphs (a), (b), (c), (d), and (e) of these special conditions.

(g) Propose fleet leader monitoring and field sampling programs for the GENx engine fan blades that will monitor the effects of usage on fan blade and retention system integrity. The sampling program should use the experience gained on current GE90 engine model monitoring programs, and must be approved by the FAA prior to certification of the GENx engine models.

Issued in Burlington, Massachusetts on November 7, 2006.

**Francis A. Favara,**

*Manager, Engine and Propeller Directorate, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2006-26166; Directorate Identifier 2006-CE-58-AD]

RIN 2120-AA64

#### Airworthiness Directives; EADS SOCATA Model TBM 700 Airplanes

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for the products listed above. This proposed AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as cracks on a vertical