

INSURANCE COVERAGE

In order that subrogation claims may be adjudicated, it is essential that the claimant provide the following information regarding the insurance coverage of the vehicle or property.

15. Do you carry accident insurance? Yes If yes, give name and address of insurance company (Number, Street, City, State, and Zip Code) and policy number. No

N/A

16. Have you filed a claim with your insurance carrier in this instance, and if so, is it full coverage or deductible? Yes No 17. If deductible, state amount.

18. If a claim has been filed with your carrier, what action has your insurer taken or proposed to take with reference to your claim? (It is necessary that you ascertain these facts).

N/A

19. Do you carry public liability and property damage insurance? Yes If yes, give name and address of insurance carrier (Number, Street, City, State, and Zip Code). No

N/A

INSTRUCTIONS

Claims presented under the Federal Tort Claims Act should be submitted directly to the "appropriate Federal agency" whose employee(s) was involved in the incident. If the incident involves more than one claimant, each claimant should submit a separate claim form.

Complete all items - Insert the word NONE where applicable.

A CLAIM SHALL BE DEEMED TO HAVE BEEN PRESENTED WHEN A FEDERAL AGENCY RECEIVES FROM A CLAIMANT, HIS DULY AUTHORIZED AGENT, OR LEGAL REPRESENTATIVE, AN EXECUTED STANDARD FORM 95 OR OTHER WRITTEN NOTIFICATION OF AN INCIDENT, ACCOMPANIED BY A CLAIM FOR MONEY

Failure to completely execute this form or to supply the requested material within two years from the date the claim accrued may render your claim invalid. A claim is deemed presented when it is received by the appropriate agency, not when it is mailed.

If instruction is needed in completing this form, the agency listed in item #1 on the reverse side may be contacted. Complete regulations pertaining to claims asserted under the Federal Tort Claims Act can be found in Title 28, Code of Federal Regulations, Part 14. Many agencies have published supplementing regulations. If more than one agency is involved, please state each agency.

The claim may be filed by a duly authorized agent or other legal representative, provided evidence satisfactory to the Government is submitted with the claim establishing express authority to act for the claimant. A claim presented by an agent or legal representative must be presented in the name of the claimant. If the claim is signed by the agent or legal representative, it must show the title or legal capacity of the person signing and be accompanied by evidence of his/her authority to present a claim on behalf of the claimant as agent, executor, administrator, parent, guardian or other representative.

If claimant intends to file for both personal injury and property damage, the amount for each must be shown in item number 12 of this form.

DAMAGES IN A SUM CERTAIN FOR INJURY TO OR LOSS OF PROPERTY, PERSONAL INJURY, OR DEATH ALLEGED TO HAVE OCCURRED BY REASON OF THE INCIDENT. THE CLAIM MUST BE PRESENTED TO THE APPROPRIATE FEDERAL AGENCY WITHIN TWO YEARS AFTER THE CLAIM ACCRUES.

The amount claimed should be substantiated by competent evidence as follows:

- (a) In support of the claim for personal injury or death, the claimant should submit a written report by the attending physician, showing the nature and extent of the injury, the nature and extent of treatment, the degree of permanent disability, if any, the prognosis, and the period of hospitalization, or incapacitation, attaching itemized bills for medical, hospital, or burial expenses actually incurred.
- (b) In support of claims for damage to property, which has been or can be economically repaired, the claimant should submit at least two itemized signed statements or estimates by reliable, disinterested concerns, or, if payment has been made, the itemized signed receipts evidencing payment.
- (c) In support of claims for damage to property which is not economically repairable, or if the property is lost or destroyed, the claimant should submit statements as to the original cost of the property, the date of purchase, and the value of the property, both before and after the accident. Such statements should be by disinterested competent persons, preferably reputable dealers or officials familiar with the type of property damaged, or by two or more competitive bidders, and should be certified as being just and correct.
- (d) Failure to specify a sum certain will render your claim invalid and may result in forfeiture of your rights.

PRIVACY ACT NOTICE

This Notice is provided in accordance with the Privacy Act, 5 U.S.C. 552a(e)(3), and concerns the information requested in the letter to which this Notice is attached.

A. **Authority:** The requested information is solicited pursuant to one or more of the following: 5 U.S.C. 301, 28 U.S.C. 501 et seq., 28 U.S.C. 2671 et seq., 28 C.F.R. Part 14.

- B. **Principal Purpose:** The information requested is to be used in evaluating claims.
- C. **Routine Use:** See the Notices of Systems of Records for the agency to whom you are submitting this form for this information.
- D. **Effect of Failure to Respond:** Disclosure is voluntary. However, failure to supply the requested information or to execute the form may render your claim "invalid."

PAPERWORK REDUCTION ACT NOTICE

This notice is solely for the purpose of the Paperwork Reduction Act, 44 U.S.C. 3501. Public reporting burden for this collection of information is estimated to average 6 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Director, Torts Branch, Attention: Paperwork Reduction Staff, Civil Division, U.S. Department of Justice, Washington, DC 20530 or to the Office of Management and Budget. Do not mail completed form(s) to these addresses.

ATTACHMENT 1

ATTORNEY AUTHORIZATION

TO: Federal Aviation Administration
Office of the Chief Counsel
800 Independence Avenue SW
Washington, DC 20591

I, Paul Njuguna Njoroge, both individually and as personal representative of the decedent Rubi W Pauls, hereby designate and authorize Robert A. Clifford and Kevin P. Durkin of Clifford Law Offices, P.C. to represent my interest, and the interests of Rubi W Pauls and her next of kin, and to continue any and all claims which have been filed or will be filed arising from the March 10, 2019 crash of Ethiopian Air Flight 302.

Executed this 29th day of April, 2019, at

Chicago, Illinois



Signature of Paul Njuguna Njoroge

ATTACHMENT 2

INTRODUCTION

1. This action arises from the horrific crash of Ethiopian Airlines Flight 302 (“Flight 302”) on March 10, 2019 in which 157 people lost their lives. The aircraft involved in Flight 302 was a Boeing 737 MAX 8. This crash came less than five months after Lion Air Flight JT 610 – another Boeing 737 MAX 8 – crashed into the Java Sea on October 29, 2018, killing all 189 onboard.

2. Investigation into both crashes is ongoing, but the similarities in the aircraft and the investigative findings for the crashes thus far points to a common cause. Shortly after taking off and while attempting to climb, pilots for both aircraft reported flight control issues as the planes pitched up and down erratically throughout the sky. The flight paths and data released thus far for both aircraft show that the pilots were engaged in a terrifying tug-of-war with the plane’s automated systems as the pilots manually tried to climb while the computer system repeatedly caused the plane to dive with increasing nose-down trim against the pilot inputs. Pilots of both Flight 302 and Flight 610 lost their fight with Boeing’s flight computer, and hundreds of passengers and crew lost their lives due to Boeing’s flight computer, driving the airplanes into the ground.



