United States Navy

Biography

Captain Edward F. Pierson

Captain Ed Pierson was born in Washington, DC. He graduated from the U.S. Naval Academy in 1985 with a Bachelor of Science degree. He attended flight school and was designated a Naval Flight Officer in 1986.

Following initial flight training, he reported to Patrol Squadron 11 (VP-11). There he served as a Navigator and Tactical Coordinator flying maritime patrol missions. During this tour he qualified as a P3C Mission Commander, Mine Warfare Officer, and Instructor Tactical Coordinator.

After completing his first tour, Captain Pierson was chosen to serve as a Joint Staff Action Officer at the Pentagon. He gained joint/combined operations experience as a Crisis Action Team member while supporting Operation Desert Storm within the National Military Command Center.

Following his Joint Staff assignment, Captain Pierson was selected to serve as Special Assistant, Bureau of Politico-Military Affairs, U.S. State Department. He later assumed the duties of Crisis Management Officer supporting the State Department's Operations Center where he gained national security affairs, foreign policy development, and defense trade controls experience working inside the interagency process. During this period, Captain Pierson earned a Master of Public Administration degree from George Mason University.

Captain Pierson joined the Navy Reserves at VP-69, NAS Whidbey Island, WA in 1993 where he flew ASW, ASUW, CN, ISR and SAR missions inside the PACOM and SOUTHCOM AORs. As a Department Head and later while serving as VP-69's Executive Officer, Captain Pierson led numerous joint warfare initiatives including the teaching of joint operations and national security affairs at the tactical level. Captain Pierson assumed command of VP-69 in 2003. During his CO tenure, VP-69 was awarded the coveted "Battle E" and "Golden Wrench" awards. Following his CO tour Captain Pierson became an Instructor for the Center for Naval Leadership.

Captain Pierson reported to U.S. Third Fleet in 2007. Captain Pierson held a variety of senior leadership roles at Third Fleet including Air Operations Officer, Battle Watch Captain and Current Operations Director. He assumed command of U.S. Pacific Command's Det 322 in 2010, which transitioned to Det 301, providing direct support to PACOM's J-3 Directorate. At PACOM Captain Pierson qualified as Joint Operations Center (JOC) Director where he was responsible for monitoring the coordinated employment of all naval, ground and air forces in the Pacific theater.

From 2011-2013, CAPT Pierson commanded U.S. Pacific Fleet's Joint Contingency Unit. He provided strategic planning and operations analysis support while successfully integrating ASW, BMD & CYBER operations into a highly effective joint planner training program. During this assignment he was handpicked by USPACOM to represent the U.S. military as JOC Director & lead U.S. Maritime Observer for several highly visible Seventh Fleet international exercises.

Captain Pierson served as Chief Staff Officer for Training, Readiness & Strategic Communication for the Reserve Management Analysis Unit from 2013-2015 within the Office of the Chief of Naval Operations (OPNAV), Pentagon where he led several improvement initiatives including transforming administrative process improvements for 80,000 reservists. Captain Pierson retired in 2015 after 30 years of honorable service.

Captain Pierson's decorations include the Defense Meritorious Service Medal (two awards), Meritorious Service Medal (two awards), Joint Service Commendation Medal, Navy and Marine Corps Commendation Medal, Navy and Marine Corps Achievement Medal, and various unit awards.

Ed Pierson

From: Pierson (US), Ed <[redacted]@boeing.com>
Sent: Wednesday, July 25, 2018 6:57 AM
To: Pierson (US), Ed
Subject: RE: Recovery Operations & Safety Concerns

Follow Up Flag: Follow up
Due By: Tuesday, July 24, 2018 7:00 PM
Flag Status: Flagged

From: Campbell (US), Scott A
Sent: Friday, July 20, 2018 6:49 AM
To: Pierson (US), Ed <[redacted]@boeing.com>
Subject: RE: Recovery Operations & Safety Concerns

Great insight and appreciate you coming to talk with me…already started to make sure our teams are more focused on the boeing behaviors so we don't have those peppered questions any more.

