

### Cooktop Installations With Electrically-Powered Burners

1. Means, such as conspicuous burner-on indicators, physical barriers, or handholds, must be installed to minimize the potential for inadvertent personnel contact with hot surfaces of both the cooktop and cookware. Conditions of turbulence must be considered.

2. Sufficient design means must be included to restrain cookware while in place on the cooktop, as well as representative contents (soups or sauces, for example) from the effects of flight loads and turbulence.

(a) Restraints must be provided to preclude hazardous movement of cookware and contents. These restraints must accommodate any cookware that is identified for use with the cooktop.

(b) Restraints must be designed to be easily utilized and effective in service. The cookware restraint system should also be designed so that it will not be easily disabled, thus rendering it unusable.

(c) Placarding must be installed which prohibits the use of cookware that cannot be accommodated by the restraint system.

3. Placarding must be installed which prohibits the use of cooktops (that is, power on any burner) during taxi, takeoff, and landing (TTL).

4. Means must be provided to address the possibility of a fire occurring on or in the immediate vicinity of the cooktop caused by materials or grease inadvertently coming in contact with the burners.

**Note:** Two acceptable means of complying with this requirement are as follows:

- Placarding must be installed that prohibits any burner from being powered when the cooktop is unattended (this would prohibit a single person from cooking on the cooktop and intermittently serving food to passengers while any burner is powered). In addition, a fire detector must be installed in the vicinity of the cooktop, which provides an audible warning in the passenger cabin; and a fire extinguisher of appropriate size and extinguishing agent must be installed in the immediate vicinity of the cooktop. A fire on or around the cooktop must not block access to the extinguisher. One of the fire extinguishers required by § 25.851 may be used to satisfy this requirement if the total complement of extinguishers can be evenly distributed throughout the cabin. If this is not possible, then the extinguisher in the galley area would be additional.

OR

- An automatic, thermally-activated fire suppression system must be installed to extinguish a fire at the cooktop and immediately adjacent surfaces. The agent used in the system must be an approved total flooding agent suitable for use in an occupied area. The fire suppression system must have

a manual override. The automatic activation of the fire suppression system must also automatically shut off power to the cooktop.

5. The surfaces of the galley surrounding the cooktop, which would be exposed to a fire on the cooktop surface or in cookware on the cooktop, must be constructed of materials that comply with the flammability requirements of Part III of Appendix F of part 25. This requirement is in addition to the flammability requirements typically required of the materials in these galley surfaces. During the selection of these materials, consideration must also be given to ensure that the flammability characteristics of the materials will not be adversely affected by the use of cleaning agents and utensils used to remove cooking stains.

6. The cooktop must be ventilated with a system independent of the airplane cabin and cargo ventilation system. Procedures and time intervals must be established to inspect and clean or replace the ventilation system to prevent a fire hazard from the accumulation of flammable oils. These procedures and time intervals must be included in the Instructions for Continued Airworthiness (ICA). The ventilation system ducting must be protected by a flame arrester.

**Note:** The applicant may find additional useful information in Society of Automotive Engineers, Aerospace Recommended Practice 85, Rev. E, "Air Conditioning Systems for Subsonic Airplanes," dated August 1, 1991.

7. Means must be provided to contain spilled foods or fluids in a manner that will prevent the creation of a slipping hazard to occupants and will not lead to the loss of structural strength due to airplane corrosion.

8. Cooktop installations must provide adequate space for the user to immediately escape a hazardous cooktop condition.

9. A means to shut off power to the cooktop must be provided at the galley containing the cooktop and in the cockpit. If additional switches are introduced in the cockpit, revisions to smoke or fire emergency procedures of the AFM will be required.

10. A readily deployable cover must be provided to cover the cooktop during taxi, takeoff, and landing (TT&L). The deployment of the cover must automatically shut off power to the cooktop.

Issued in Renton, Washington, on June 3, 2004.

**Franklin Tiangsing,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM281; Special Conditions No. 25-265-SC]

#### Special Conditions: Raytheon Aircraft MU-300-10 and 400 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 Raytheon Aircraft Company Model MU-300-10 and 400 airplanes modified by Elliott Aviation Technical Products Development, Inc. These airplanes will have novel and unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. The modification incorporates the installation of a Honeywell AZ-252 Advanced Air Data Computer and optional BA-250 and AM-250 Altimeters. 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 June 3, 2004. Comments must be received on or before July 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. NM281, 1601 Lind Avenue SW., Renton, Washington, 98055-4056; or delivered in duplicate to the Transport Airplane Directorate at the above address. Comments must be marked: Docket No. NM281. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

**FOR FURTHER INFORMATION CONTACT:** Greg Dunn, FAA, Airplane and Flight Crew Interface Branch, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98055-4056; telephone (425) 227-2799; facsimile (425) 227-1149.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA has determined that notice and opportunity for prior public comment hereon is unnecessary as 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, we invite interested persons to participate in this rulemaking by submitting 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 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 through 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 in light of the comments received.