The Wreckage of Ethiopian Airlines Flight 302

3. Boeing installed the defective flight control system suspected to be the cause of both crashes to address changes in the aircraft's handling caused by the 737 MAX 8 aircraft's larger and more fuel-efficient engines. Both the design changes boosting fuel efficiency and the unsafe way in which Boeing designed and certified the flight control system were tools to make the 737 MAX 8 aircraft more competitive against rivals like the Airbus A320, which would in turn increase Boeing's sales and profits.

4. Blinded by its greed, Boeing haphazardly rushed the 737 MAX 8 to market, with the knowledge and tacit approval of the **UNITED STATES FEDERAL AVIATION ADMINISTRATION ("FAA")**, while Boeing actively concealed the nature of the automated system defects. Numerous decisions by Boeing's leadership substantially contributed to the subject crash and demonstrate Boeing's conscious disregard for the lives of others, including but not limited to Boeing's role in: designing an aircraft with a powerful automated flight control system susceptible to catastrophic failure in the event a single defective sensor; failing to properly inform

pilots of the existence of the new flight control system and educate and train them in all aspects of its operation; failing to properly address the new system in the aircraft's flight manual; refusing to include key safety features as standard in the aircraft rather than optional upgrades; delivering 737 MAX 8 aircraft with a version of the flight control system that was materially different from the version presented to the FAA during certification; and failing to take appropriate action after Boeing learned that the 737 MAX 8 aircraft was not performing as intended or safely, as was made tragically clear with the crash of Lion Air Flight JT 610.

5. Boeing's decision to put profits over safety is further evident in Boeing's repeated claims that the 737 MAX 8 is so similar to its earlier models that it does not require significant retraining for those pilots familiar with the older generation of 737s. Boeing has insisted that retraining is not required, even after Lion Air Flight 610 crashed, because airlines would buy fewer Boeing aircraft if pilots needed to be retrained. In so doing, Boeing risked people's lives merely to improve its bottom line and must pay punitive damages to punish and deter Boeing, and others, from doing so again.

6. Equally culpable in the tragic loss of life, the FAA approved and/or certified Boeing's design for its new aircraft despite its substantial flaws because the FAA had negligently hired and/or trained its employees, and it knew or should have known its employees were unfit to perform their job duties and responsibilities, including implementing and executing inspections and testing of the 737 MAX 8; and that a catastrophic plane crash was a foreseeable consequence. Further, after the initial Lion Air Flight 610 crash, the FAA negligently, recklessly, and/or unlawfully provided incomplete and inadequate warnings to pilots, passengers, and the public that severely understated and downplayed the serious known safety risk associated with continued flight of the 737 MAX 8. Moreover, it characterized the FAA airworthiness directive as a "non-emergency" that would address and fix the known problem, all of which Plaintiffs and other passengers on Flight 302 relied on to their detriment, being duped into a false sense of security about riding on a 737 MAX 8. Sadly, these two entirely preventable airline crashes demonstrate that the FAA is ill-equipped to oversee the aerospace industry and will downplay serious hazards

and safety risks to the public rather than sound the alarm about safety concerns, problems, issues and hazards that pose substantial, probable, and/or foreseeable risks to human life. Boeing, and the regulators that enabled it must be held accountable for their reckless actions.

THE PARTIES

CLAIMANTS

7. Decedent **RUBI W PAULS** (“**DECEDENT**”) was a passenger on board Ethiopia Flight 302 when it crashed on March 10 with a purchased ticket for the flight with a final destination of Nairobi, Kenya. Claimant **PAUL NJUGUNA NJOROGE** is the personal representative and next of kin for **DECEDENT**, on her behalf and the behalf of her estate, heirs, survivors, and beneficiaries (“**CLAIMANT**”). Claimant is a permanent resident of Canada with his principal and permanent residence in the Province of Ontario.

RESPONDENT

8. The **UNITED STATES FEDERAL AVIATION ADMINISTRATION** (“**FAA**” or “**RESPONDENT**”) is a federal regulatory agency acting under the **UNITED STATES DEPARTMENT OF TRANSPORTATION**. **FAA**, through its officers, officials, agents and/or employees, is the agency responsible for the regulation and oversight of civil aviation within the United States with its primary mission to ensure safety of civil aviation.

STATEMENT OF FACTS

A. THE BOEING COMPANY RUSHED THE BOEING 737 MAX 8 TO PRODUCTION

9. Boeing’s main competitor in the commercial aviation industry is Airbus. Airbus had been increasing market share for decades and eating into Boeing’s sales. When Airbus launched its more fuel-efficient airliner, the A320neo, Boeing initially dismissed its anticipated appeal with airlines.

10. The chief executive of Boeing’s commercial airplanes division, James F. Albaugh, told employees at a meeting in January 2011 that Airbus’ decision to redesign its existing aircraft

with larger engines would be “a design change that will ripple through the airplane” and present significant challenges.¹

11. Boeing’s tune changed when it learned that some of its key customers, including American Airlines, would be placing orders with Airbus for their fuel-efficient aircraft. This ratcheted up pressure on Boeing to respond. Since the design of an entirely new jet would take too long, Boeing decided to create a more fuel-efficient alternative to its traditional 737NG aircraft – what would become the 737 MAX 8.

12. A former senior Boeing official reported that the company opted to build the 737 MAX 8, rather than an entirely new aircraft, because it would be “far quicker, easier and cheaper than starting from scratch, and would provide almost as much fuel savings for airlines.”²

13. In August 2011, Boeing launched the 737 MAX family of aircraft, a new iteration of the widely-used 737NG, designed to compete with Airbus’ A320neo. In designing the 737 MAX 8, it was vital to Boeing’s leadership that it could market the aircraft as simply an upgrade to its already certified 737NG and obtain regulatory approval from the FAA permitting pilots to operate the 737 MAX 8 aircraft without extensive simulation time or retraining.

14. On information and belief, the decision to design an aircraft which would obtain certification from the FAA, without the need for pilot retraining and the ambitious timeline for completion of the 737 MAX 8, was made by Boeing corporate leadership at its headquarters in Chicago.

15. Rick Ludtke, an employee at Boeing for 19 years and an engineer who helped design the 737 MAX 8 cockpit explained that “[a]ny designs we created could not drive any new training that required a simulator.” That was the first ground rule communicated to engineers designing the MAX. This created a chaotic environment for engineers. As Ludtke described: “The company was trying to avoid costs and trying to contain the level of change. They wanted the

¹ David Gelles, Natalie Kitroeff, Jack Nicas, and Rebecca R. Ruiz, “Boeing 737 Max: A jet born of a frantic race to outdo a rival,” *New York Times*, March 24, 2019.