Thanks again
Scott

From: Pierson (US), Ed
Sent: Thursday, July 19, 2018 2:47 PM
To: Campbell (US), Scott A <[redacted]@boeing.com>
Subject: FW: Recovery Operations & Safety Concerns

Scott,

Thanks for meeting with me yesterday to discuss employee & product safety. As we discussed "how" people are talked to has a direct impact on our culture.

If an employee routinely gets peppered with schedule related questions like:

- Why haven't you met your schedule commitment?
- When are you going to be done?
- How come your jobs didn't get completed?
- When are you going to be off the airplane?
- Why didn't your team get the work done?
- Etc.

Combined with fatigue is a potentially dangerous recipe for rushed work & the short circuiting of established processes...as we have seen.

I'm all for personal accountability, however many times the answers to these questions are completely out of the control of that individual employee--parts not available, bottlenecks in our processes, dependency on another employee or team to get their work done & equipment issues just to name a few variables.

If an employee is not performing, there is a proven best practice leadership technique of talking with the employee in private, asking how we can help him/her, provide them additional training, etc. Putting employees on the spot publicly to defend why they are not on schedule is not good for morale or retention. As we

discussed if we are going to ask questions in public they should be questions like how can I help you stay on schedule?, how is your quality?, are you following the process?, does the process need to be changed?, do we need to provide better training?, do you need additional resources? etc.

For several months now we got away from our production standards by not conducting BPS Tier meetings. I'm happy to see we are returning to the tier meetings so this should help with communications.

I appreciate your willingness to look for ways to implement additional OT controls to minimize risks associated with employee fatigue. Pulling the OT data for our union employees to ID the folks that are working way too much is a good idea. Unfortunately this data will not include the huge amount of OT hours managers are routinely putting in, so additional controls are needed.

Finally I appreciate your commitment to ask Quality & Engineering to conduct additional analysis on the defects that were reported in the last quarter to see if there are any potential quality risks that might require us to alert our customers. I recommend this analysis include traveler data because as you know, working out of position makes identifying defects that much more difficult.

Thanks, Ed

Ed Pierson
Line Side Control Senior Manager
Final Assembly & P-8 Program
737 Operations Center Team Member
Click here to provide feedback to Operations Center Team
Bldg 4-81, Renton, WA, MS 9W-08
[redacted]

From: Pierson (US), Ed
Sent: Monday, July 09, 2018 12:47 PM
To: Andrus (US), Marla A <[redacted]@boeing.com>
Subject: FW: Recovery Operations & Safety Concerns

Marla,

I would like to request a 30 min meeting with Scott on the topic of safety. I know he is super busy and my schedule isn't much better. So I'll give you a call tomorrow (Tue) to help find a day/time that might work.

Thanks, Ed

Ed Pierson
Line Side Control Senior Manager
Final Assembly & P-8 Program
737 Operations Center Team Member
Click here to provide feedback to Operations Center Team
Bldg 4-81, Renton, WA, MS 9W-08
[redacted]

From: Pierson (US), Ed
Sent: Sunday, June 10, 2018 10:12 AM
To: Campbell (US), Scott A <[redacted]@boeing.com>
Subject: RE: Recovery Operations & Safety Concerns

Thanks Scott

Ed Pierson
Line Side Control Senior Manager
Final Assembly & P-8 Program
737 Operations Center Team Member
Click here to provide feedback to Operations Center Team
Bldg 4-81, Renton, WA, MS 9W-08
[redacted]

From: Campbell (US), Scott A
Sent: Sunday, June 10, 2018 6:48 AM
To: Pierson (US), Ed [redacted]@boeing.com>
Subject: Re: Recovery Operations & Safety Concerns

Ed some great insight and things we are talking about constantly. We need and will remind everyone constantly that safety and quality is number one and schedule come after that. We are trying to make sure people take the time off so the can recharge...because your right we don't want people coming to work tired. My leadership team and I run daily mtgs on this and I will bring it up today to remind themselves and their teams that safety and quality is the first on our list!

