

Airplane Auxiliary Power Unit Case Study: SpotBot™ Cellular

Industry: Aviation

Application: Auxiliary Power Unit

Challenge: An airline's airplanes were being damaged in-flight, but no one knew why. The auxiliary power unit (APU), which is an additional power source for the plane's ignition, was destroyed sometime between every take-off and touch-down, but the cause and timing of the impact was unknown. The APU's design spec stated it could withstand a 9G impact and the airline was concerned the design of the APU enclosure was defective.

Solution: The airline solved the mystery using a [SpotBot Cellular](#) impact monitor. They set the unacceptable threshold level to 9G's of impact, and mounted it to the APU's enclosure on their plane before it took off. The instant the plane landed, their questions were answered when a red dot appeared on the map in their SpotSee Cloud. The airline company was easily able to pinpoint the exact time, location and magnitude of the damage. It was determined that a 13G impact commonly occurred in the z-axis (under the aircraft) upon landing, which was 4G's beyond the specified impact threshold of the APU's enclosure. This discovery enabled the airline to write a more robust product specification and create an improved mounting solution for their APU's.



SpotBot™ Cellular Overview

Best in Class Impact Data

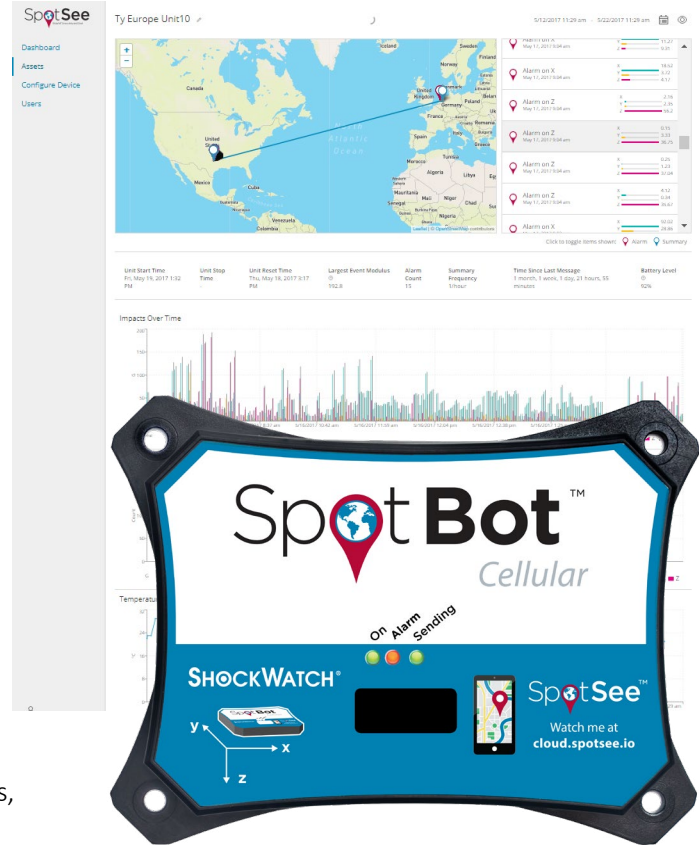
SpotBot Cellular generates accurate data on impacts up to 65G providing more than four times (4X) the range of the best competitive alternative (which captures impacts up to 16G). This range of impact monitoring is best suited for products between 100-60,000 lbs.

Longest Battery Life

With off-the-shelf lithium batteries, [SpotBot Cellular](#) delivers up to 75 days of monitoring (set to hourly summary reporting). This represents a battery life that is greater than 50% (1.5X) more than the next best competitor.

Flexible Settings & Download Capabilities

The user easily defines impact settings specific to the product being monitored and SpotBot Cellular will deliver a location and time stamp of alerts from impacts over the threshold. After the trip, the user can easily download a PDF file with the top ten largest impacts, a CSV file with the top 50 largest impacts, and a slot-time report from the SpotBot Cellular.



SpotSee Cloud

The [SpotSee Cloud](#) is where trip data is aggregated in real-time. Graphs are easy to read and include data such as specifics of impact with locations, impacts over time, impact histogram, and temperature.

SpotSee Cloud Features

- Access to your data from anywhere with a secure web portal
- Real-time reporting and tracking of incidents
- Alarms with location, time, impact g-level, direction of impact, and temperature
- Impacts-over-time visualization of each asset
- Histogram of the total impacts to an asset
- Temperature over time graph

