



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Office of the Deputy Administrator

800 Independence Ave., S.W.  
Washington, D.C. 20591

March 2, 2020

The Honorable Lucille Roybal-Allard  
House of Representatives  
Washington, DC 20515

Dear Congresswoman Roybal-Allard:

Thank you for your January 22 letter to Administrator Dickson, cosigned by your congressional colleagues, concerning the January 14, 2020, in-flight emergency during which Delta Air Lines Flight 89 jettisoned fuel while returning to Los Angeles International Airport (LAX). We fully appreciate the high level of interest and concern in the affected communities about this event.

The Federal Aviation Administration (FAA) investigated the emergency that resulted in the flight crew's decision to jettison fuel and return to LAX. This response provides you and your constituents with an update on the investigation into the incident, as well as actions taken by the agency and Delta to reduce the chances of a similar incident in the future.

## **Background**

Flight 89 departed from LAX with a destination of Shanghai, China, with 167 people aboard – 149 passengers and 18 crewmembers. At an altitude of approximately 8,000 feet, the right engine began to vibrate, and the crew heard surging. The engine then experienced a compressor stall and stopped producing thrust. At this time, the aircraft was flying on one engine and carrying too much fuel for a safe landing due to weight.

The crew notified FAA air traffic controllers of the engine problem, declared an emergency, and indicated their intent to return to LAX immediately. When controllers asked if the crew wanted to hold to dump fuel, the crew replied, "negative," and said they wanted to land on LAX's longest runway – Runway 25-Right. In emergency situations such as the one encountered by Flight 89, an air traffic controller's responsibility is to accommodate the flight crew's request as expeditiously as possible. Accordingly, the air traffic controllers sequenced the aircraft into the standard approach route for LAX's southern runway complex.

The FAA's investigation showed that the crew began jettisoning fuel at approximately 8,000 feet in altitude and continued until the aircraft descended to approximately 2,500 feet. Around 85,000 pounds of fuel were jettisoned during the operation.

The flight lasted 28 minutes. Enclosed is a map showing the flight path with corresponding altitudes. I understand your request for a map that illustrates exactly where the fuel jettisoning began and ended, and at what altitude the aircraft was flying over every potentially impacted area. However, the FAA cannot specifically identify that information, because it is not clear at which points the flight crew began and ended fuel jettisoning.

An examination of the aircraft showed significant damage to the right engine. Delta replaced the engine, and the FAA continues to investigate the cause of the malfunction.

### **Analysis of the Flight Crew's Actions**

When responding to an in-flight emergency, the Federal Aviation Regulations authorize pilots to take the actions they deem necessary to meet that emergency. In particular, section 121.557 of Title 14, Code of Federal Regulations, states in part: "In an emergency situation that requires immediate decision and action, the pilot in command may take any action that he considers necessary under the circumstances. In such a case, he may deviate from prescribed operations procedures and methods, weather minimums, and this chapter, to the extent required in the interests of safety." The FAA considers a decision to jettison fuel under emergency circumstances, such as those encountered by the Delta flight crew, to be within the pilot's discretion to ensure the safety of the flight. As a general matter, an overweight landing could cause a loss of control upon touchdown, or the aircraft could be unable to stop on the available runway.

Ideally, a flight crew would notify air traffic controllers of the intention to jettison fuel, and the controllers would coordinate with the crew to vector the aircraft in a manner to minimize impact. The FAA does not require pilots to obtain permission to jettison fuel, nor do FAA regulations specify areas where fuel may be jettisoned. The FAA does not specify a minimum altitude due to the wide range of emergencies that could require a crew to jettison fuel.

### **Follow-up Corrective Actions**

Based on the investigation, the FAA has worked with Delta to develop specific corrective actions to reduce the chances of a similar incident occurring in the future. Delta will review its flight crew training to ensure the robustness of its fuel jettisoning and overweight landing procedures. The airline is also reviewing its emergency checklists to consider including a step for crews to notify air traffic control of the initiation and termination of fuel jettisoning. The FAA will explore additional ways to reduce the risk of unnecessary exposure to persons and property on the ground without jeopardizing the safety of passengers and flight crew.

