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FAA-04-19003-7

# Aircraft Certification Service Transport Airplane Directorate "Short" Domestic Worksheet

DOCKET NUMBER: 2003-NM-245-AD

TECH WRITER: Wilson

**Manufacturer's Service Information/Revision/Date (Attach 2 clean copies):**

Boeing Service Bulletin 737-53A1241 R0, dated June 13, 2002

COSP Board: 10/29/03

**PROPOSED CORRESPONDING ACTION:**

<input type="checkbox"/> Emergency AD	<i>Is this action one of the following?</i>
<input type="checkbox"/> Immediately Adopted AD	<input type="checkbox"/> Supersedure of AD (Docket No. TBD)
<input checked="" type="checkbox"/> Notice of Proposed Rulemaking	<input type="checkbox"/> Revision of AD (Docket No. TBD)
<input type="checkbox"/> Final rule after NPRM <i>(If FRAN, complete Attachment A.)</i>	<input type="checkbox"/> Supplemental NPRM (Docket No. TBD) <i>(If any of the above is checked, complete Attachment B.)</i>
<input type="checkbox"/> Other (No-Notice Final Rule)	

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**1. Model, Applicability, # Airplanes (both U.S. & worldwide) - Refer to SB; state any differences for this AD:**

Model: Boeing Model 737-100/-200/-200C/-300/-400/-500 Airplanes  
Applicability: All

# U.S. airplanes: 870 # worldwide airplanes: 3132  
Source: National Aviation Safety Data Analysis Center (NASDAC) September 2003 Database

**AD Summary and Discussion Sections:**

**2. What has the manufacturer told the FAA? "The FAA has received reports indicating that..."**  
Describe background/events that prompted the AD in 1-2 sentences. Refer to SB 'Reason.'

Operators have reported numerous fatigue cracks in the skin, bonded skin doubler, bear strap, and doorway frames of the forward and aft cargo door cutouts. Several fatigue cracks have also been reported in the skin/doubler and bear strap at the upper corners of the main cargo door cutout.

**3a. What is the unsafe condition AND its cause? "These actions are intended to prevent..."**  
Describe unsafe condition and its cause in 2-3 sentences (non-technical terms). Refer to SB 'Reason.'

The inspections of this AD are intended to detect fatigue cracks around the forward/aft/main cargo door cutouts before they become critical. Undetected fatigue cracks in the fuselage skin, skin doubler, and bear strap can propagate to critical length under cyclic cabin pressure loading and result in rapid decompression of the fuselage pressure vessel. Undetected cracks at a cargo doorway frame can render the door retention mechanisms ineffective and lead to loss of a cargo door and/or rapid decompression of the fuselage pressure vessel.

The inspections of this AD includes areas of the forward aft cargo doorway frames affected by AD 88-11-12 and AD 93-14-10. The requirements of AD 93-14-10 and AD 88-11-12 are still applicable. *Related ADs*

**3b. What is the end-level effect on the airplane?**  
Provide a 1-sentence description; use non-technical terms.

“...which could result in...”

Cracks at cargo doorway skins, doublers, bear straps, or fuselage frames can propagate and lead to loss of a cargo door and/or rapid decompression of the fuselage pressure vessel.

**AD Relevant Service Information Section:**

**4. (Yes or No) Is the corrective action required in this AD considered to be interim action?**

No

**5. (Yes or No) Is this action considered ‘sensitive’, or is it related to a Safety Recommendation?**  
(If yes, state why sensitive, and/or provide copy of FAA/NSTB Safety Recommendation.)

No

**6. Does the referenced service document include reference to an “operator’s equivalent procedure?”**  
[If yes, specify whether that procedure employed by the operator (even if not technically ‘equivalent’) adequately addresses the identified unsafe condition and provides an acceptable level of safety.]

No

**7. AD Differences Section (if needed):**

“This AD differs from the SB ....”

