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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM286; Special Conditions No. 25-270-SC]

Special Conditions: Learjet Inc., Model 55, 55B and 55C Airplanes; High Intensity Radiated Fields (HIRF)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for Learjet Inc., Model 55, 55B and 55C airplanes modified by Garrett Aviation Services. These modified airplanes will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. The modification incorporates the installation of two Honeywell N1 Digital Electronic Engine Controls (DEEC) that perform critical functions. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for the protection of these systems from the effects of high intensity radiated fields (HIRF). 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: The effective date of these special conditions is July 1, 2004. Comments must be received on or before August 16, 2004.

ADDRESSES: Comments on these special conditions may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attn: Rules Docket (ANM-113), Docket No. NM286, 1601 Lind Avenue, SW., Renton Washington, 98055-4056; or

delivered in duplicate to the Transport Directorate at the above address. All comments must be marked: Docket No. NM286.

FOR FURTHER INFORMATION CONTACT:

Meghan Gordon, FAA, Standardization Branch, ANM-113, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2138; facsimile (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA has determined that notice and opportunity for prior public comment is impracticable because these procedures would significantly delay certification of and delivery of the affected airplanes. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA therefore finds that good cause exists for making these special conditions effective upon issuance. However, the FAA invites interested persons to participate in this rulemaking by submitting 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 concerning these special conditions. The docket is available for public inspection 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 7:30 a.m. and 4 p.m., Monday thru Friday, except Federal holidays.

We will consider all comments we receive on or before 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 the FAA to acknowledge receipt of your comments on this proposal, include with your comments 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 1, 2003, Garrett Aviation Services, 1200 North Airport Drive, Capital Airport Springfield, IL 62707, applied for a Supplemental Type Certificate (STC) to modify Learjet Inc., Model 55, 55B and 55C airplanes approved under Type Certificate No. A10CE. The Learjet Inc., Model 55, 55B and 55C airplanes are transport category airplanes. The Learjet Inc., Model 55, 55B and 55C airplanes are powered by two Garrett TFE731-3A-2B turbofans with a maximum takeoff weight of 21,500 pounds. These aircraft operate with a 2-pilot crew and can hold up to 10 passengers. The modification incorporates the installation of Honeywell N1 Digital Electronic Engine Controls (DEEC). The N1 DEEC is a replacement for the existing Analog Electronic Engine Control (EEC), while also providing additional functional capability in the system. The digital avionics/electronics and electrical systems installed under this project in these airplanes have the potential to be vulnerable to HIRF external to the airplane.

Type Certification Basis

Under the provisions of 14 CFR 21.101, Garrett Aviation Services must show that the Learjet Inc., Model 55, 55B and 55C airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A10CE, or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis."

The certification basis for the modified Learjet Inc., Model 55, 55B and 55C airplanes include 14 CFR part 25, dated February 1, 1964, as amended by Amendments 25-1 through 25-20 except for special conditions and exceptions noted in Type Certificate Data Sheet (TDCS) A10CE.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for the Learjet Inc., Model 55, 55B and 55C airplanes because of novel or unusual design features, special

conditions are prescribed under the provisions § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Learjet Inc., Model 55, 55B and 55C airplanes must comply with the noise certification requirement of part 36.

Special conditions, as defined in 14 CFR 11.19, are issued in accordance with § 11.38 and become part of the type certification basis in accordance with § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should Garrett Aviation Services apply at a later date for a supplemental type certificate 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 the provisions of § 21.101.

Novel or Unusual Design Features

The Learjet Inc., Model 55, 55B and 55C airplanes modified by Garrett Aviation Services will incorporate Honeywell N1 DEEC that will perform critical functions. These systems have to potential to be vulnerable to HIRF external to the airplane. The current airworthiness standards (14 CFR part 25) do not contain adequate or appropriate safety standards for the protection of this equipment from the adverse effect of HIRF. Accordingly, this system is considered to be a novel or unusual design feature.