² *Id.*

minimum change to simplify the training differences, minimum change to reduce costs, and to get it done quickly.”³

16. The need to minimize design changes served an important business need for Boeing. If airline pilots did not require costly and time-consuming training in the new aircraft because it was viewed as merely an update to the familiar 737NG, it would make the 737 MAX 8 cheaper for airlines to operate. This in turn would make the price for the 737 MAX 8 more competitive relative to the Airbus A320neo and far more profitable for Boeing.

17. Thus, Boeing needed the 737 MAX 8 aircraft to be more fuel efficient and also handle similarly to the 737NG. The MAX aircraft was able to achieve this new fuel efficiency, in part, due to the model’s larger engines, the CFM LEAP-1B Engine. However, adding the larger engines triggered cascading design and engineering changes for the aircraft, the same ripple of changes James Albaugh, Boeing’s commercial airplanes chief executive, had predicted back in 2011 when criticizing Airbus’ A320neo.

18. The larger engines could not be mounted in the same location as the engines on the 737NG so they had to be moved farther forward on the plane, which in turn required moving the forward landing gear. The more powerful engines, coupled with their new location, caused the 737 MAX 8 to handle differently from the 737NG by changing the plane’s lift characteristics. A 737NG pilot operating the 737 MAX 8 would find that the 737 MAX 8 would ascend faster and at a higher angle, increasing the risk of a stall.

19. As Boeing’s business leaders required engineers to contain the level of change to avoid pilot retraining and make the 737 MAX 8 more marketable, Boeing now needed to engineer a band-aid to fix the aircraft’s handling issues created by the larger and more powerful engines.

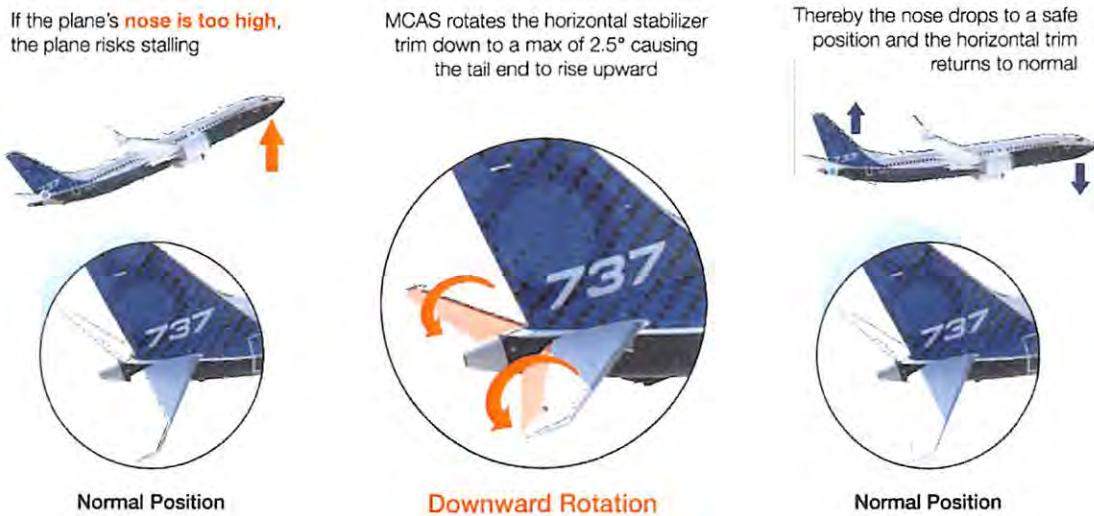
³ Id.

B. BOEING INTRODUCED A FLIGHT CONTROL SYSTEM WHICH ADDRESSED ONE PROBLEM BUT CREATED ANOTHER

20. To address this risk of a stall and to make the plane handle like prior models of the 737, Boeing included a new automated flight-control system in the MAX aircraft, the Maneuvering Characteristics Augmentation System (MCAS).

21. The MCAS collected data from a single sensor on the fuselage called the angle-of-attack sensor (“AOA sensor”) which measures the angle between the wing of the plane on the oncoming airflow at the front of the plane.⁴ If the AOA sensor registers that the angle is too high – that the plane is climbing too sharply – then the MCAS activates, automatically swiveling the horizontal tail of the plane to move the plane’s nose down, as can be seen on the following graphic:

Maneuvering Characteristics Augmentation System (MCAS) as Intended by Boeing



22. The MCAS was not programmed to use data from both of the airplane’s AOA sensors to help validate the AOA data and protect against single point failures. This meant that if the single AOA sensor used as input to the MCAS malfunctioned and erroneously believed the

⁴ On information and belief, the AOA sensor onboard the Boeing 737 MAX 8 involved in both Flight 610 and Flight 302 was designed, tested, engineered, and manufactured by Rosemount Aerospace, Inc..

plane was climbing too quickly, then there was no means of detecting its erroneous condition and excluding that data prevent the MCAS from improperly intervening and forcing the plane to dive.

23. The MCAS was intended to automatically adjust the pitch of the plane to avoid stalling with the MAX's more powerful engines when the plane was being controlled manually by the pilot. The pilot would not need to manually activate the MCAS, nor would the aircraft inform the pilot that the MCAS system was making pitch trim inputs.

24. Since the MCAS was intended to operate in the background without pilot knowledge, Boeing did not even inform pilots that the MCAS existed. The MCAS was not disclosed in the aircraft's flight manual either. Pilots would only learn indirectly about the MCAS when the plane began automatically fighting their pitch commands, often at low altitudes with little time to react and resolve the issue.

25. A Boeing executive met with pilots' union representatives in November 2018, after the Lion Air crash. According to pilot Dennis Tajer who was in attendance, Boeing executives tried to excuse their failure to disclose this system by explaining that they did not wish to "inundate" pilots with too much information about the new plane.⁵ Frustrated, pilot unions have described Boeing's actions in failing to disclose the software as a "break of trust."⁶

C. THE FEDERAL AVIATION ADMINISTRATION FAILED TO PROPERLY HIRE AND TRAIN ADEQUATE TECHNICAL STAFF TO COMPETENTLY PERFORM AND FULFILL ITS INSPECTION AND TESTING OBLIGATIONS

26. As one sign of how under-resourced and ill-equipped FAA staff were to evaluate the 737 MAX 8's features, the FAA relied heavily on Boeing to validate the safety of its own aircraft. In 2005, the FAA adopted the Organization Designation Authorization ("ODA"), allowing Boeing to designate its own employees who will approve design work on the FAA's behalf.

⁵ <https://www.nytimes.com/2019/03/16/business/boeing-max-flight-simulator-ethiopia-lion-air.html>

⁶ Id.

