

EXHIBIT 7

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

FLYERS RIGHTS EDUCATION)	
FUND, INC, <i>et al.</i> ,)	
)	
Plaintiffs,)	
)	
v.)	Civil Action No. 19-3749 (CKK)
)	
FEDERAL AVIATION ADMINISTRATION,)	
)	
Defendant.)	

Supplemental Declaration of Javier de Luis

I, Javier de Luis, declare as follows:

1. I am an aeronautical engineer and scientist with 30 years of experience.
2. I have BS, MS and PhD degrees from the Massachusetts Institute of Technology (MIT) in Aeronautics and Astronautics and an MS from the MIT Sloan School of Management.
3. I have been employed as a Lecturer, Instructor and Consultant, and Research Associate by the MIT Department of Aeronautics and Astronautics, as the Vice President for Research and Development and chief Scientist for Aurora Flight Sciences and Payload Systems Inc. I am a published author and frequent contributor to technical journals in my field, have received numerous awards and several patents and am a member of the American Institute of Aeronautics and Astronautics. My resume is attached hereto as Exhibit A.

4. I make this Supplemental Declaration in further support of the Motion of Plaintiff Flyers Rights Education Fund' Motion for Summary Judgment and in opposition to Federal Aviation Administration's Cross-Motion for Summary Judgment. I have personal knowledge of the matters stated below.
5. I have now reviewed the final new Airworthiness Directive for the 737 MAX issued by the Federal Aviation Administration (FAA) on November 18, 2020, *AD-2020-24-02, Airworthiness Directives: The Boeing Company Airplanes, Final Rule*, 85 Fed. Reg. 74560 (Nov. 20, 2020)(the "Final AD"); the Rescission of Emergency Order of Prohibitions (the FAA's ungrounding order, issued on the same date; and the final Summary of the FAA's Review of the Boeing 737 Max, issued by the FAA on the same date ("Final Summary of FAA Review").
6. I understand that Flyers Rights is seeking, under the Freedom of Information Act, several categories of documents that the FAA seeks to withhold as confidential proprietary information: categories of information include certification plans; testing methods, plans and conditions; means of compliance with regulatory requirements; flight test plans and criteria; flight test results; safety analyses; and FAA and government agency comments on safety analyses (the "Disputed Information Categories").
7. My review of the Final AD and the Final Summary of FAA Review confirms that without access to the Disputed Information Categories withheld by the FAA from public disclosure in this case, under Exemption 4 of the Freedom of Information Act, it is not possible for me, or any other

independent expert in aircraft design and safety, to determine whether the design modifications that the FAA has determined now make the 737 MAX safe to fly in fact do make it safe to fly.

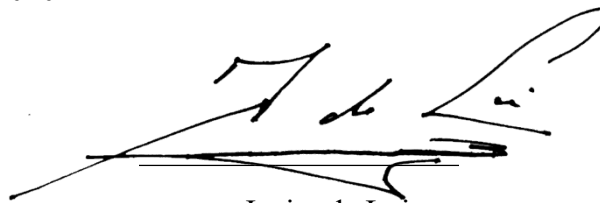
8. One of the FAA's central findings is that the 737 MAX can fly without its Maneuvering Characteristics Augmentation System ("MCAS"), defects in which led to the fatal crashes of the aircraft. In the Final AD, the FAA states that "the 737 MAX is capable of continued safe flight and landing with MCAS inoperative." 85 Fed. Reg. at 74563. The FAA goes on to claim that, "[t]he 737 MAX airplane is stable both with and without MCAS operating." Ibid. p. 74576.
9. Based on these findings, the FAA concludes that if MCAS were to be disabled because of a disagreement between the two Angle of Attack sensors, it would not be catastrophic. "During certification of the new MCAS, Boeing developed and the FAA approved and integrated SSA that assessed systems that interface with MCAS. The FAA also approved an analysis of single and multiple failures, which considered comprehensive impacts of single and multiple failures. The FAA concluded that for certification of the new MCAS, Boeing applied the appropriate hazard category designations." Ibid. p. 74578.
10. The key question in evaluating the basis for the FAA's decision is, is the MAX safe to fly without MCAS? If not, for example, if it is not stable in pitch, the aircraft would not be safe to fly, since shutting down MCAS would lead to additional unsafe conditions.

