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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2007-27191; Directorate Identifier 2007-CE-007-AD; Amendment 39-15167; AD 2007-17-09]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Mitsubishi Heavy Industries MU-2B Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) to supersede 93-07-11 and AD 94-04-16, which apply to certain Mitsubishi Heavy Industries MU-2B series airplanes. AD 93-07-11 and AD 94-04-16 currently require you to reduce the maximum deflection of the elevator nose-down trim to a 1-degree to 3-degree range. When the above AD actions were issued, there was no associated elevator trim indicator change. Without such change, the trim reaches the maximum nose-down limit and the indicator still shows additional nose-down trim available. In attempting to force additional nose-down trim, pilots have manually jammed the trim system preventing subsequent electric trim changes until the pilot manually freed the trim wheel. Consequently, this AD retains the actions from AD 93-07-11 and AD 94-04-16 and adds the action of modifying the elevator trim indicator scale dial to be consistent with the reduced elevator trim capability. We are issuing this AD to prevent the above scenarios from occurring with consequent loss of control.

**DATES:** This AD becomes effective on September 25, 2007.

On September 25, 2007, the Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 091/27-011, dated August 6, 1998; and Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 228, dated July 13, 1998 listed in this AD.

As of June 1, 1993, the Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 079/27-010, dated August 28, 1992, listed in this AD.

As of April 11, 1994, the Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 216, dated September 11, 1992, listed in this AD.

**ADDRESSES:** For service information identified in this AD, contact Mitsubishi Heavy Industries America, Inc., 4951 Airport Parkway, Suite 800, Addison, Texas 75001; telephone: 972-934-5480; fax: 972-934-5488.

To view the AD docket, go to U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, or on the Internet at <http://dms.dot.gov>. The docket number is FAA-2007-27191; Directorate Identifier 2007-CE-007-AD.

**FOR FURTHER INFORMATION CONTACT:** Werner G. Koch, Aerospace Engineer, Fort Worth Airplane Certification Office, ASW-150, Rotorcraft Directorate, FAA, 2601 Meacham Boulevard, Fort Worth, Texas 76137-4298; telephone: (817) 222-5133; fax: (817) 222-5960.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On March 27, 2007, we issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Mitsubishi Heavy Industries MU-2B series airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on April 3, 2007 (72 FR 15850). The NPRM proposed to supersede AD 93-07-11 and AD 94-04-16, retain the actions of reducing the maximum deflection of the elevator nose-down trim to a 1-degree to 3-degree range from AD 93-07-11 and AD 94-04-16, and add the action of modifying the elevator trim indicator scale dial to be consistent with the reduced elevator trim capability.

### **Comments**

We provided the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and FAA's response to each comment:

#### **Comment Issue No. 1: Increased Trim Down Limit**

Salomon R. Dionicio suggests increasing the trim down limit, because under certain conditions some pilots may need more down trim. The commenter is also concerned about the needle bending or jumping and the cable stretching every time the wheel is forced against the stop.

MU-2B series airplanes, both the long and short body, for all affected weights and center-of-gravity conditions, require very little nose-down trim. A review of FAA data revealed incidents that occurred before issuance of AD 93-07-11 and AD 94-04-16 where pilots attempted to override the autopilot and inadvertently ran the nose-down trim to the down stop. This resulted in excessive control wheel force that could only be removed by either manually or electrically trimming the nose-down trim back into a normal (or positive) range. AD 93-07-11 and AD 94-04-16 reduced the nose-down trim from a range of -10 degrees to a -1 degree to -3 degree range. Since the issuance of those ADs, FAA data shows no incident involving excessive nose-down trim forces; therefore, the FAA disagrees with increasing the trim limit in the nose-down direction.

A stopper limits the travel nut in the trim system preventing any cable from stretching. The FAA has not received any reports of any needles bending or cables failing.

We are not changing the AD as a result of this comment.

#### **Comment Issue No. 2: Revised Compliance Time**

Mitsubishi Heavy Industries America, Inc. suggests revising the compliance time in paragraph (e)(1)(i) of the AD to add a 6-month calendar date limitation in addition to the 100-hour flight time

limitation since some airplanes fly infrequently. The addition of a 6-month compliance time would more closely match the compliance time of the Japan Civil Aviation Bureau (JCAB) technical circular directive No. TCD-3740A-98 and avoid possible confusion for operators.

We disagree with the commenter. The 100-hour compliance time in paragraph (e)(1)(i) is the compliance time for the actions we are retaining from AD 94-04-16 and refers to within 100 hours from April 11, 1994, the effective date of that AD.

We are not changing this final rule AD action as a result of this comment.

## Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial corrections. In the NPRM we inadvertently omitted Model MU-2B-36 from the Applicability section for TCDS A10SW. Since that model appears on TCDS A10SW, we are adding it to the applicability in case the manufacturer produces serial numbers for this model in the future. However, since no serial numbers currently exist for this model on TCDS A10SW, adding the model to the applicability does not add to the burden of this AD. We have determined that these minor corrections:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

## Costs of Compliance

We estimate that this AD affects 400 airplanes in the U.S. registry.

### Costs Retained From AD 93-07-11 and AD 94-04-16

We estimate the following costs to do the modification of the elevator nose-down trim:

| Labor Cost                           | Parts Cost | Total Cost Per Airplane | Total Cost on U.S. Operators |
|--------------------------------------|------------|-------------------------|------------------------------|
| 6 work-hours X \$80 per hour = \$480 | \$300      | \$780                   | \$312,000                    |

### Additional Costs for This AD

We estimate the following costs to do the modification of the elevator trim indicator scale dial:

| Labor Cost                         | Parts Cost | Total Cost Per Airplane | Total Cost on U.S. Operators |
|------------------------------------|------------|-------------------------|------------------------------|
| 1 work-hour X \$80 per hour = \$80 | N/A        | \$80                    | \$32,000                     |

## Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with

promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this AD.