Discussion

There is no specific regulation that addresses protection requirements for electrical and electronic systems from HIRF. Increased power levels from ground-based radio transmitters and the growing use of sensitive avionics/electronics and electrical systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved that is equivalent to that intended by the regulations incorporated by reference; special conditions are needed for Learjet Inc., Models 55, 55B and 55C airplanes modified by Garrett Aviation Services. These special conditions require that new avionics/electronics and electrical systems that perform critical functions be designed and installed to preclude component damage and interruption of function due to both the direct and indirect effects of HIRF.

High-Intensity Radiated Fields (HIRF)

With the trend toward increased power levels from ground-based transmitters, and the advent of space and satellite communications, coupled with electronic command and control of the airplane, the immunity of critical avionics/electronics and electrical systems to HIRF must be established.

It is not possible to precisely define the HIRF to which the airplane will be exposed in service. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF. Furthermore, coupling of electromagnetic energy to cockpit-installed equipment through the cockpit window apertures is undefined. Based on surveys and analysis of existing HIRF emitters, an adequate level of protection exists when compliance with the HIRF protection special condition is shown with either paragraph 1, or 2 below:

1. A minimum threat of 100 volts rms (root-mean-square) per meter electric field strength from 10 KHz to 18 GHz.

a. The threat must be applied to the system elements and their associated wiring harnesses without the benefit of airframe shielding.

b. Demonstration of this level of protection is established through system tests and analysis.

2. A threat external to the airframe of the field strengths identified in the following table for the frequency ranges indicated. Both peak and average field strength components from the Table are to be demonstrated.

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz–100 kHz	50	50
100 kHz–500 kHz	50	50
500 kHz–2 MHz	50	50
2 MHz–30MHz	100	100
30 MHz–70 MHz	50	50
70 MHz–100MHz	50	50
100 MHz–200 MHz	100	100
200 MHz–400 MHz	100	100
400 MHz–700 MHz	700	50
700 MHz–1 GHz	700	100
1 GHz–2 GHz	2000	200
2 GHz–4GHz	3000	200
4 GHz–6 GHz	3000	200
6 GHz–8 GHz	1000	200
8GHz–12 GHz	3000	300
12 GHz–18 GHz	2000	200
18 GHz–40 GHz	600	200

The field strengths are expressed in terms of peak of the root-mean-square (rms) over the complete modulation period.

The threat levels identified above are the result of an FAA review of existing studies on the subject of HIRF, in light of the ongoing work of the Electromagnetic Effects Harmonization

Working Group of the Aviation Rulemaking Advisory Committee.

Applicability

As discussed above, these special conditions are applicable to Learjet Inc., Model 55, 55B and 55C airplanes modified by Garrett Aviation Services. Should Garrett Aviation Services apply at a later date for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features on the Learjet Inc., Model 55, 55B and 55C airplanes modified by Garrett Aviation Services. 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 airplane.

The substance of these special conditions has been subjected to the notice and comment procedure in several prior instances and has been derived without substantive change from those previously issued. Because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these special conditions upon issuance. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and record keeping 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 supplemental type certification basis for the Learjet Inc., Model 55, 55B and 55C airplanes modified by Garrett Aviation Services.

1. *Protection from Unwanted Effects of High-Intensity Radiated Fields (HIRF).* Each electrical and electronic system that performs critical functions must be designed and installed to ensure that the operation and operational capability of these systems

to perform critical functions are not adversely affected when the airplane is exposed to high-intensity radiated fields.

2. For the purpose of these special conditions, the following definition applies: *Critical Functions*: Functions whose failure would contribute to or cause a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Renton, Washington, on July 1, 2004.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 04-16101 Filed 7-14-04; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA-2004-18014; Airspace Docket 04-ACE-43]

Modification of Class E Airspace; Fairbury, NE

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Direct final rule; request for comments.