11. It is impossible for me or any other independent expert to address this question, however, without being able to review results of the actual test of the aircraft conducted with and without MCAS in operation—the information contained in the Disputed Information Categories. The whole reason for MCAS is based on compensating for the aerodynamic shortcomings of the aircraft’s design.. Without knowing the design and results of the tests and analyses performed, there is no way to tell whether the MCAS fixes approved by the FAA are adequate.
12. Similarly, the Final Summary of FAA Review indicates that a crucial defect in the original design that contributed to the fatal crashes, erroneous signal from a failed Angle of Attack sensor generating an erroneous MCA activation, was addressed by Boeing by updating its Flight Control Computer software to eliminate MCAS reliance on a single AOA sensor signal by using both AOA sensor input and changing flight control laws to safeguard against MCAS activation due to a failed or erroneous AOA sensor.” Final Summary p. 20.
13. The FAA Summary indicates that the updated flight control system was tested and asserts in conclusory fashion that it worked. Final Summary pp. 40-42. But in the 100 some pages of the Final Summary, there is no actual information about exactly how this design change was tested and what the specific results of the test were. And FAA has withheld under Exemption 4 all of the test plans and safety analyses that would contain any of this information.

14. Without that information, FAA's conclusory statements that safety and flight testing was successful in various respects are meaningless. I cannot tell whether there is any actual factual basis for the agency's conclusions.

I declare under the penalty of perjury that the foregoing is true and correct to the best of my information, knowledge and belief.

Executed on November 23, 2020

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.

Javier de Luis

Javier de Luis, PhD

6 Canal Park, #510, Cambridge, MA 02141

617-869-5257, 617-674-4968

Javier@deluis.com

QUALIFICATIONS

Over twenty five years industry experience managing complex, technology projects and organizations. Excellent technical and management background. Proven strategic thinking, analysis, communication, and problem-solving skills, as well as leadership ability and commitment.

EDUCATION

Doctor of Philosophy, Massachusetts Institute of Technology/Department of Aeronautics and Astronautics

Master of Science in Engineering and Management, Massachusetts Institute of Technology/School of Engineering and Sloan School of Management.

Master of Science, Massachusetts Institute of Technology/Department of Aeronautics and Astronautics

Bachelor of Science, Massachusetts Institute of Technology/Department of Aeronautics and Astronautics

EMPLOYMENT

2015 –pres. *Consultant; Lecturer, MIT Dept. of Aeronautics and Astronautics*
Provide consulting and business development services to local aerospace companies and educational institutions. Focused on government contracting, product development, and strategy. Visiting Engineer at MIT, helping to fund-raise and develop the Zero Robotics STEM competition, an MIT-run contest for high school and middle school students using robots on the International Space Station. Instructor for the systems engineering teams for various capstone senior design classes.

2007 -2015 *VP of R&D, Chief Scientist, Aurora Flight Sciences*
Responsible for internal and external research and development activities for 500 person aerospace company. Grew externally funded R&D activities from \$3M to \$30M over last seven years. Reports directly to company president. Responsible for outreach activities in cooperation with MIT, Draper, and other organizations and universities. Project Manager on numerous additional NASA and DoD R&D projects.

2001-2007 *CEO and Chief Scientist, Payload Systems Inc.*
Responsible for corporate strategy development and planning of 30-person spaceflight research and hardware development company. Provided technical direction and expertise for all company projects. Project Manager for major NASA hardware development project (Cell Culture Unit). Guided project through

major replanning and rescoping activities due to NASA budget and requirement changes. Project Manager (30 staff and students) for MIT Concept Exploration and Refinement program for the NASA Exploration Systems Division, responsible for technical direction, financial management, and customer reporting. Technical lead on numerous additional NASA and DoD R&D projects.

- 1989-2001 *President and Staff Scientist, Payload Systems Inc.*
Project manager and/or engineering lead for over a dozen NASA technology, spaceflight development, and aerospace programs. All payloads were flown successfully and all mission objectives were achieved. At the corporate level, responsible for financial management and oversight; personnel hiring, evaluation, and termination; business development and client relations. Appeared on several local news programs as commentator during Shuttle missions. Astronaut candidate finalist, 1989, 1998, 2000. Numerous NASA awards, including Group Achievement Award.
- 1989-1989 *Researcher Associate, Mass. Inst. Of Tech.*
Responsible for the definition of test articles for two spaceflight experiments. Supervised graduate students conducting laboratory experiments using prototype intelligent structure.

