# Boeing To Propose 787 Battery Fix

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WASHINGTON (AP) — Boeing has developed a plan that it intends to propose to federal regulators to temporarily fix problems with the 787 Dreamliner's batteries that have kept the planes on the ground for more than a month, a congressional official told The Associated Press on Wednesday.

Boeing Commercial Airplanes CEO Ray Conner is expected to present the plan to Michael Huerta, head of the Federal Aviation Administration, in a meeting on Friday, the official said. The official spoke on condition of anonymity because he wasn't authorized to speak publicly.

Boeing Co. spokesman Marc Birtel said the company doesn't talk in advance about meetings with federal officials.

"Everyone is working to get to the answer as quickly as possible, and good progress is being made," Birtel said.

The FAA and overseas aviation authorities grounded all 50 of the planes in service worldwide after a lithium ion battery caught fire on a plane parked in Boston and a smoking battery led to an emergency landing by another plane in Japan. The 787 is Boeing's newest and most technologically advanced plane. It was supposed to exemplify the future of commercial aviation, but the groundings have been a major public black eye and financial drain for Boeing, which vies with Airbus for the position as the world's largest commercial aircraft maker.

The plane is also the first airliner to make extensive use of lithium ion batteries to help power its electrical systems. Lithium ion batteries weigh less, charge faster and hold more energy than other batteries of comparable size. But they are also more susceptible to short-circuiting that can cause fires if they are damaged, have manufacturing flaws, are exposed to excessive heat or are overcharged.

The National Transportation Safety Board is investigating the battery fire in a Japan Airlines 787 that was discovered shortly after the plane landed at Boston's Logan International Airport on Jan. 7. Japanese authorities are investigating a battery failure in an All Nippon Airways 787 that made an emergency landing nine days after the fire. Investigators have said the batteries experienced short-circuiting and thermal runaway, a chemical reaction that causes progressively hotter temperatures, but they haven't found the root cause of the incidents.

Japan's Transport Ministry said Wednesday its investigation has uncovered a new problem: The aircraft's auxiliary power unit, which contains a lithium ion battery, was improperly connected to the main battery that overheated.

NTSB investigators found the Boston fire started with multiple short-circuits in one

of the battery's eight cells. That created an uncontrolled chemical reaction known as "thermal runaway," which is characterized by progressively hotter temperatures. That spread the short-circuiting to the rest of the cells and caused the fire.

The board's findings are at odds with Boeing's initial battery testing before FAA's safety certification of the plane, which concluded that any short-circuiting could be contained within a single cell, preventing thermal runaway and fire from spreading.

Among the measures being discussed to make the batteries safe enough to return the 787 to the skies are adding more ceramic spacers between battery cells to contain any short-circuiting and fire within that cell. That would be in line with Boeing's initial test results.

More ceramic spacers would make the battery larger, which would require a bigger box to contain the battery cells. A more robust box lined with material to prevent any fire from spreading is also under discussion.

"What Boeing is trying to do is fix the battery so that (its initial testing) assumption is now valid," said Jon Hansman, a Massachusetts Institute of Technology aeronautics professor and a member of the FAA's Research and Development Advisory Committee.

"So if you can fix this part, the rest should be ok," he said.

Boeing hasn't said how much the 787 grounding will cost it. Imperial Capital analyst Ken Herbert estimated last week that it could cost Boeing $25 million a month in direct costs, with the total price tag climbing past $1 billion, including spending to fix the problem and expenses for delayed deliveries.

Boeing is still building five 787s each month, and has said it still wants to speed up to 10 a month by the end of the year. The company had orders for 800 of the planes at the time they were grounded.

It would take a delay of more than a couple of months for Boeing to back away from its speed-up plan, UBS analyst David Strauss wrote in a note on Wednesday.

Eight airlines in seven countries have 787s in their fleets. United Airlines, the only U.S. carrier with 787s, has cut its five 787s out of its schedule through the end of March. The grounding has been the most disruptive for Japan's All Nippon Airways, which has 17 of the planes.

LOT Polish Airlines is losing $50,000 a day due to the grounding of its two Boeing 787 Dreamliner planes, according to information made public by the Polish government on Wednesday. One of LOT Polish Airlines' 787s was stranded in Chicago by the grounding. LOT is still waiting for six more 787s to be delivered, several of them early this year.

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