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this AD (and other information as included in the Regulatory Evaluation) and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "Docket No. FAA-2007-27191; Directorate Identifier 2007-CE-007-AD" in your request.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 93-07-11, Amendment 39-8543 and AD 94-04-16, Amendment 39-8836 (59 FR 8520, February 23, 1994), and adding the following new AD:



**2007-17-09 Mitsubishi Heavy Industries:** Amendment 39-15167; Docket No. FAA-2007-27191; Directorate Identifier 2007-CE-007-AD.

**Effective Date**

(a) This AD becomes effective on September 25, 2007.

**Affected ADs**

(b) This AD supersedes AD 93-07-11, Amendment 39-8543; and AD 94-04-16, Amendment 39-8836.

**Applicability**

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

(1) Category 1 Airplanes (TCDS A2PC):

| Model   | Serial Numbers                       |
|---|--------------------------------------|
| (i) MU-2B, MU-2B-10, MU-2B-15, MU-2B-20, MU-2B-25, and MU-2B-26 | 008 through 347 (except 313 and 321) |
| (ii) MU-2B-30, MU-2B-35, and MU-2B-36                           | 501 through 696 (except 652 and 661) |

(2) Category 2 Airplanes (TCDS A10SW):

| Model  | Serial Numbers                        |
|--|---------------------------------------|
| (i) MU-2B-25, MU-2B-26, MU-2B-26A, and MU-2B-40  | 313SA, 321SA, 348SA through 459SA     |
| (ii) MU-2B-35, MU-2B-36, MU-2B-36A, and MU-2B-60 | 652SA, 661SA and 697SA through 1569SA |

**Unsafe Condition**

(d) This AD results from several incidents caused by excessive control wheel force. We are issuing this AD to retain the actions of reducing the maximum deflection of the elevator nose-down trim to a 1-degree to 3-degree range from AD 93-07-11 and AD 94-04-16 to prevent excessive control wheel force caused by extreme elevator nose-down trim deflection. We are also issuing this AD to modify the elevator trim indicator scale dial to be consistent with the reduced elevator trim capability. Inconsistencies between the elevator indicator scale dial and the elevator trim mechanical stop may result in the pilot thinking that more nose-down trim is available beyond the mechanical stop. Attempting to force additional nose-down trim beyond the mechanical stop may jam the trim

system, preventing subsequent electric trim changes until the pilot manually frees the trim wheel. These conditions may result in loss of control.

## Compliance

(e) To address this problem, you must do the following, unless already done:

| Actions   | Compliance   | Procedures  |
|---|--|---|
| (1) Reduce the maximum deflection of the elevator nose-down trim to a 1-degree to 3-degree range. | <p>(i) <u>For Category 1 airplanes:</u><br/>Within the next 100 hours time-in-service (TIS) after April 11, 1994 (the effective date of AD 94-04-16).</p> <p>(ii) <u>For Category 2 airplanes:</u><br/>Within the next 100 hours TIS after June 1, 1993 (the effective date of AD 93-07-11).</p> | <p>(A) <u>For Category 1 airplanes:</u> Follow Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 216, dated September 11, 1992.</p> <p>(B) <u>For Category 2 airplanes:</u> Follow Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 079/27-010, dated August 28, 1992.</p> |
| (2) Modify the elevator trim indicator scale dial.  | Within the next 100 hours TIS after September 25, 2007 (the effective date of this AD).  | <p>(i) For Category 1 airplanes: Follow Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 228, dated July 13, 1998.</p> <p>(ii) For Category 2 airplanes: Follow Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 091/27-011, dated August 6, 1998.</p>                    |

## Alternative Methods of Compliance (AMOCs)

(f) The Manager, Fort Worth Airplane Certification Office (ACO), FAA, ATTN: Werner G. Koch, Aerospace Engineer, Fort Worth ACO, ASW-150, Rotorcraft Directorate, FAA, 2601 Meacham Boulevard, Fort Worth, Texas 76137-4298; telephone: (817) 222-5133; fax: (817) 222-5960, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(g) AMOCs approved for AD 93-07-11, Amendment 39-8543 and AD 94-04-16, Amendment 39-8836 are approved for this AD.

## Material Incorporated by Reference

(h) You must use Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 216, dated September 11, 1992; Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 079/27-010, dated August 28, 1992; Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 228, dated July 13, 1998; and Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 091/27-011, dated August 6, 1998; to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 228, dated July 13, 1998; and Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 091/27-011, dated August 6, 1998; under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On June 1, 1993, the Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 079/27-010, dated August 28, 1992, listed in this AD.

(3) On April 11, 1994, the Director of the Federal Register approved the incorporation by reference of Mitsubishi Heavy Industries, Ltd., Service Bulletin No. 216, dated September 11, 1992, listed in this AD.

(4) For service information identified in this AD, contact Mitsubishi Heavy Industries America, Inc., 4951 Airport Parkway, Suite 800, Addison, Texas 75001; telephone: 972-934-5480; facsimile: 972-934-5488.

(5) You may review copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106; 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).

Issued in Kansas City, Missouri, on August 14, 2007.

Terry L. Chasteen,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7-16288 Filed 8-20-07; 8:45 am]