



TECHNICAL INSTRUCTION HAC04-003 Rev N/C August 12, 2004

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**Airworthiness Directive 93-05-05  
(BOEING Model 737-300, 737-400, and 737-500 Series Airplanes)**

## PART NUMBER APPLICATION

**M649-341-011-0**

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## TECHNICAL INSTRUCTION HAC04-003 Rev N/C August 12, 2004

Title: Airworthiness Directive 93-05-05 (BOEING Model 737-300, 737-400, and 737-500 Series Airplanes)  
Issue Sequence Number: HAC04-003

### 1. Reason

This HEICO Aerospace Technical Instruction (TI) is in response to questions from HEICO customers regarding Airworthiness Directive (AD) 93-05-05 (Attachment 1) which instructs operators to make engine modifications to prevent engine flameout during airplane descent in moderate to severe inclement weather conditions.

Contact HEICO Customer Support for assistance or questions regarding this Technical Instruction at:

- Telephone: 954-961-9800 (8AM to 5PM EST)
- FAX: 954-987-7585
- Email: [cs@heico.com](mailto:cs@heico.com)

### 2. Discussion

HEICO Aerospace has received PMA (Attachment 2) for part number 649-341-011-0 that is required as a terminating action for AD 93-05-05. Several customers have inquired as to whether the HEICO PMA part could be substituted in lieu of the OEM part specified.

The FAA has provided HEICO Aerospace with a letter (Attachment 3) that allows the use of the HEICO Part as an alternative method of compliance to the AD.

Therefore, the use of HEICO PMA Part Number M649-341-011-0 may be used to satisfy the Airworthiness Directive requirements.

### 3. Material Information

This TI will be maintained and the latest approved revision posted on the HEICO web site at <http://ipc.heico.com>.

### 4. Revision and Approval History

Initial Release August 12, 2004



## Attachment 1 AD-93-05-05 Airworthiness Directive

### ► Federal Register Information

#### ▼ Header Information

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

Docket No. 92-NM-27-AD; Amendment 39-8510; AD **93-05-05**

Airworthiness Directives; BOEING Model 737-300, 737-400, and 737-500 Series Airplanes  
**PDF Copy (If Available):**

#### ▼ Preamble Information

AGENCY: Federal Aviation Administration, DOT

DATES: Effective April 29, 1993.

#### ▼ Regulatory Information

**93-05-05 BOEING:** Amendment 39-8510. Docket 92-NM-27-AD. Supersedes AD 88-13- 51 R1, Amendment 39-6088.

Applicability: Model 737-300, 737-400, and 737-500 series airplanes; equipped with CFM International CFM56-3 series engines; certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine flameout during airplane descent in moderate to severe inclement weather conditions, accomplish the following:

(a) For Model 737-300 series airplanes: Within 10 days after December 30, 1988 (the effective date of AD 88-13-51 R1, Amendment 39-6088), accomplish the procedures specified in paragraphs (a)(1), (a)(2), and (a)(3) of this AD:

[http://www.airweb.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgad.nsf/0/C3E9F86A71B02FAE86256961...](http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgad.nsf/0/C3E9F86A71B02FAE86256961...) 8/12/2004

(1) Revise the Limitations Section of the FAA-approved Airplane Flight Manual (AFM) by adding the following instructions. This may be accomplished by inserting a copy of this AD into the AFM. (Where appropriate, remove the previous inserted copy of AD 88-13-51 from the AFM.)

**"OPERATION IN MODERATE TO HEAVY RAIN, HAIL, OR SLEET:**

When operating in or in the vicinity of (near) moderate to heavy rain, hail, or sleet, accomplish the following:

(i) Engine start switches.....FLIGHT

(ii) Minimum Engine N1.....45%

(iii) Auto-throttle.....OFF

NOTE: Operation in or in the vicinity of (near) moderate to heavy rain, hail, or sleet is to be assumed if indicated by any of the following sources: weather radar, reports, or observations.

**OPERATING IN THUNDERSTORM ACTIVITY:**

**Cautionary Note**

Flight operation should be conducted so that operation within 5 miles of thunderstorm activity is avoided."

(2) For operations in known or forecast rain, hail, or sleet, notwithstanding the Minimum Equipment List (MEL), the weather radar must be operable for dispatch.

(3) Install a placard (red base, white lettering) on the instrument panel in clear view of the flight crew and in close proximity of the engines' N1 indication gauges, that reads as follows:

"Maintain At Least 45% N1 When Operating In Or Near Moderate To Heavy Rain, Hail, Or Sleet."

(b) For Model 737-300 series airplanes: Within the next 48 months after the effective date of this AD, accomplish the engine modification described in Boeing Service Bulletin 737-77-1031, Revision 1, dated May 14, 1992. Accomplishment of this modification constitutes terminating action for the requirements of paragraph (a) of this AD; the AFM revision, the MEL configuration requirements, and the N1 placard may be removed at that time.