AWARDS

- AIAA New England Aerospace Engineer of the Year, 2002
NASA Certificate of Appreciation for the Middeck Active Control Experiment (MACE), 1997
NASA Manned Flight Awareness Award for Dynamic Load Sensor Experiment
NASA Group Achievement Award for the Middeck 0-Gravity Dynamics Experiment
OAST "Commendation for Technology Excellence" for the Middeck 0-Gravity Dynamics Experiment.
NASA First to Fly award for the successful flight of the MODE precursor mission (MODE-0) on-board STS-40. This experiment was conceived, manifested, and carried out in under three months.
Finalist, 1989, 1998, 2000 NASA Astronaut Candidate Selection Program.
Received United States patent #4849668 for the development of technique to electrically insulate embedded piezoelectrics from surrounding laminated structure while maintaining actuator and sensor effectiveness.
Received United States patents #7838716 and #8395010 for a high speed swelling hemostatic device that functions as an internal tourniquet to apply pressure on wound cavities to stop or restrict the flow of blood
Received United States patent #7980024 for a photobioreactor system positioned on bodies of water such as a pond or a lake.
MIT James Means Memorial Prize for excellence in space systems engineering for work performed in the design of a meteor protection system for a manned space station.
Authored seminal paper in the field of Smart Materials, "Use of Piezoelectric Actuators as Elements of Intelligent Structures", which has been referenced

over 2000 times (as of July-13) by subsequent journal and conference publications.

APPOINTMENTS AND COMMITTEES

MIT Visiting Engineer, 1995 to present. Responsible for co-teaching capstone undergraduate system engineering course.

NASA Advisory Subcommittee on Technology and Commercialization, 1999 to 2003

Staff, NASA Space Station Subcommittee on Micrometeor and Debris Protection, 1991

Staff, NASA Space Station Subcommittee on ISS External Environment, 1993

PERSONAL

Born in Mexico. Naturalized U.S. citizen as of 1976. Attended secondary school in Lausanne, Switzerland. Speak and write three foreign languages fluently (Spanish, French, Portuguese).

Interests include flying (private pilot VFR license), downhill skiing, scuba diving (PADI advanced open water certificate, 200+ open water dives, including cave, night, and deep dives), photography, international relations, history, and law.

Member, AIAA, AOPA, Tau Beta Pi, Sigma Gamma Tau, Sigma Xi.

President, MIT French House Dormitory, 1980-1981

President, local homeowners community association.

