

# Improving visibility and reaction time for critical aircraft parts

Every day, the FedEx Express Aircraft on Ground (AOG) team in Memphis, Tenn., has the daunting task of ensuring the timely delivery of critical maintenance and repair parts for the world's largest express transportation company. Whether it's a bolt that costs just a few dollars or a flight control computer for a Boeing 777 worth more than \$1 million, any significant delay in the receipt of these critical parts can translate into hundreds of thousands of dollars in lost revenue for every hour the aircraft is out of service.

Additionally, any disruption to repairing an out-of-service aircraft could mean missed delivery commitments and dissatisfied customers — an unacceptable result for a company like FedEx.

## Enhancing control

Prior to 2012, the FedEx Express AOG team, like most other airlines, relied mainly on barcodes and handwritten log sheets to track these valuable parts shipments. The resulting static data was cumbersome to analyze and led to large gaps in location information — which often translated into an increase in recovery time for lost or misrouted parts. In short, once a part left a warehouse, the AOG team had limited visibility to the shipment.

The group began using SenseAware®, a FedEx innovation, to actively monitor time-sensitive parts for the company's aircraft as well as all counter-to-counter and preventive fleet maintenance shipments from Memphis and several other high-volume locations in the U.S. and Europe.

The SenseAware multi-sensor device collects and transmits data on each shipment's location in real-time via wireless communication to a powerful online application for enhanced visibility and insight — from origin to destination.

"Prior to SenseAware, if an AOG shipment destined for a field location did not make a flight, more often than not, we didn't know about it until after the aircraft landed at the destination," said Joe Lee, senior manager, Supply Chain Logistics for FedEx Express. "With SenseAware, we are able to proactively monitor the part and know it's onboard the aircraft prior to departure."



**"If we can avoid just one flight cancellation, it's worth the cost of the SenseAware solution."**

**Joe Lee**  
*Senior Manager, Supply Chain Logistics*  
*FedEx Express*



Current Location



Temperature



Light Exposure



Humidity



Pressure



Shock

Lee added that if a flight carrying an AOG shipment reaches its destination but the package is mis-sorted, his team can quickly locate it using the SenseAware GPS data and direct ground personnel to the part's actual location.

The bottom line: SenseAware helps to greatly reduce out-of-service time by allowing FedEx AOG to recover shipments faster than they were able to in the past. For instance, the AOG team used SenseAware location data to discover that a critical part destined for a grounded aircraft in Indianapolis had inadvertently been directed to another FedEx facility. Instead of waiting until the package passed through the sort process, a team member was able to "rescue" the shipment and carry it directly to the grounded aircraft — resulting in significantly less downtime.

## Generating additional efficiencies

Just as importantly, SenseAware allows FedEx AOG to more closely track the return of high-value parts to its repair facilities. This added visibility can translate into substantial savings tied to carrying less spare parts inventory.

SenseAware also allows stakeholders at FedEx warehouses throughout the country to access the easy-to-use, web-based interface to monitor the location and arrival of shipments. This collaboration feature has reduced the number of calls to the AOG team in Memphis and enabled all participants to respond to a delay hours earlier — mitigating the operational impact of misrouted parts.

## Maximizing security, minimizing downtime

With SenseAware, the FedEx AOG team now has a powerful, cost-effective shipment monitoring solution — without the need for additional investment in infrastructure. The operation has already seen a noticeable improvement in reaction time to address misrouted or lost parts as a result of the enhanced communication and additional shipment information that SenseAware provides.

FedEx AOG continues to collaborate with the SenseAware team to enhance the solution, and they believe the technology will play an integral role in helping them reach their goal to reduce aircraft out-of-service time by an hour or more.

"We had the need to improve our tracking of critical shipments, and SenseAware has met that need," said Bob Bush, manager of the FedEx AOG operation.

"We look at technology that can help us be more successful and keep our aircraft flying," concluded Lee. "That's where SenseAware comes in. If we can avoid just one flight cancellation, it's worth the cost of the solution."