

Addendum to the Statement of Javier de Luis

Before the

United States Senate Committee on Commerce, Science and Transportation

Examining the Federal Aviation Administration's Oversight of Aircraft Certification

June 18, 2020

During the testimony today, the question came up whether the FAA should draw from other agencies and experts when certifying an airplane. In his response, Mr. Stumo referred to a recommendation that I have made on that subject in various forums, including an earlier letter to the Committee. I'd like to elaborate on his answer:

The current system evolved in an era when multiple domestic airplane manufacturers were producing new airplane designs at a much faster rate than what we have now. In the 1960's alone, we had the 727, 737, 747, L1011, DC-9, and DC-8 from Boeing, Lockheed, and McDonnell Douglas. The FAA was continuously reviewing and certifying new airplanes.

That is not what we have now. Now, we have a single manufacturer producing a new airplane every decade or so. It is very difficult to have a robust, independent, regulatory system when so few new airplanes are being designed. The "standing-army" costs are prohibitive, and it is difficult to retain talented people if you don't keep them engaged in challenging work. At the same time, having a single manufacturer makes it very easy for talented engineers to be poached from the agency by Boeing.

Over the last decade, we have seen a hollowing out of the FAA both in numbers and expertise. But the answer is not simply to provide more resources to the FAA and tell them hire more people, though certainly that will help. Boeing will always be able to offer higher salaries and more technically challenging work.

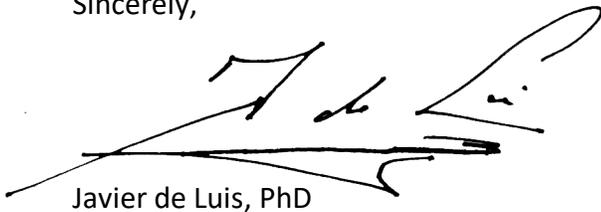
The FAA often claims that we have the safest air transportation system in the world. Which is true. However, the two major airplanes that have come off the line over the last 10 years have each been grounded. The 737 Max, after two fatal crashes, and the 787, after multiple battery fires. In the latter case, it was pure luck that the fires did not occur in mid-flight, which would have surely lead to hundreds of passenger deaths.

At the same time, because so few new airplanes are designed, the importance of each new model grows enormously. Production and operation of a new airplane is a major fraction of our GDP and an even bigger fraction of our exports. We have to do it right, because as we are seeing, the price for doing it wrong is too high, even if we just look at it on economic terms. Obviously, as I am painfully aware, the cost in human terms is incalculable.

To remedy this, I believe the FAA should be instructed to draw from the other technical resources that we have in this country, including academia, DoD, NASA, and the National Academies of Science and Engineering, to provide independent technical review of new passenger airplanes at key point in the design process. Ideally, this would happen at the Critical Design Review, prior to initial production, and at an Acceptance Review, prior to introduction to delivery. Such reviews with outside experts are common at other agencies, including NASA and DoD, and I have participated in many, both as presenter and reviewer. Such reviews typically go on for multiple days or longer, and provide the government with an outside perspective on the design. They lead to action-items which must be closed out before moving on to the next stage in the program. Most importantly, they would consist of experts with no financial or organizational ties to Boeing, to truly provide an independent evaluation of the program.

Convening a panel of 20 or 30 experts to meet for a week or two a couple of times each decade does not seem like too high a price to ensure the safety of the flying public, and it is definitely not too high a price to bring trust back to the air transportation system.

Sincerely,

A handwritten signature in black ink, appearing to read 'Javier de Luis'. The signature is stylized with a large initial 'J' and a long horizontal stroke that extends to the left and then loops back under the name.

Javier de Luis, PhD