



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Office of the Administrator

800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Roger F. Wicker  
Chairman, Committee on Commerce,  
Science, and Transportation  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

As required by the FAA Reauthorization Act of 2018, P.L. 115-254 (the Act), Section 535, the Federal Aviation Administration (FAA) is pleased to provide the enclosed Study of Allergic Reactions.

The Act directs the FAA to submit a report on its study of the prevalence of allergic reactions on board flights, whether airlines universally report reactions to the FAA, and the frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock is on-board an aircraft.

We have sent identical letters to Chairman DeFazio, Senator Cantwell, Congressman Graves, Chairman Shelby, Senator Leahy, Chairwoman Lowey, Congresswoman Granger, Chairman Pallone, Congressman Walden, Chairman Alexander, and Senator Murray.

Sincerely,

A handwritten signature in black ink that reads "Steve Dickson". The signature is fluid and cursive, with the first name "Steve" and last name "Dickson" clearly legible.

Steve Dickson  
Administrator

Enclosure



U.S. Department  
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**Federal Aviation  
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800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Peter A. DeFazio  
Chairman, Committee on Transportation  
and Infrastructure  
House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

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800 Independence Ave., SW.  
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June 10, 2020

The Honorable Maria Cantwell  
Ranking Member, Committee on Commerce,  
Science, and Transportation  
United States Senate  
Washington, DC 20510

Dear Senator Cantwell:

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800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Sam Graves  
Ranking Member, Committee on Transportation  
and Infrastructure  
House of Representatives  
Washington, DC 20515

Dear Congressman Graves:

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800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Richard Shelby  
Chairman, Committee on Appropriations  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

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Office of the Administrator

800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Nita Lowey  
Chairwoman, Committee on Appropriations  
House of Representatives  
Washington, DC 20515

Dear Madam Chairwoman:

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The Act directs the FAA to submit a report on its study of the prevalence of allergic reactions on board flights, whether airlines universally report reactions to the FAA, and the frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock is on-board an aircraft.

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800 Independence Ave., SW.  
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June 10, 2020

The Honorable Patrick Leahy  
Vice Chairman, Committee on Appropriations  
United States Senate  
Washington, DC 20510

Dear Senator Leahy:

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800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Kay Granger  
Ranking Member, Committee on Appropriations  
House of Representatives  
Washington, DC 20515

Dear Congresswoman Granger:

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800 Independence Ave., SW.  
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June 10, 2020

The Honorable Frank Pallone  
Chairman, Committee  
on Energy and Commerce  
House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

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June 10, 2020

The Honorable Greg Walden  
Ranking Member, Committee  
on Energy and Commerce  
House of Representatives  
Washington, DC 20515

Dear Congressman Walden:

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800 Independence Ave., SW.  
Washington, DC 20591

June 10, 2020

The Honorable Lamar Alexander  
Chairman, Committee  
on Health, Education, Labor, and Pensions  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

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800 Independence Ave., SW.  
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June 10, 2020

The Honorable Patty Murray  
Ranking Member, Committee  
on Health, Education, Labor, and Pensions  
United States Senate  
Washington, DC 20510

Dear Senator Murray:

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**FAA**  
**Aviation Safety**

# **REPORT TO CONGRESS:**

## **Study on Allergic Reactions**

**FAA Reauthorization Act of 2018 (Public Law 115-254) – Section  
535**

## **Executive Summary**

This Federal Aviation Administration (FAA) report is submitted in accordance with the FAA Reauthorization Act of 2018, Section 535, "Study on Allergic Reactions." That section required the FAA to study the prevalence of allergic reactions on board flights, whether airlines universally report reactions to the FAA, and the frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock is in an aircraft.

The FAA reviewed available medical studies and found that an allergic reaction that becomes a medical event onboard an aircraft is a rare occurrence. There are currently no regulations or statutes that require airlines to report to the FAA about allergic reaction events on aircraft, nor does the FAA systematically track any reports it might receive about such events. The FAA also found that the frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock in an aircraft varies by carrier. Medications are only found in the Emergency Medical Kit (EMK). Generally, EMKs on commercial air carriers are serviced once the seal is broken/used, and also inventoried and re-stocked/replaced on a rolling basis.

Air carriers may maintain their own internal processes for tracking inventory and re-stocking/replacing medications. 14 Code of Federal Regulations (CFR) part 121, Appendix A lists certain items that must be included in first aid kits and EMK to treat injuries, medical events, or minor accidents that might occur during flight time. The current contents of the EMK are being reviewed for potential modification.

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## Introduction

The Federal Aviation Administration (FAA) submits the following report in response to the congressional requirements of the FAA Reauthorization Act of 2018, Section 535, Study on Allergic Reactions. Multiple data sources and references were used, including but not limited to FAA regulations and advisory circulars, and various medical studies and technical reports.