SUMMARY: This action amends title 14 Code of Federal Regulations, part 71 (14 CFR 71) by revising Class E airspace at Fairbury, NE. A review of the Class E airspace area extending upward from 700 feet above the surface at Fairbury, NE revealed it does not reflect the current Fairbury Municipal Airport reference point (ARP) and is not in compliance with established airspace criteria. This airspace area is enlarged and modified to conform to FAA Orders.

DATES: This direct final rule is effective on 0901 UTC, September 30, 2004. Comments for inclusion in the Rules Docket must be received on or before August 10, 2004.

ADDRESSES: Send comments on this proposal to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW., Washington, DC 20590-0001. You must identify the docket number FAA-2004-18014/ Airspace Docket No. 04-ACE-43, at the beginning of your comments. You may also submit comments on the Internet at <http://dms.dot.gov>. You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets

Office between 9 a.m. and 5 p.m., Monday through Friday, except Friday holidays. The Docket Office (telephone 1-800-647-5527) is on the plaza level of the Department of Transportation NASSIF Building at the above address.

FOR FURTHER INFORMATION CONTACT:

Brenda Mumper, Air Traffic Division, Airspace Branch, ACE-520A, DOT Regional Headquarters Building, Federal Aviation Administration, 901 Locust, Kansas City, MO 64106; telephone: (816) 329-2524.

SUPPLEMENTARY INFORMATION: This amendment to 14 CFR part 71 modifies the Class E airspace area extending upward from 700 feet above the surface at Fairbury, NE. An examination of controlled airspace for Fairbury, NE revealed that the Fairbury Municipal Airport ARP used in the legal description for this Class E airspace area is incorrect and that the airspace area does not comply with airspace requirements for diverse departures as set forth in FAA Order 7400.2E, Procedures for Handling Airspace Matters. The examination also identified a discrepancy in the length of an extension to the Class E airspace area. The legal description was not in compliance with FAA Order 8260.19C, Flight Procedures and Airspace.

This action expands the Fairbury, NE Class E airspace area extending upward from 700 feet above the surface from a 6.4-mile radius to a 7-mile radius of Fairbury Municipal Airport, corrects the ARP in the legal description, increases the length of the north extension from 9.6 to 9.9 miles and brings the legal description of the Fairbury, NE Class E airspace area into compliance with FAA Orders 7400.2E and 8260.19C. This area will be depicted on appropriate aeronautical charts. Class E airspace areas extending upward from 700 feet or more above the surface of the earth are published in paragraph 6005 of FAA Order 7400.9L, Airspace Designations and Reporting Points, dated September 2, 2003, and effective September 16, 2003, which is incorporated by reference in 14 CFR 71.1. the Class E airspace designation listed in this document will be published subsequently in the Order.

The Direct Final Rule Procedure

The FAA anticipates that this regulation will not result in adverse or negative comment and, therefore, is issuing it as a direct final rule. Previous actions of this nature have not been controversial and have not resulted in adverse comments or objections. Unless a written adverse or negative comment, or a written notice of intent to submit

an adverse or negative comment is received within the comment period the regulation will become effective on the date specified above. After the close of the comment period, the FAA will publish a document in the **Federal Register** indicating that no adverse or negative comments were received and confirming the date on which the final rule will become effective. If the FAA does receive, within the comment period, an adverse or negative comment, or written notice of intent to submit such a comment, a document withdrawing the direct final rule will be published in the **Federal Register**, and a notice of proposed rulemaking may be published with a new comment period.

Comments Invited

Interested parties are invited to participate in this rulemaking by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify both docket numbers and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. FAA-2004-18014/Airspace Docket No. 04-ACE-43." The postcard will be date/time stamped and returned to the commenter.

Agency Findings

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is noncontroversial and unlikely to result in adverse or negative comments. For the reasons discussed in the preamble, I certify that this regulation (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under Department of Transportation (DOT) Regulatory Policies and procedures (44 FR 11034,