27. Even with this delegation of responsibility by the **FAA** to Boeing, the Department of Transportation auditors in 2012 found that the **FAA** had not done enough to “hold Boeing accountable,” presumably because **FAA** employee were ill-equipped, under-qualified, and/or insufficiently trained to actually perform this necessary job function and responsibility. This is confirmed by a later 2015 report from the Department of Transportation’s inspector general, which faulted the **FAA** for lacking “an effective staffing model” and “risk-based oversight process.”⁷

28. Further, **FAA** employees reported poor morale and disagreement relating to the **FAA**’s treatment of Boeing, and fear of retaliation if they spoke up.⁸

29. As it was ceding more and more of its regulatory authority to Boeing, the **FAA** conducted its certification of the 737 MAX 8, with the aircraft finally certified on March 9, 2017. However, due to the under-qualified and insufficiently trained nature of the **FAA** staff, the certification process was proceeding slower than Boeing desired and **FAA** technical experts reported receiving pressure from management to speed up certification of the MAX aircraft because the development of the MAX was nine months behind Airbus’ A320neo.⁹ Without time, resources, and/or the proper tools to carefully scrutinize the safety of the 737 MAX 8, the **FAA** knew or should have known the serious safety implications of failing to retain fit staff and failing to properly equip and/or train its staff to competently perform its job.

30. It is clear management at the **FAA** knew that its technical staff was ill-equipped, under-qualified, and/or insufficiently trained to handle inspections and testing of the 737 MAX 8 because it recognized that it had “retained too much” work internally and pressured **FAA** safety engineers to re-evaluate what was delegated to Boeing relating to certification of the 737 MAX 8. As recounted to the Seattle Times by a former **FAA** safety engineer who was directly involved in certifying the MAX , halfway through the certification process, “we were asked by management

⁷ Id.

⁸ <https://www.bloomberg.com/news/articles/2019-03-18/boeing-had-too-much-sway-checking-own-planes-faa-workers-warned>

⁹ Id.

to re-evaluate what would be delegated. Management thought we had retained too much at the **FAA.**”¹⁰

31. While more and more work was being delegated to Boeing for it to evaluate itself, the work that was retained by the **FAA** was still not being done properly because its technical staff was ill-equipped, under-qualified, and/or insufficiently trained. The former **FAA** engineer went on to tell the Seattle Times that “[t]here wasn’t a complete and proper review of the documents... .”¹¹ As Boeing was running out of time to deliver the 737 MAX 8 to airlines, **FAA** managers in some instances would sign off on documents themselves without waiting for the **FAA** technical staff to complete their review.

32. Therefore, the **FAA** approved and/or certified Boeing’s design, production, and/or manufacturing for its new aircraft despite its substantial flaws because the **FAA** had negligently hired and/or trained its employees, and it knew or should have known that if its employees were unfit to perform and/or could not competently perform their job duties and responsibilities, including implementing and executing inspections and testing of the 737 MAX 8, that a catastrophic plane crash would foreseeably result.

D. BOEING’S LEADERSHIP CREATED A CULTURE PUTTING PROFITS OVER SAFETY

33. In the mad rush to get the MAX 8 certified and orders filled to airlines, Boeing leadership placed enormous pressure on its engineers to produce a finished product. The New York Times interviewed several of the engineers and designers working on the MAX, who described this frantic pace of the MAX’s development:

- a. An engineer working on the MAX said that “[t]he timeline was extremely compressed ... It was go, go, go.”¹²

¹⁰ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

¹¹ *Id.*

¹² New York Times, *Boeing 737 Max: A jet born of a frantic race to outdo a rival*; by David Gelles, Natalie Kitroeff, Jack Nicas, Rebecca R. Ruiz, March 24, 2019.

- b. A former designer working on the MAX's flight controls described how the design team had at times produced 16 technical drawings a week, double the normal rate. The designer understood the message from management to be: "We need something now."¹³
- c. A technician who assembles wiring on the MAX said that he received sloppy blueprints in the first few months of development and was told that the instructions for the wiring would be cleaned up later in the process. However, his internal assembly designs for the MAX apparently still include omissions today, such as not specifying which tools to use to install a certain wire, a situation that could lead to a faulty connection. This is quite different from standard procedures because normally such blueprints include intricate instructions.¹⁴

34. On information and belief, the unreasonable expectations placed on engineers and designers by the corporate business leadership centered in Chicago created an environment at Boeing's facilities which was ripe for mistakes and wherein employees were reluctant to raise concerns that may delay certification and production of the MAX.

35. A lawsuit filed in state court in South Carolina on March 16, 2019 by a former Boeing Quality Assurance Conformity Manager, calls into question the integrity of Boeing's testing and inspections procedures. This manager was tasked with inspecting all newly manufactured aircraft for compliance with internal engineering and safety specifications. Each incidence of non-conformity that Boeing inspectors encounter is supposed to be documented by Boeing as well as all repairs and subsequent inspections.

36. According to the manager's complaint, at one of Boeing's manufacturing plants, Boeing agents and/or employees engaged in improper conduct including:

- a. "Goldplating" which is repeating a test until it is successful and then having the records show that the test was successful on the first attempt;

¹³ Id.

¹⁴ Id.

- b. Knowingly using out of date engineering specifications;
- c. Knowingly using uncertified technicians to perform maintenance and repairs;
- d. Violating the internal Boeing policy and procedures that were put in place to achieve final approval of each stage of production and make the plane immediately saleable;
- e. Disabling the automated system that notified all pertinent employees of mandatory inspections of newly manufactured aircraft; and
- f. Submitting conformities without documented repairs.

37. The manager also alleges that when he tried to document non-conforming aircraft equipment, he was threatened, retaliated against, subjected to a hostile work environment, and eventually terminated.

38. On information and belief, this manager's allegations relating to violations of safety standards, falsified inspection records, and an environment of distrust and retaliation, are representative of wrongful conduct and violation of safety protocols at other Boeing manufacturing facilities. Plaintiffs further allege that these issues were known, encouraged and/or ratified by Boeing's leadership and contributed to a culture that suppressed voices raising the alarm about safety in furtherance of Boeing's profit-driven focus.

E. BOEING CONDUCTED A FLAWED SAFETY ASSESSMENT OF THE MCAS AND FALSIFIED DATA TO THE FAA

39. In addition to the questions about Boeing's design and manufacturing procedures at the time the MAX was undergoing design and certification, the protocols for Boeing's safety assessment of the MCAS showed glaring errors.

40. The MCAS was designed to swivel the horizontal tail to push the nose of the plane down to avert a stall. Boeing tested this system, but the safety analysis understated the power of the system.

41. Boeing submitted documentation to the FAA indicating that the MCAS could only move the horizontal tail a maximum of 0.6 degrees. However, when the MAX 8 was put into

service, the MCAS was capable of moving the tail 2.5 degrees, more than four times than the 0.6 degrees stated in the initial safety analysis provided to the FAA. The version of the MCAS that Boeing embedded in its aircraft and sold all over the world was materially different and far more powerful than what Boeing represented to the FAA and other regulatory agencies. The FAA did not learn that the MCAS would move the horizontal tail 2.5 degrees until after 189 people were killed in the Lion Air crash.