Check if: Flight with Cracks  Mandate Terminating Action  Contact Mgr, FAA   
Compliance time  Mandate AFM Action   
Describe any other differences between service bulletin and this proposed FAA AD.

Repair damage per the Service Bulletin unless it indicates that Boeing should be contacted. Alternate repairs may be used if approved by the FAA Seattle Aircraft Certification Office Manager, or by a Boeing Company DER that has been authorized by the FAA.

Inspect per the Service Bulletin unless it indicates that Boeing should be contacted. Alternate inspections may be used if approved by the FAA Seattle Aircraft Certification Office Manager, or by a Boeing Company DER that has been authorized by the FAA.

A grace period of 4,000 flight cycles from the effective date of the AD is indicated. In contrast, the Service Bulletin indicates a grace period of 4,000 flight cycles from the effective date of the Service Bulletin.

Reporting of discrepancies is not required. In contrast, the Service Bulletin requests that operators report any discrepancies.

**AD Cost Impact Section:**

**8a. Work hours for corrective action(s) required: (List hours or reference SB ‘Manpower’).**

Accomplishment requires approximately 40 task hours, 23 elapsed hours per airplane.

**8b. Parts Cost, if any: (List costs or reference SB 'Material - Cost and Availability').**

There are no parts associated with this AD. This is an inspection only AD.

**9. AD Body Section:**

**For EACH corrective action, mark up SB, if usable -OR- fill out Corrective Action Table below.**

**9a: Action #1**

**What is the corrective action?**

Inspect the forward and aft cargo doorway skin, doubler, bearstrap using general visual and detailed visual plus HFEC and LFEC inspection methods. Inspect the forward and aft cargo doorway frames using detailed visual, LFEC, and HFEC inspection methods. Inspect the upper corners of the main cargo doorway skin, doubler and bearstrap using detailed visual and HFEC inspection methods.

**What is its compliance time?**

**(Add grace period if not available)**

Inspect the skin, doubler, and bearstrap of the forward and aft cargo doorways prior to 50,000 total airplane flight cycles or 4,000 flight cycles after the effective date of the AD, whichever is later. Inspect the forward and aft cargo doorway frames prior to 20,000 / 40,000 total airplane flight cycles depending on configuration or 4,000 flight cycles after the effective date of the AD, whichever is later. Inspect the skin, doubler, and bearstrap at the upper corners of the main cargo doorway prior to 20,000 total airplane flight cycles or 4,000 flight cycles after the effective date of the AD, whichever is later.

**What is repetitive interval?**

4,000 -12,000 Flight Cycles depending on inspection area, inspection method, and airplane group.

**10. (Yes or No) Should corrective action(s) required in this AD to be applied to spares as well?**

No

**11. Should a ferry flight permit be:  Permitted  Permitted with limitations\*  Prohibited**

*\*List limitations.*

**12. With whom outside the FAA has this proposal been discussed (i.e. ATA, RAA, ALPA, etc.)?**

**NOTE: This item should be completed prior to submission of the AD Proposal Worksheet.**

Organization

Boeing Safety  
ATA

Person Contacted

Leo Rydzewski  
Joe White

Date

10/3/03  
10/3/03

Reaction

Noted without exception  
Noted without exception

**13. Check the appropriate response:**

Yes  No  Does this action affect the Presidential fleet?

Yes  No  Does this action affect the FAA fleet?

Yes  No  Was this action prompted by the use of suspected unapproved parts (SUP)?

**14. Check the category that best describes the cause of the unsafe condition addressed by this AD:**

<input checked="" type="checkbox"/> Design Problem	<input type="checkbox"/> Unapproved Parts	<input type="checkbox"/> Operational
<input type="checkbox"/> Maintenance	<input type="checkbox"/> Quality Control Problem**	<input type="checkbox"/> Other (specify): _____
<input type="checkbox"/>	<input type="checkbox"/> **Reporting Reqt Needed?	_____