

平成 27 年 7 月 15 日
運輸安全委員会

米国連邦航空局に対する安全勧告に関するフォローアップについて

運輸安全委員会は、平成 21 年 3 月 23 日に成田国際空港滑走路で発生したフェデラル エクスプレス コーポレーション所属 MD - 11F 型機航空事故の調査において、平成 25 年 4 月 26 日に航空事故調査報告書の公表とともに米国連邦航空局（FAA）に対して安全勧告を行ったところですが、今般、安全勧告に対する措置状況について通知がありました。概要は以下のとおりです。

1. 安全勧告

米国連邦航空局が講ずるべき措置

- (1) MD-11 系列型機の設計審査当時の基準解釈により、同系列型機は FAR 25.721(a) の要件に適合していると評価されていたものの、垂直方向の卓越する過大な荷重による破壊モードでは構造破壊を生じ、火災に至る燃料漏れが発生する可能性のある設計になっていたものと推定される。今後このような設計が認められるべきではないので、解釈指針ではなく基準そのものを改正し、垂直荷重が卓越する場合の想定を義務化すること。

2. 米国連邦航空局（FAA）からの通知（要約）

米国連邦航空局が講ずるべき措置

- (1) ①主脚は、卓越荷重による破壊に備え設計されなければならない、卓越荷重は、横方向荷重に上方荷重及び後方荷重を組み合わせた荷重を想定しなければならないとして、FAR25.721(a) を改正し、2014 年 12 月 1 日から有効とした。
②加えて、2014 年 10 月 7 日にアドバイザーサーキュラー (AC) 25-30 を発行し、「主脚の破壊は、垂直方向及び引っ張り方向の適切な組み合わせによる卓越荷重を想定しなければならない。」と記載した。



U.S. Department
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別 添

JUN 25 2015

Norihiro Goto
Chairman
Japan Transport Safety Board
2-1-2, Kasumigaseki
Chiyoda-ku, Tokyo, 100-8918
Japan

Dear Chairman Goto:

This is our final response to Safety Recommendation 13.060 issued by the Japan Transport Safety Board (JTSB) to the Federal Aviation Administration (FAA) on April 26, 2013. The JTSB issued this safety recommendation following its investigation of a McDonnell Douglas (now Boeing) MD-11F accident which occurred at Narita International Airport on March 23, 2009. A FedEx Corporation MD-11F, operating as FedEx flight 80, bounced repeatedly while landing on Runway 34L. Impact forces incurred during the landing sequence broke the left wing which separated from the fuselage attach point. The aircraft caught fire, rolled to the left, and swerved off the left side of the runway. The aircraft came to rest inverted in a grassy area. The aircraft was destroyed, and both pilots received fatal injuries.

13.060. Although the MD-11 airplane was certified to the requirement 14 CFR § 25.721(a) under the interpretation at the time of certification, its design would not meet the present interpretation of the requirement since the design allows the possibilities of causing severe damage to the airplane structure in the failure mode under an overload condition where the vertical load is the primary component, resulting in the fire due to fuel spillage. As this kind of design should not be certified from now on, the airworthiness regulation rather than the guidance material should be revised to mandate the assumption of the overload condition in which the vertical load is the primary component. [JTSB 6.1(a)]

FAA Comment. As noted in our letter dated August 28, 2013, the FAA published a Notice of Proposed Rulemaking, which proposed revising Title 14, Code of Federal Regulations Section 25.721(a), to require consideration of side loads in addition to upward and aft loads. On October 2, 2014, we issued the final rule for § 25.721, Harmonization of Airworthiness Standards—Miscellaneous Structures Requirements (78 FR 13835), which became effective on December 1, 2014. The final rule can be found at the following Web site:

<https://federalregister.gov/a/2014-23373>.

The revised rule states, "The landing gear system must be designed so that when it fails due to overloads during takeoff and landing, the failure mode is not likely to cause spillage of enough fuel to constitute a fire hazard. The overloads must be assumed to act in the upward and aft directions in combination with side loads acting inboard and outboard."

The accompanying FAA Advisory Circular (AC) 25-30, Fuel Tank Strength in Emergency Landing Conditions, issued on October 7, 2014, states, "Failure of the landing gear due to overload should be considered, assuming the overloads act in any reasonable combination of vertical and drag loads..." AC 25-30 can be found at the follow Web site:

[http://rgl.faa.gov/REGULATORY_AND_GUIDANCE_LIBRARY/RGADVISORYCIRCULAR.NSF/0/81bd3117524854b286257d6b00703c07/\\$FILE/AC_25-30.pdf](http://rgl.faa.gov/REGULATORY_AND_GUIDANCE_LIBRARY/RGADVISORYCIRCULAR.NSF/0/81bd3117524854b286257d6b00703c07/$FILE/AC_25-30.pdf).

The revised rule and guidance provided in the new AC will ensure that failure of the landing gear due to a primarily vertical overload will be considered in the design of future transport category airplanes.

I believe that the FAA has effectively addressed Safety Recommendation 13.060 and consider our actions complete.

The FAA would like to thank the JTSB for submitting FAA Safety Recommendation 13.060 and its continued interest in aviation safety. If you have any questions, or need additional information regarding this safety recommendation, please contact

(Name and Phone Number)

Sincerely,

(Original signed)

Director, Office of Accident Investigation
and Prevention