42. The safety analysis also failed to account for how the MCAS could reset itself after each time a pilot responded. This meant that a malfunctioning MCAS would not just cause a single downward movement of 2.5 degrees but could dip the nose of the aircraft 2.5 degrees lower multiple times as the pilot tries to regain control. Without correction, two cycles of the MCAS at the 2.5-degree limit could cause the aircraft to reach its maximum nose-down trim position. Peter Lemme, a former Boeing flight controls engineer, explained to the Seattle Times that, since the MCAS can reset each time it is used, “it effectively has unlimited authority.”¹⁵

43. Based on Boeing’s own flawed assumptions – that the MCAS’ maximum authority was 0.6 degrees – Boeing’s System Safety Analysis classified the MCAS as a “major failure” in normal flight and a “hazardous failure” in the event of an extreme maneuver, such as a banked descending spiral.¹⁶ A “major failure” indicates that the system’s failure could cause physical distress to people on the plane, but not death. A “hazardous failure” could cause serious or fatal injuries to a small number of passengers. One level above hazardous failure is “catastrophic failure,” which represents the loss off the plane with multiple fatalities.

44. The failure classification system is important because it drives whether a flight control system can rely on a single sensor input or must have two or three. Systems with a consequence of failure classified as a “major failure” must have a probability of failure less than one in 100,000. Typically, such systems are allowed to rely on a single input sensor.¹⁷

¹⁵ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

¹⁶ Id.

¹⁷ Id.

45. In contrast, systems classified as “hazardous failure” have more severe consequences of failure and therefore must have a probability of failure less than one in 10 million. Systems classified as “hazardous failure” typically must have at least two separate input channels as a backup in the event one sensor fails.¹⁸

46. With the MCAS being classified as a “hazardous failure,” it should have had a redundant back-up system. Instead the MCAS could be triggered by a reading from a single AOA sensor and, once triggered, it had unlimited authority to pitch the nose of the aircraft down.

47. Boeing had a second AOA sensor on the airplane that it could have used to provide redundancy and safety, and which it is now using in its MCAS software “fix” after these two fatal accidents, but it chose not to do so during design and certification to save whatever time and money it could. Boeing did the same thing in its design of the 737 auto-throttle system prior to the 2009 Turkish Airlines Flight 1591 crash in Amsterdam – reliance on a single sensor input instead of two readily available inputs – and after that accident quickly issued a software fix to prevent recurrence. Boeing should have learned from that accident to never try to save money via single sensor reliance on critical systems, but once again did so on the 737 MAX MCAS design, costing **DECEDENT** and others their lives.

48. As Boeing’s former flight controls engineer, Peter Lemme, told the Seattle Times: “A hazardous failure mode depending on a single sensor, I don’t think passes muster.”¹⁹

49. Boeing has repeatedly and intentionally violated this system safety design principle and egregiously abused its **FAA** certification designee position to allow it to pass certification muster, resulting in hundreds of Boeing airplane passenger deaths and injuries over the years.

F. BOEING REJECTED MULTIPLE OPTIONS TO MAKE ITS PLANE SAFER

50. Despite the MCAS’ glaring flaws, Boeing had two available safety features that could mitigate the risk of the AOA sensor failing and causing an uncontrolled dive, but consciously

¹⁸ Id.

¹⁹ Id.

chose to make these safety features optional add-ons for airlines and charge extra. One such feature is an angle of attack indicator, which would display the readings from the AOA sensor.²⁰ Without this upgrade, pilots do not have a reading of what the AOA is registering, making it more difficult to identify an AOA malfunction.

51. The other safety feature is called a disagree light. The MAX 8 comes outfitted with two AOA sensors at the front of the plane, but the MCAS only takes readings from one sensor on any given flight, leaving the system vulnerable to a single point of failure. Upgrades to the MCAS software coupled with the installation of a disagree light in the cockpit would alert pilots if the two AOA sensors register readings at odds with the other.

52. Aviation analyst, Bjorn Fehrm, told the New York Times that these safety features are “critical” and “cost almost nothing for the airlines to install.”²¹ Upgrades to the MCAS software could also program the system to turn off in the event the two AOA readings are materially out-of-sync.²²

53. Despite the potential for the AOA sensor failing and wrongfully activating the MCAS to force the plane downward, Boeing did not install the AOA indicator or disagree light as standard. Instead, Boeing charges a premium for these essential safety features.²³

G. BOEING MISREPRESENTED ITS AIRCRAFT TO PILOTS AND AIRLINES, DOWNPLAYING THE NEED FOR ESSENTIAL TRAINING

54. With the MAX 8 certified by the FAA, Boeing began delivering aircraft all over the world starting in May 2017. The MAX 8 was an incredibly popular and profitable aircraft for Boeing.²⁴

55. As Boeing had intended, pilots transitioning from the older 737s to the 737 MAX 8 were not required by the FAA to receive extensive training on the 737 MAX aircraft because it obtained the same “type rating” as early 737 models. This was a primary selling point for the MAX

²⁰ <https://www.nytimes.com/2019/03/21/business/boeing-safety-features-charge.html>

²¹ Id.

²² <https://www.nytimes.com/2019/03/21/business/boeing-safety-features-charge.html>

²³ Id.

²⁴ <https://www.newyorker.com/news/our-columnists/how-did-the-faa-allow-the-boeing-737-max-to-fly>

as it was presented to airlines. On its website, Boeing represented to airlines that “as you build your 737 MAX fleet, millions of dollars will be saved because of its commonality with the Next-Generation 737.”²⁵

56. Due to Boeing’s representations regarding the MAX’s commonality with the 737NG, pilots have reported that they were given just 56 minutes of training on an iPad about the differences between the new Boeing MAX planes and the older 737s. The MCAS system was not discussed during this training.

57. With simulators for the new aircraft unavailable at the time the 737 MAX was pressed into service, pilots with United Airlines put together their own 13-page guide to the 737 MAX, but even this guide failed to mention the MCAS, leaving pilots unprepared to deal with a sudden and unexpected dive by the automated systems in the aircraft.²⁶

58. American Airlines pilot union representative and 737 pilot, Dennis Tajer, explained: “When you find out that there are systems on it that are wildly different that affect the performance of the aircraft, having a simulator is part of a safety culture...It can be the difference between a safe, recoverable flight and one that makes the newspapers.”²⁷

H. LION AIR FLIGHT JT 610 CRASHES AFTER PILOTS EXPERIENCE A FLIGHT CONTROL ISSUE

59. On October 29, 2018, Lion Air flight JT 610 (“Flight 610”) departed Jakarta, Indonesia. Shortly after takeoff, the pilots complained of flight control issues as the plane repeatedly pitched down despite the pilots’ efforts to climb. The pilots reported unreliable airspeed and altitude readings. In the audio recordings from the cockpit, the rattle of a stick shaker can be heard, a device used to alert pilots of a potential stall, which can occur when a plane ascends too quickly.