If you want the FAA to acknowledge receipt of your comments on these special conditions, 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 March 22, 2004, Elliott Aviation Technical Products Development, Inc., Quad City Airport, P.O. Box 100, Moline, Illinois 61266-0100, applied for a supplemental type certificate (STC) to modify Raytheon Aircraft Company Models MU-300-10 (Diamond II) and 400 (Beechjet) airplanes. The Raytheon airplanes are small transport category airplanes powered by two turbojet

engines, with maximum takeoff weights of up to 15,780 pounds. These airplanes operate with a 2-pilot crew and can seat up to 9 passengers. The proposed modification incorporates the installation of a Honeywell AZ-252 Advanced Air Data Computer with optional pilot's BA-250 Altimeter and Co-pilot's AM-250 Altimeter. The information this equipment presents is flight critical. The avionics/electronics and electrical systems to be installed on these airplanes have the potential to be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

**Type Certification Basis**

Under the provisions of 14 CFR 21.101, Elliott Aviation must show that the Raytheon Aircraft Company Model MU-300-10 and 400 airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A16SW, 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 regulations incorporated by reference in Type Certificate No. A16SW include 14 CFR part 25, as amended by Amendments 25-1 through 25-40; §§ 25.1351(d), 25.1353(c)(5), and 25.1450 as amended by Amendment 25-41; §§ 25.29, 25.255, and 25.1353(c)(6) as amended by Amendment 25-42; § 25.361(b) as amended by Amendment 25-46; and 14 CFR part 36 as amended by Amendment 36-1 through 36-12.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for modified Model MU-300-10 and 400 airplanes, because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Raytheon Model MU-300-10 and 400 airplanes must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR 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 Elliott Aviation apply at a later date for 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 modified Model MU-300-10 and 400 airplanes will incorporate avionics/electrical systems that will perform critical functions. These systems may be vulnerable to HIRF external to the airplane.

**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/electrical and electronic systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the Model MU-300-10 and 400 airplanes. 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, plus the advent of space and satellite communications, coupled with electronic command and control of the airplane, the immunity of critical digital 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 is shown with either HIRF protection special condition 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 indicated 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–30 MHz .....	100	100
30 MHz–70 MHz .....	50	50
70 MHz–100 MHz .....	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–4 GHz .....	3000	200
4 GHz–6 GHz .....	3000	200
6 GHz–8 GHz .....	1000	200
8 GHz–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 the Raytheon Aircraft Company Model MU–300–10 and 400 airplanes. Should Elliott Aviation Technical Products Development, Inc. apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of 14 CFR 21.101.

#### Conclusion

This action affects only certain novel or unusual design features on the Raytheon Aircraft Company Model MU–300–10 and 400 airplanes. 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 airplanes.

The substance of the special conditions for these airplanes 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 immediately. 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 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 supplemental type certification basis for Raytheon Aircraft Company Model MU–300–10 and 400 airplanes modified by Elliott Aviation Technical Products Development, Inc.

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 June 3, 2004.

#### Franklin Tiangsing,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 2004–NM–29–AD; Amendment 39–13673; AD 2004–03–34 R1]

RIN 2120–AA64

#### Airworthiness Directives; Boeing Model 737–100, –200, –200C, –300, –400, and –500 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment revises an existing airworthiness directive (AD), applicable to certain Boeing Model 737–100, –200, –200C, –300, –400, and –500 series airplanes, that currently requires replacing existing screw, nut, and washers that attach the latch cable assembly to the latch block assembly of the door mounted escape slides, with new, improved screw, nut, and washers. The actions specified by that AD are intended to prevent the latch cable assembly from disconnecting from the latch block assembly of the door mounted escape slide, which could result in an escape slide not deploying in an emergency situation. This amendment revises the parts installation paragraph to allow certain nuts to be installed and is intended to address the identified unsafe condition.

**DATES:** Effective July 21, 2004.

The incorporation by reference of a certain publication, as listed in the regulations, was approved previously by the Director of the Federal Register as of March 24, 2004 (69 FR 7553, February 18, 2004).

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124–2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

#### FOR FURTHER INFORMATION CONTACT:

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