SELECTED PUBLICATIONS

- Velmahos GC, Tabbara M, Spaniolas K, Duggan M, Alam HB, Serra M, Sun L, de Luis J. "Self-expanding hemostatic polymer for control of exsanguinating extremity bleeding". *J Trauma*, 2009; 66:984-8.
- Vunjak-Novakovic, G., Searby, N., de Luis, J, Freed, Lisa E, "Microgravity Studies of Cells and Tissues," Invited Paper, *Ann. N.Y. Acad. Sci.* 974: 504-517 (2002).
- Kundakovic Lj., Pretorius S., Sun L., Larenas P., Rask J., Searby N., de Luis J., Vanderiesche D. and Vunjak-Novakovic G. Myoblast differentiation under flow conditions. NASA Cell Science Conference, February 20-22, 2003, Houston TX.
3. Sun L., Pretorius S., Lagaz J., Preda C., Donovan F., Searby N., Havens C., Vanderiesche D., de Luis J., Parish J. and Vunjak-Novakovic G. Ground base studies of *Saccharomyces cerevisiae* yeast growth in the Cell Culture Unit. NASA Cell Science Conference, February 20-22, 2003, Houston TX.
- Vunjak-Novakovic, G., Searby, N., de Luis, J., Freed, Lisa E., "Microgravity Studies of Cells and Tissues," *Ann. N.Y. Acad. Sci.* 974: 1-14 (2002)
- Miller, D. W., de Luis, J., "Using the Shuttle, MIR and ISS for Operating Micro-Gravity Engineering Research Laboratories," Proceedings of the AIAA Space 2001 Conference & Exposition, AIAA 2001-4648, Albuquerque, NM, August, 2001.
- de Luis, J., Vunjak-Novakovic, G., Searby, N., "Design and Testing of the ISS Cell Culture Unit," IAF/IAA-00-G.4.06, presented at the 51st International Astronautical Congress, Rio de Janeiro, Brazil, Oct. 2000.
- Cho, S., de Luis, J., Bokhour, E., Sullivan, J., Poulin, L., "International Space Station and Shuttle Experiment Support Facility for Structures and Control," Air Force Research Laboratory, Kirtland Air Force Base, NM 87117, AFRL-VS-TR-2000-1005, 1/2000.
- Searby, N.D., de Luis, J., Vunjak-Novakovic, G. (1998) "Design and Development of a Space Station Cell Culture Unit," 1998 Transactions, Vol. 107, Journal of Aerospace, Section 1, pages 445-457.
- Vunjak-Novakovic, G., Preda, C., Bordonaro, J. Pellis, N., de Luis, J., Freed, L.E., "Microgravity Studies on Cells and Tissues: From Mir to the ISS," Space Technology and Applications, International Forum (STAIF-99), Albuquerque NM, January 1999. Published by the American Institute of Physics, pp 442-452, 1999
- Freed, L.E., Pellis, N., Searby, N., de Luis, J., Preda, C., Bordonaro, J., Vunjak-Novakovic, G., "Microgravity Cultivation of Cells and Tissues," *Gravitational Space and Biology Bulletin*, Proceedings of the Am. Soc. for Space and Grav. Biol., October 1998.
- Peterson, Lake and de Luis, "Micron Accuracy Deployment Experiments (MADE): A Space Station Facility for Validating Precision Deployment and Active Controls," Presented at the NGST Technology Challenge Workshop, Oxnard, California, 6/98.
- Searby, N.D., de Luis, J., Vunjak-Novakovic, G. (1998) "Design and Development of a Space Station Cell Culture Unit," SAE Technical Paper Series 981604, 28th International Conference on Environmental Systems, Danvers, MA, July 13 - 16, 1998, pp. 1 - 14.
- Jacques, R.N., Miller, D.W., de Luis, J., "Typical Section Problems for Structural Control Applications," *Journal of Intelligent Material Systems and Structures*, Vol. 7, Nov. 1996.
- Sloot, E.A., Jacobs, J.K., van Ravenzwaaij, J., de Luis, J., "The Canadian Float Zone Furnace - A Multi-User Microgravity Facility for Materials Purification and Crystal Growth," submitted to the 43rd International Astronautical Federation Congress, Austria, 1993.
- Hoskins, W., Klynn, L., Miller, D.W., de Luis, J., "The MACE Active Member," Proc. of the Adaptive Structures, Actuators, and Material Conference, Alexandria, VA, Nov. 1991
- STS-48 L-30 and L-2 Press Conferences. Represented payload organization at NASA pre-mission press conferences.
- Jacques, R.N., Miller, D.W., de Luis, J., "Typical Section Problems for Structural Control Applications," accepted to the AIAA *Journal of Guidance, Control and Dynamics*, Oct. 1991.
- Crawley, E.F., Miller, D.W., de Luis, J., "The MODE Family of On-Orbit Experiment: The Middeck Active Control Experiment," annotated viewgraphs for the 1990 CSI Conference, Orlando, FL Nov. 1990.
- Miller, D.W., de Luis, J., Crawley, E.F., "Dynamics and Control of Multipayload Platforms: The Middeck Active Control Experiment (MACE)," presented at the 41st International Astronautical Federation Congress, Dresden, GDR, Oct 1990.
- de Luis, J., Crawley, E.F., "Active Control Experimental Results on a Prototype Intelligent Structure," presented at the 31st AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conf., Long Beach, Ca. April 1990.
- Crawley, E.F., Miller, D.W., van Schoor, M., de Luis, J., "Middeck 0-Gravity Dynamics Experiment (MODE) Project Plan," M.I.T. Space Systems Laboratory Report, #9-89, July 1989.

Crawley, E.F., de Luis, J., Miller, D.W., "Middeck Active Control Experiment (MACE): Phase A Final Report," M.I.T. Space Systems Laboratory Report, #7-89, June 1989.

de Luis, J., Crawley, E.F., Hall, S.R., "Design and Implementation of Optimal Controllers for Intelligent Structures Using Infinite Order Structural Models," M.I.T. Space Systems Laboratory Report, #3-89, February 1989.

Crawley, E.F., de Luis, J., Hagood, N.W., Anderson, E.H., "Development of Piezoelectric Technology for Applications in Control of Intelligent Structures," presented at the 1988 American Control Conference, Atlanta, Ga. June 1988.

Crawley, E.F., de Luis, J., "Use of Piezoelectric Actuators as Elements of Intelligent Structures," *AIAA Journal*, Vol. 25, No. 10, October 1987, pp. 1373-1385

Crawley, E.F., de Luis, J., "Experimental Verification of Distributed Piezoelectric Actuators for use in Precision Space Structures," AIAA paper 86-0878-CP, presented at the 27th AIAA/ASME/ASCE/ AHS Structures, Structural Dynamics and Materials Conference, San Antonio, Tx. May 1986.

de Luis, J., Crawley, E.F., "The Use of Piezo-Ceramics as Distributed Actuators in Flexible Space Structures," M.I.T. Space Systems Laboratory Report, #20-85, 1985.

Crawley, E.F., de Luis, J., "Use of Piezo-Ceramics as Distributed Actuators in Large Space Structures," AIAA paper 85-0626-CP, presented at the 26th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Orlando, Fl., April 1985.