²⁵ <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

²⁶ <https://www.nytimes.com/2019/03/16/business/boeing-max-flight-simulator-ethiopia-lion-air.html>

²⁷ <https://www.nytimes.com/2019/03/16/business/boeing-max-flight-simulator-ethiopia-lion-air.html>

60. The pilots requested permission to return to Jakarta, which was granted, but the plane did not return. Satellite data showed the plane rising and falling repeatedly – more than 20 times – as the pilots struggled to wrest control back from the automated systems. Within just 12 minutes of taking off, Flight 610 crashed into the Java Sea, killing all 189 people onboard.

61. The cockpit voice recording recovered from the wreckage revealed that while the plane danced perilously across the sky, one of the pilots flipped through a technical manual in an attempt to identify the problem while the other pilot prayed.²⁸ The pilots appeared unaware of the MCAS and its potential role in overriding their manual controls.²⁹

62. Preliminary analysis of the crash and data obtained from the plane’s flight data recorder (FDR) show that one of the AOA sensors produced a reading that was at least 20 degrees different from the other AOA sensor as the plane took off and began its climb. This strongly suggests that a malfunction in the AOA sensor feeding information to the MCAS triggered an unwarranted activation of the MCAS system at low altitudes, causing the plane’s nose to pitch down.

I. BOEING FAILED TO TAKE NECESSARY ACTION

63. Following the tragic crash of Lion Air Flight 610, Boeing knew or had reason to suspect that a malfunction in the AOA sensor and MCAS may have been responsible. The FAA issued an Emergency Airworthiness Directive (“AD”) on November 7, 2018 identifying the potential danger presented by the flight control system, but not providing clear instruction on what pilots should do in the event of an AOA failure:

“This AD was prompted by analysis performed by the manufacturer showing that if an erroneously high single angle of attack (AOA) sensor input is received by the flight control system, there is a potential for **repeated nose-down trim commands of the horizontal stabilizer**. We are issuing this AD to address this potential resulting nose-down trim, which could **cause the flight crew to have difficulty controlling the airplane**, and lead to **excessive nose-down altitude, significant altitude loss, and possible impact with terrain.**”

²⁸ <https://www.nytimes.com/2019/03/20/world/africa/ethiopian-airlines-boeing.html>

²⁹ <https://www.nytimes.com/2019/03/20/world/asia/lion-air-crash-boeing.html>

64. The flight path of Lion Air flight 610 suggests that the malfunctioning AOA sensor and nose-down commands were a factor in the crash:

How Lion Air flight 610's takeoff compares with a typical flight

Altitudes in 10 minute period:



65. Boeing issued the Airworthiness Directive and began investigating a software patch to address the issue but did not insist on further training of pilots to deal with the defective AOA sensor or MCAS software. Boeing also downplayed the significance of the threat presented by the MCAS and did not call for any aggressive action to prevent further incidents.

66. Boeing has maintained that the failure of the MCAS could be handled in the same way as a standard “stabilizer runaway,” a malfunction which occurs when the Trimmable Horizontal Stabilizer (THS) on the aircraft tail fails to stop at the selected position and continues to deflect up or down.

67. Pilots and aviation experts have challenged Boeing’s characterization because the MCAS failure does not behave like a runaway stabilizer. First, with a runaway stabilizer, there is

continuous uncommanded movement of the tail. In contrast, the movement of the tail is not continuous in a MCAS failure: pilots are able to counter the nose down movement, only to have the MCAS move the tail once again. Second, the MCAS alters the control column response to the stabilizer movement. Pulling back on the column normally interrupts any stabilizer nose-down movement, but with MCAS operating that control column function is disabled.³⁰

68. Boeing's attempts to deflect blame onto purportedly poorly trained pilots wrongfully minimizes Boeing's responsibility for these crashes. It is foreseeable that pilots would be confused by MCAS' control over the 737 MAX 8 as the system's nose-down commands were different from a common stabilizer problem and because pilots were not told the MCAS existed or how it functioned. When seconds matter, the confusion caused by Boeing's defective and unsafe design, and failure to inform pilots, is the difference between life and death.

69. Both before and after the Lion Air crash, several pilots anonymously submitted complaints on the Aviation Safety Reporting System ("ASRS") which described similar flight control issues and unanticipated dives with the 737 MAX 8 aircraft. One such report submitted by a pilot in November 2018 – after the Lion Air crash and before the Ethiopian Airlines crash – describes the pilot's reaction to learning of the MCAS system:

"I think it is unconscionable that a manufacturer, the FAA, and the airlines would have pilots flying an airplane without adequately training, or even providing available resources and sufficient documentation to understand the highly complex systems that differentiate this aircraft from prior models. The fact that this airplane requires such jury rigging to fly is a red flag. Now we know the systems employed are error prone—even if the pilots aren't sure what those systems are, what redundancies are in place, and failure modes.

I am left to wonder: what else don't I know? **The Flight Manual is inadequate and almost criminally insufficient.** All airlines that operate the MAX must insist that Boeing incorporate ALL systems in their manuals."

70. Shortly after Flight 610 crashed, and after learning of numerous complaints regarding similar close calls, Boeing knew that hundreds of the of its 737 MAX 8 aircraft were

³⁰ See <https://www.seattletimes.com/business/boeing-aerospace/failed-certification-faa-missed-safety-issues-in-the-737-max-system-implicated-in-the-lion-air-crash/>

still in use carrying passengers all over the globe, which presented a substantial risk that a similar incident could occur without appropriate and immediate intervention.

71. Despite this knowledge and the gravity of the risks presented to passengers, crew, and the public at large from imperiled airplanes flying overhead, Boeing consciously and intentionally failed to act, and/or acted without the urgency commensurate with the risk of harm presented by its defective and dangerous aircraft.

72. Instead, Boeing kept a keen eye on the record revenue the 737 MAX 8 was generating and the backlog of orders it had yet to fill. Just a few months after sharing condolences for the victims of Lion Air Flight 610, Boeing's twitter account posted the following:



