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Fire Takes Down Atlanta Airport December 2017

Hartsfield-Jackson Atlanta International Airport is the busiest airport in the world. It accommodates over a quarter million passengers daily.



On Sunday, December 17, 2017, Atlanta airport lost all power, including its backup power source, due to a fire. The airport was out of service for eleven hours. Flights all over the world had to be canceled as they could not be cleared into Atlanta. This left planes improperly positioned for their scheduled flights and created days of confusion for passengers.

Hartsfield-Jackson Atlanta International Airport

Hartsfield-Jackson Atlanta International Airport has been the world's busiest airport since 1998. It handles an average of 275,000 passengers per day. Its flights serve 150 destinations in the U.S. and over 75 destinations in 50 countries worldwide.

Atlanta airport is Georgia's largest employer, employing over 63,000 people.

The Fire

The fire began about 1 PM in an underground tunnel that carries seven power lines from two sources to the airport. The fire destroyed the power lines, plunging Atlanta airport into darkness.

Firefighters arrived four minutes after the fire was reported, but it took them about two hours to extinguish it. Moreover, Georgia Power crews could not access the burnt cables in the tunnel until giant fans had cleared the noxious fumes. Repair of the fire damage started around 3:30 p.m.

An estimated 30,000 people were affected by the power outage. Thousands of passengers were stranded in dark terminals and in planes sitting on the tarmac. Stores stopped serving food. Passengers were evacuated from terminals to alleviate crowding.

Because of the power outage, no one could get reliable phone or Internet service to access texts, email, flight apps, or social media. Airline employees handed out blankets, beverages, and pizza to the stranded passengers.

The line for Delta's Sky Priority passengers zig-zagged back and forth seven times across the terminal. Many passengers were told they would have to wait hours or days before they could get a flight.

Power was finally restored around midnight, eleven hours later. The city of Atlanta opened the Georgia International Convention Center for stranded passengers who needed a place to stay for the night. Chick-fil-A supplied food to passengers, although the chain is normally closed on Sundays.

The Cause of the Fire

The full cause of the fire is as yet unknown. However, it was determined that a piece of equipment known as a 'switchgear' apparently caught fire. The switchgear regulates the flow of power to the airport.

The switchgear was located in the tunnel housing Georgia Power's cables. When the switchgear caught fire, it impacted cables coming in from both directions. This took out the main power source and its backup.

Travel Disrupted Across the U.S.

The Federal Aviation Administration (FAA) declared a ground stop at Atlanta. This prevented Atlanta-bound planes from taking off from their originating airports or caused them to be diverted if they were already airborne. The ground stop caused Southwest Airlines, United, American, and Delta to suspend operations to and from Atlanta for the rest of Sunday.

The result was disrupted air travel across the U.S. More than 1,100 flights were canceled on Sunday and Monday, leaving an estimated 30,000 people at airports with cancelled flights.

The flight plans of millions of people were interrupted over the next few days as airplanes were repositioned so that they could resume their normal schedules.

Why Was There No Backup Power?

Seven power cables supply the airport with two sources of electrical power, but they are all routed through a common tunnel. The failed switchgear sits at the bottom of the tunnel, and its fire damaged all of the cables. With the switchgear on fire, the power fail-safe system was knocked out. There was no way to switch to backup power even if the backup power cables had been operating.

Other airports route power sources separately. Dallas-Fort Worth International Airport has redundant power from separate transmission and distribution sources. Denver International Airport (DIA) has dual redundant power substations, one north of the airport and one south of it. DIA also has emergency backup generators to supply power to the control tower, the emergency operations center, and the runway lights.

Summary

Since U.S. airlines rely on certain cities as hubs, the ripple effect of problems at some airports can be particularly severe. Atlanta is Delta's hub. When Atlanta airport lost all power, more than a thousand flights were grounded and thousands of people were stranded at the airport. Since Atlanta is the busiest airport in the world, the Atlanta airport outage wreaked havoc with all scheduled airlines.

What could have been done differently? Once the fire started, the die was cast. However, in hindsight, routing the primary and backup power cables through the same tunnel was a terrible mistake. As we have pointed out in many of our articles, a backup system should always be geographically remote from the primary system to prevent a common disaster from taking down both systems. This is exactly what happened to Atlanta airport.

Furthermore, the mechanism for switching from a primary system to a backup system should always be redundant. Atlanta airport depended upon one switchgear to switch between systems. When the switchgear failed because it caught on fire, the backup power source, even if it had been operational, was useless.

Acknowledgements

Information for this article was taken from the following sources:

Atlanta airport's main and backup power lines flow through the same tunnel damaged by fire, *USA Today*; December 18, 2017.

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The power is back on at the busiest airport in the world, *CNN*; December 18, 2017.

Atlanta's Hartsfield-Jackson airport restores power after crippling outage, *CNN*; December 18, 2017.

DIA says they wouldn't experience power outage like Atlanta, *Fox News*; December 20, 2017.