(c) For Model 737-400 and 737-500 series airplanes: Within the next 48 months after the effective date of this AD, accomplish the engine modification described in Boeing Service Bulletin 737-77-1031, Revision 1, dated May 14, 1992. Upon accomplishment of this modification, the AFM limitations pertaining to "OPERATION IN MODERATE TO HEAVY RAIN, HAIL, OR SLEET" may be removed, as well as the related flight compartment instrument panel placard, related MEL configuration requirements, and any related 45% N1 idle indication/control limitations.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

NOTE 1: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

NOTE 2: Alternative methods of compliance previously granted for Amendment 39- 6088, AD 88-13-51 R1, continue to be considered as acceptable alternative methods of compliance for paragraph (a) of this amendment.

(e) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the airplane to a location

where the requirements of this AD can be accomplished.

(f) The modification shall be done in accordance with Boeing Service Bulletin 737- 77-1031, Revision 1, dated May 14, 1992. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on April 29, 1993.

▼ **Footer Information**

▼ **Comments**

Attachment 2

PARTS MANUFACTURER APPROVAL NO. PQ1014CE

PRODUCTION APPROVAL LISTING - SUPPLEMENT NO. 61

DATED MARCH 4, 2002

FEDERAL AVIATION ADMINISTRATION - PARTS MANUFACTURING  
APPROVAL

McClain International  
4785 Roosevelt Highway  
College park, Georgia 30349

<u>Part Name</u>	<u>Part Number</u>	<u>Approved Replacement for</u>	<u>FAA Design Approval Means</u>	<u>Installation Eligibility</u>	<u>Model</u>
Deflector	M301-567-701-0	301-567-701-0	14 CFR Part 21.303(c)(4), Test and Computation and Drawing No. M301-567- 701-0 Rev. N/C Dates May 8, 2001 or Later FAA Approval	CFMI	CFM56-2,-2A,-2B CFM56-3,-3B,-3C
Washer	M649-341-011-0	649-341-011-0	14 CFR Part 21.303(c)(4), Test and Computation and Drawing No. M649-341- 011-0 Rev N/C Dated November 27, 2001 or Later FAA Approval	CFMI	CFM56-2, -2A,-2B CFM56-3, -3B, 3C CFM56-5, -5B, -5C CFM56-7B

**-END OF LISTING-**

**NOTE: Minor design changes (reference 14 CFR Part 21 §§ 21.93 and 21.95) must be submitted in a manner as determined by the ACO. Major design changes (reference 14 CFR Part 21 §§ 21.93 and 21.97) to drawings and specifications are to be handled in the same manner as that for an original FAA-PMA.**



Jim Reeves

Manager, Atlanta Manufacturing  
Inspection District Office



## Attachment 3

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**Transport Airplane Directorate  
Aircraft Certification Service**

1601 Lind Avenue S.W.  
Renton, Washington 98055-4056

JUL 18 2002

In Reply  
Refer To: 140S-02-232

Mr. Richard Young  
Engineer  
McClain International, Incorporated  
4785 Roosevelt Highway  
College Park, GA 30349

Dear Mr. Young:

Alternative Method of Compliance for AD 93-05-05

Your letter dated June 21, 2002, requests an alternative method of compliance from the Federal Aviation Administration (FAA) to Airworthiness Directive (AD) 93-05-05 for the affected Boeing Model 737 series airplanes.

That AD requires affected operators to accomplish the engine modifications described in Boeing Service Bulletin 737-77-1031, Revision 1, dated May 14, 1992 as terminating action for the requirements of paragraph (a) of that AD for Model 737-300 series airplanes and as a prerequisite for the removal of the Airplane Flight Manual (AFM) limitation, according to paragraph (c) of that AD, for Model 737-400 and -500 series airplanes. The required engine modifications utilize a washer, Part Number 649-341-011-0, in the attachment of the replacement spinner according to the instructions given in CFMI Service Bulletin SB 72-579. The spinner is replaced, in addition to other modifications, in order to improve the hail ingestion capability of the engine. In your letter, McClain International requests that washer Part Number M649-341-011-0, which has been approved through the Atlanta Manufacturing Inspection District Office according to the Parts Manufacturing Approval (PMA) process under Project No. PQ1014CE, be approved for substitution for washer Part Number 649-341-011-0 when performing the modifications required by AD 93-05-05.

The FAA approves of your proposed alternative method of compliance to AD 93-05-05. This letter, in addition to your letter, should be maintained as part of the airplanes permanent records.

140S-02-232

2

If you have any further questions, please contact Mr. Doug Pegors of the Propulsion Branch at (425) 227-1446.

Sincerely,

A handwritten signature in black ink, appearing to read "Lirio Liu-Nelson". The signature is fluid and cursive, with a large initial "L" and "N".

Lirio Liu-Nelson  
Manager, Seattle Aircraft  
Certification Office