2018 HIGHLIGHTS

The Boeing Company



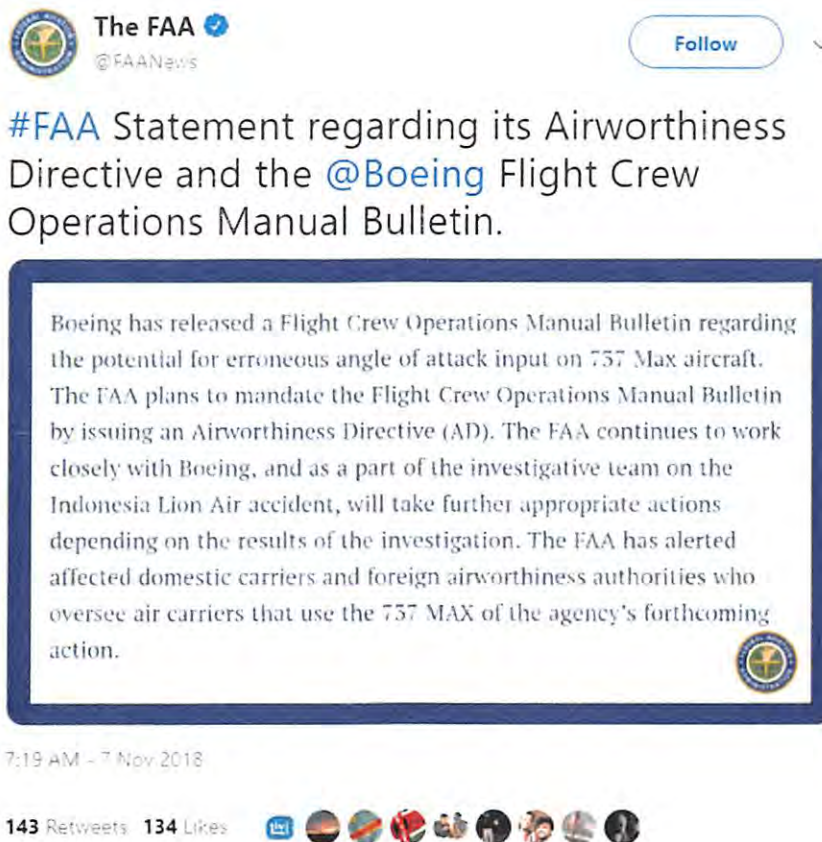
29 188 517

Plaintiffs are informed and believe and on such information and belief allege that Boeing chose not to respond to the Flight 610 crash with the appropriate degree of urgency or with appropriate safety steps because it feared doing so would result in financial loss to Boeing if airlines grounded their aircraft or had to retrain their pilots. Instead, motivated by profit, Boeing downplayed the danger presented by its defective and dangerous aircraft, creating a false sense of security and ensuring that the 737 MAX 8 would still be utilized to carry passengers despite the presence of the defective and dangerous AOA sensor and MCAS.

J. THE FAA DOWNPLAYED THE SERIOUS SAFETY RISK IT KNEW EXISTED AFTER THE LION AIR FLIGHT 610 CRASH AND PLAINTIFFS RELIED ON THIS TO THEIR DETRIMENT

73. The FAA aided and abetted Boeing in this scheme to downplay the clear and present danger to the public presented by Boeing’s dangerous and defective aircraft because Boeing shared a close relationship with the FAA, and the federal government generally, such that the FAA consciously and intentionally turned a blind eye to Boeing’s reckless conduct.

74. On November 7, 2018 at 7:19 AM, the FAA posted the following warning to the public on its Twitter Feed. This warning purposefully omits the word “Emergency” when describing the FAA directive, and it also presents no language indicating any safety risk or hazard associated with continued flight of the 737 MAX 8 or with being a passenger on a 737 MAX 8.



75. Over five hours later, the FAA posted a different and new warning to the public on its Twitter Feed. Recognizing its negligent, reckless, and/or purposeful omission of the word

“emergency” from the first post, this Twitter post made sure to include the term “emergency” twice. This post provided somewhat more information to the public, but still fell severely short of informing the public of any serious safety risk and misled the public as to the nature and character of the problem, the level of risk associated with the problem, as well as the action necessary to fully remediate the problem. The post presented the hazard in the 737 MAX 8 as if any airline and pilot could easily remediate the hazard by a simple revision to “the airplane flight manual” which all “operators have three days to revise,” lulling the public into a false sense of security that all known safety hazards with the 737 MAX 8 were insignificant and had been remediated, and that it was safe for passenger transportation.



76. To make matters worse, the **FAA** posted a media release to its website seven days later on November 14, 2018, titled “**FAA** Statement on Boeing Model 737-8 and -9 Airplanes.” The **FAA** took a step backward and again omitted the word “emergency” entirely from the

statement. It also failed to inform the public of any serious safety risk and misled the public as to the nature and character of the problem, the level of risk associated with the problem, as well as the action necessary to fully remediate the problem. It also made a further, affirmative statement aimed at inducing the public to believe safety concerns with the 737 MAX 8 were insignificant and not serious by concluding the media release in the following manner: “The FAA is not doing a safety probe separate from the ongoing Lion Air Accident investigation of which we, the NTSB and Indonesian officials are a part.” (emphasis added). Notably, this “FAA Statement” still appears on the “News and Updates” portion of the FAA website.

[FAA Home](#) » [News](#) » [News & Updates](#)

FAA Statement on Boeing Model 737-8 and -9 Airplanes

Search: ?

News type: [News & Updates](#) ▾



The existing [FAA Airworthiness Directive \(AD\)](#) (PDF) identifies existing flight crew procedures to be used in those circumstances. The FAA and Boeing continue to evaluate the need for software and/or other design changes to the aircraft including operating procedures and training as we learn more from the ongoing investigation. The FAA is not doing a safety probe separate from the ongoing Lion Air Accident investigation of which we, the NTSB and Indonesian officials are a part.

Page last modified November 14, 2018 1:28:38 PM EST

77. The close relationship between the FAA and Boeing is clear from the connections present and former Boeing executives have cultivated. After Lion Air Flight 610 crashed and at the very moment that the FAA should have been providing adequate, transparent, and sufficient public safety advisories and warnings regarding the 737 MAX 8, former Boeing executive, Patrick Shanahan was elevated to Acting Secretary of Defense. Following her resignation from the post

of United States Ambassador to the United Nations, Nikki Haley, is slated to join Boeing's board of directors. Boeing reportedly donated \$1 million to the President of the United State's inauguration. It has also been reported Boeing's CEO personally called the President following the deadly Flight 610 and Flight 302 crashes to advocate against the grounding of the 737 MAX.³¹

78. **DECEDENT** and other passengers on Flight 302 relied on these media posts by the **FAA** to their detriment, being duped into a false sense of security about riding on a 737 MAX 8.

K. ETHIOPIAN AIRLINES FLIGHT 302 CRASHES KILLING ALL 157 PEOPLE ON BOARD

79. On March 10, 2019, Flight 302 took off from Addis Ababa towards its destination of Nairobi, Kenya. Within one minute of its departure, the pilot calmly radioed that he was having flight control problems. Within three minutes, now panicked, the pilot requested permission to return back to Addis Ababa. The plane was accelerating abnormally and oscillating up and down. Shortly thereafter, all communication with Flight 302 stopped and the plane violently crashed into a field, killing all 157 people aboard, including **DECEDENT**.