Your letter suggests that we should notify communities in real time about emergencies such as this one. In emergency aviation situations, the priority is getting an aircraft safely to the ground as quickly as possible. Due to the wide range of aircraft emergencies and the speed at which they unfold, such a notification system is not feasible.

With respect to health and environmental impacts of a single exposure event, such as this one, the FAA does not have pertinent research. Similarly, the FAA does not have the specific composition of the jet fuel that was on the flight; however, we do know that Jet A fuel is comprised almost entirely of hydrocarbon compounds. These hydrocarbon compounds collectively comprise the bulk hydrocarbon composition. Jet A fuel also contains very small amounts of aviation fuel additives and other trace materials. The airline, airport, or local first responders may have the safety data sheet applicable to the type of fuel that was loaded into the aircraft prior to takeoff.

Thank you again for your letter on this important topic. I want to reiterate that the FAA understands the interest and concerns in the affected communities. A similar letter has been sent to each of the cosigners of your letter.

If I can be of further assistance, please contact me or the Office of Government and Industry Affairs, at (202) 267-3277.

Sincerely,

A handwritten signature in black ink, appearing to read "DK Elwell". The signature is written in a cursive, slightly slanted style.

Daniel K. Elwell  
Deputy Administrator

Enclosure



U.S. Department  
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**Federal Aviation  
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Office of the Deputy Administrator

800 Independence Ave., S.W.  
Washington, D.C. 20591

March 2, 2020

The Honorable Maxine Waters  
House of Representatives  
Washington, DC 20515

Dear Congresswoman Waters:

Thank you for your January 22 letter to Administrator Dickson, cosigned by your congressional colleagues, concerning the January 14, 2020, in-flight emergency during which Delta Air Lines Flight 89 jettisoned fuel while returning to Los Angeles International Airport (LAX). We fully appreciate the high level of interest and concern in the affected communities about this event.

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### **Background**

Flight 89 departed from LAX with a destination of Shanghai, China, with 167 people aboard – 149 passengers and 18 crewmembers. At an altitude of approximately 8,000 feet, the right engine began to vibrate, and the crew heard surging. The engine then experienced a compressor stall and stopped producing thrust. At this time, the aircraft was flying on one engine and carrying too much fuel for a safe landing due to weight.

The crew notified FAA air traffic controllers of the engine problem, declared an emergency, and indicated their intent to return to LAX immediately. When controllers asked if the crew wanted to hold to dump fuel, the crew replied, "negative," and said they wanted to land on LAX's longest runway – Runway 25-Right. In emergency situations such as the one encountered by Flight 89, an air traffic controller's responsibility is to accommodate the flight crew's request as expeditiously as possible. Accordingly, the air traffic controllers sequenced the aircraft into the standard approach route for LAX's southern runway complex.

The FAA's investigation showed that the crew began jettisoning fuel at approximately 8,000 feet in altitude and continued until the aircraft descended to approximately 2,500 feet. Around 85,000 pounds of fuel were jettisoned during the operation.

The flight lasted 28 minutes. Enclosed is a map showing the flight path with corresponding altitudes. I understand your request for a map that illustrates exactly where the fuel jettisoning began and ended, and at what altitude the aircraft was flying over every potentially impacted area. However, the FAA cannot specifically identify that information because it is not clear at which points the flight crew began and ended fuel jettisoning.

An examination of the aircraft showed significant damage to the right engine. Delta replaced the engine, and the FAA continues to investigate the cause of the malfunction.

### **Analysis of the Flight Crew's Actions**

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Daniel K. Elwell  
Deputy Administrator

Enclosure



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800 Independence Ave., S.W.  
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March 2, 2020

The Honorable Nanette Diaz Barragan  
House of Representatives  
Washington, DC 20515

Dear Congresswoman Barragan:

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Daniel K. Elwell  
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800 Independence Ave., S.W.  
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March 2, 2020

The Honorable Linda T. Sanchez  
House of Representatives  
Washington, DC 20515

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