## Legislative Mandate

Section 535 requires the following:

*Not later than 120 days after the date of enactment of this Act, the Administrator shall –*  
*(1) study the prevalence of allergic reactions on board flights, whether airlines universally report reactions to the Federal Aviation Administration, and the frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock is in an aircraft; and*

*(2) submit a report to the Committees on Transportation and Infrastructure, Energy and Commerce, and Appropriations of the House of Representatives and the Committees on Commerce, Science, and Transportation, Health, Education, Labor, and Pensions, and Appropriations of the Senate.*

## Background

There are currently no regulations or statutes that require airlines to report allergic reaction events in aircraft to the FAA. Additionally, the FAA does not systematically track any reports it might receive about such events.

Allergic reactions occur when a person's immune system inappropriately reacts to a substance that is harmless to most other people. Food-related allergies are the most common inciting cause of symptoms.<sup>1</sup> People who are severely allergic to these substances (or parents of children who are severely allergic to these substances) are typically very attentive to monitoring their environment to avoid exposure, and take appropriate action if symptoms from exposure occur.

## Findings

There have been numerous research studies on the subject over the last 29 years. The References/Footnotes section on page 6 lists 16 scientific studies on this subject done between the years 1989 to 2018. The Martin-Gill study is the most recent, and is a review of 317 published articles. That review estimates the occurrence of inflight medical emergencies (IME) at 1 per 640 flights and 24-130 occurrences per million passengers. Of 49,100 IMEs included in the review, 1.6% were allergy related.<sup>2</sup> Further, it is noted that these were rarely serious. If one looks

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<sup>1</sup> Martin-Gill C, et al. *In-flight medical emergencies: A review*. JAMA. 2018; 320(24): 2580-90.

<sup>2</sup> Martin-Gill C, et al. *In-flight medical emergencies: A review*. JAMA. 2018; 320(24): 2580-90.



only at pediatric IMEs, which account for only a small proportion of total IMEs, about 9% are allergy related.<sup>3</sup>

14 Code of Federal Regulations (CFR) part 121, subpart X – Emergency Medical Equipment and Training, prescribes the emergency medical equipment and training requirements applicable to all certificate holders operating passenger-carrying airplanes under part 121. Appendix A to part 121 lists certain items that must be included in first aid kits and emergency medical kits (EMK) to treat injuries, medical events, or minor accidents that might occur during flight time. While the prevalence of in-flight allergic reactions is rare, the EMK contents listed in Appendix A include medications to treat minor to severe allergic reactions, such as epinephrine 1:1000, 1 cc, injectable, (single dose ampule or equivalent) and epinephrine 1:10,000, 2 cc, injectable, (single dose ampule or equivalent). The current contents of the EMK are being reviewed for potential modification.

The frequency of first aid inventory checks to ensure medicine to prevent anaphylactic shock is in an aircraft varies by carrier. Medications are only present in the EMK, not in the first aid kit. Per 14 CFR § 121.803(b)(1), approved first aid kits and emergency medical kits must be inspected regularly in accordance with inspection periods established in the carrier's operations specifications to ensure their condition for continued serviceability and immediate readiness for their intended emergency purposes. Generally, EMKs on commercial air carriers are serviced once the seal is broken or the medications are used. If certain contents of an EMK are used during a flight, an inventory of the remaining contents and restocking/replacement of the kit would be needed to ensure that the minimum content requirements are met prior to any subsequent flight. The airlines keep track of such inventory. Air carriers may maintain their own internal processes for tracking inventory and re-stocking/replacing the EMK prior to the expiration of the medications.

As noted, there are currently no regulations or statutes that require airlines to report allergic reaction events on aircraft to the FAA. The FAA has, however, issued agency guidance on handling procedures for passengers who may be sensitive to allergens, EMK contents, and crewmember training regarding the handling of medical events on aircraft.

The regulations and Advisory Circulars that address EMKs are the following:

- 14 CFR Appendix A to Part 121 – First Aid Kits and Emergency Medical Kits

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<sup>3</sup> Alves P.M., et al. *In-flight injuries involving children on commercial airline flights*. *Pediatric Emer. Car.* 2016; 00(00):1-5. and Moore B.R., et al. *Pediatric emergencies on a US-based commercial airline*. *Pediatric Emer. Car.* 2005 Nov; 21(11):725-9.

- 14 CFR Part 121 Subpart X - Emergency Medical Equipment and Training
- Advisory Circular 121-36 - Management of Passengers who may be Sensitive to Allergens.  
[https://www.faa.gov/regulations\\_policies/advisory\\_circulars/index.cfm/go/document.information/documentID/22521](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22521)
- Advisory Circular 121-33B - Emergency Medical Equipment.  
[https://www.faa.gov/regulations\\_policies/advisory\\_circulars/index.cfm/go/document.information/documentID/22516](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22516)
- Advisory Circular 121-34B - Emergency Medical Equipment Training.  
[https://www.faa.gov/regulations\\_policies/advisory\\_circulars/index.cfm/go/document.information/documentID/22519](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22519)

## References

1. Martin-Gill C, et al. *In-flight medical emergencies: A review*. JAMA. 2018; 320 (24):2580-2590.
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