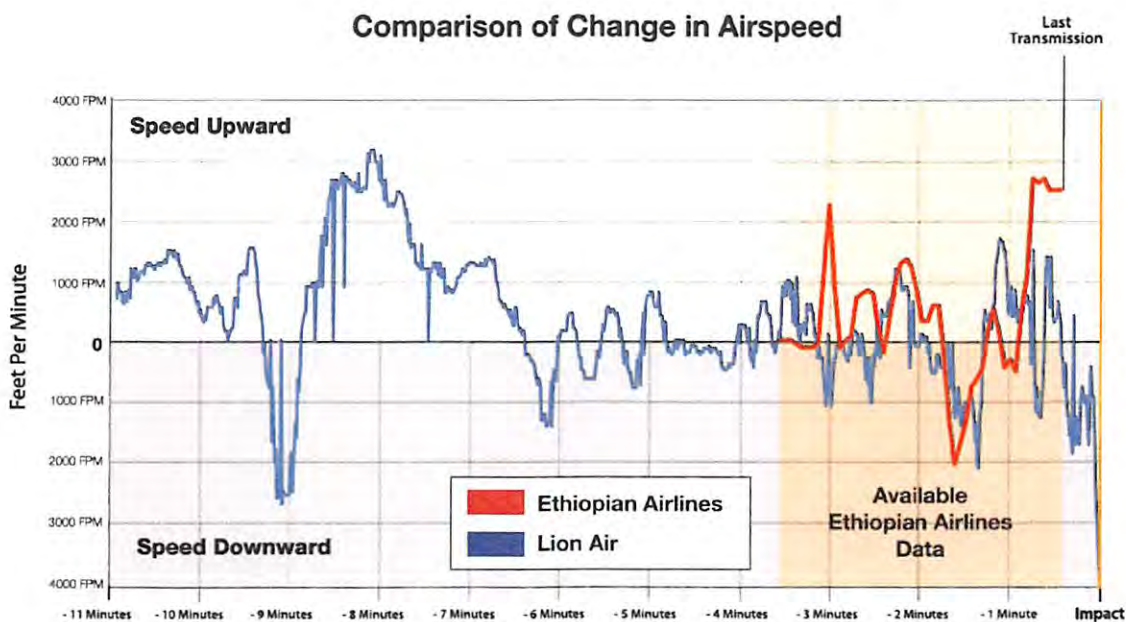


80. The similarity between Flight 302 and the Flight 610 and data released to date suggests that both aircraft experienced an erroneous AOA reading and activation of the MCAS. On Flight 302, the aircraft's nose began to pitch down just 450 feet above the ground. The jack

³¹ See <https://www.vox.com/policy-and-politics/2019/3/13/18263719/boeing-ceo-dennis-muilenburg-trump-tweet-call>

screws from the horizontal tail stabilizer were recovered from both crashes and both showed that the planes had been oriented in a dive with the nose pointing down. Both pilots reported flight control issues and could not maintain a steady altitude or speed with similarly erratic flight paths before crashing.

The following side-by-side comparison reveals the striking similarities between the two doomed aircraft in changes in vertical speed:



81. Regulators finally decided to ground the 737 MAX 8 aircraft in the wake of the Flight 302 crash to allow for a MCAS software upgrade and safety assessment to be conducted. The Department of Transportation, with assistance from the FBI, are now investigating the MAX's certification process, a federal grand jury probe has been empaneled, and Congressional hearings are underway.

BASIS FOR FEDERAL TORT CLAIM LIABILITY

82. CLAIMANT hereby realleges and incorporates by reference each and every allegation above as if fully set forth in detail herein

83. The FTCA authorizes private tort actions against the United States under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. 28 U.S.C. § 1346(b)(1).

84. Here, the acts and/or omissions alleged occurred in Seattle, WA; Chicago, IL; and Washington D.C., whose state laws include tort actions for negligent hiring and training and negligent warning.

85. In regard to when the FAA conducts itself as an employer and trainer, it operates as a private person, and an employer can be held liable in Washington, Illinois, and Washington D.C., for negligent hiring and training.

86. In regard to when the FAA voluntarily takes on the duty to warn the public regarding safety hazards associated with commercial passenger airplanes, it operates as a private person conducting itself as a good Samaritan, and a good Samaritan can be held liable in Washington, Illinois, and Washington D.C. for undertaking good Samaritan duties and then performing said duties negligently, including negligent warnings.

87. The FAA is not entitled to discretionary immunity as an employer, hirer, trainer, and/or warner to the public of safety risks.

88. The FAA negligently, recklessly, and/or unlawfully hired and/or trained its employees, and it knew or should have known that if its employees were unfit to perform and/or could not competently perform their job duties and responsibilities, including implementing and executing inspections and testing of the 737 MAX 8, and that such unfitness and incompetence would foreseeably result in a catastrophic plane crash.

89. The FAA failed to properly review, flight test, and correct the MCAS design deficiencies, especially via proper system safety engineering and pilot review, including integration of all MCAS observations and concerns with FAA flight test pilots so they could test failure modes such as those easily foreseeable such as the single AOA input failure mode experienced by the Lion Air and Ethiopian accident flights.

90. After the initial Lion Air Flight 610 crash, the FAA negligently, recklessly, and/or unlawfully provided misleading warnings to the public, and most importantly to passengers, that severely understated and downplayed the serious known safety risk associated with continued flight of the 737 MAX 8 and characterized the FAA airworthiness directive as a “non-emergency” that would address and fix the known problem, all of which Plaintiffs and other passengers on Flight 302 relied on these media posts by the FAA their detriment, being duped into a false sense of security about riding on a 737 MAX 8.

91. As a direct and legal result of the aforementioned acts and/or omissions, Ethiopian Airlines Flight 302 crashed, killing all onboard, including **DECEDENT**.

92. As a direct and legal result of the aforementioned acts and/or omissions, **CLAIMANT** suffered the damages as set forth below.

DAMAGES

I. SUM CERTAIN REQUIREMENT

As a direct and legal result of the wrongful acts and/or omissions of FAA, **CLAIMANT** has suffered substantial economic and/or non-economic losses and damages as set forth herein and seek to recover all amounts permissible under state or federal law upon proof to the satisfaction of the trier of fact in an amount not to exceed **\$25,000,000.00**.

II. CATEGORIES OF DAMAGE SOUGHT BY CLAIMANT

CLAIMANT seeks the following categories of damages:

As a direct and legal result of the wrongful acts of FAA, **DECEDENT**, by and through her estate, suffered pre-impact injury, including fear of impending and imminent death in an amount to be determined by the trier of fact.

As a direct and legal result of the wrongful acts of FAA, **CLAIMANT** incurred funeral expenses and burial expenses on behalf of **DECEDENT** in an amount to be determined by the trier of fact.

As a direct and legal result of the wrongful acts of **FAA**, **CLAIMANT** has suffered, and will continue to suffer, the loss of love, society, solace, companionship, comfort, care, assistance, protection, affection, society, moral support of **DECEDENT**, as well as other pecuniary damages including grief, sorrow, and mental suffering, in an amount to be determined by the trier of fact.

As a direct and legal result of the wrongful acts of **FAA**, **CLAIMANT** has suffered, and will continue to suffer economic losses, including but not limited to loss of financial support, and/or the loss of household services in an amount to be determined by the trier of fact.

CLAIMANT hereby submits his claim for damages.

Dated: April 29, 2019

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