Thanks again
Scott

From: Pierson (US), Ed
Sent: Saturday, June 9, 2018 1:32 PM
To: Campbell (US), Scott A
Subject: Recovery Operations & Safety Concerns

Scott,

I have some safety concerns that I need to share with you as the leader of the 737 Program. I know you care deeply for the safety of our employees and the safety of our products & I trust you will take appropriate action. As you are aware the program is struggling through major recovery operations. Today we have 38 unfinished airplanes located outside the factory. The following concerns are based on my own observations and 30 years of aviation safety experience. I'm including some recommendations because it is important not to just pass along problems.

My first concern is that our workforce is exhausted. Employees are fatigued from having to work at a very high pace for an extended period of time. This obviously causes stress on our employees and their families. Fatigued employees make mistakes. This is especially true when combined with the hazards of unfamiliar environments like working out of position (slips, trips, falls, LOTTO, etc.). As a manager representative on the IAM Joint Programs Site Safety Committee, I know fatigue is frequently listed as a causal factor in serious occupational accidents. It has also become the #1 contributing factor to vehicle accidents.

My second concern is schedule pressure (combined with fatigue) is creating a culture where employees are either deliberately or unconsciously circumventing established processes. These process breakdowns come in a variety of forms adversely impacting quality. For example, making a workmanship mistake, missing an inspection item, not properly completing paperwork or failing to recognize a functional test failure. I fully appreciate the importance of doing our best to meet RO, paint windows, B1s & delivery schedules. But there is a much, much higher risk that we cannot lose sight of. I'm talking about inadvertently imbedding safety hazard(s) into our airplanes. As a retired Naval Officer and former Squadron Commanding Officer, I know how dangerous even the smallest of defects can be to the safety of an airplane. Frankly right now all my internal

warning bells are going off. And for the first time in my life, I'm sorry to say that I'm hesitant about putting my family on a Boeing airplane.

I see that you have scheduled another discussion on Boeing Behaviors on Monday. As you've stated previously, talking about & cheerleading around this topic is not the same as modeling it. I fear serious process breakdowns will continue to occur if we continue pushing our employees to the limit. With this in mind, I'm making the following recommendations:

#1 – Remind everyone that meeting RO, paint windows, B1s & Deliveries is important, but not nearly as important as building the highest quality product and working safely.

#2 – Shut down the production line to allow our team time to regroup so we can safely finish the planes outside and then shift our attention to the planes inside. I don't make this recommendation lightly. I know this would take a lot of planning, but the alternative of rushing the build is far riskier.

Nothing we do is so important that it is worth hurting someone. Thank you for considering my feedback. Ed

Ed Pierson
Line Side Control Senior Manager
Final Assembly & P-8 Program
737 Operations Center Team Member
Click here to provide feedback to Operations Center Team
Bldg 4-81, Renton, WA, MS 9W-08
[redacted]

Dec 19, 2018

Ed Pierson
[redacted]

Mr. Dennis Muilenburg
Chief Executive Officer
The Boeing Company
100 North Riverside
Chicago, Illinois 60606

Mr. Muilenburg:

I am writing this letter to ask for your assistance. Although we have never personally met, I feel like I know you after watching years of ethics training videos. You strike me as an honorable man, someone that would do the right thing even it is painful.

I am a recently retired Boeing employee and have information that may be helpful to the Lion Air Flight 610 accident investigation. I have made repeated efforts to identify and speak with the individual who is the Boeing primary lead. I have provided my name and personal phone number and asked for a return call. Unfortunately, as of this date, I have not received any return phone calls.

I am not trying to disrupt this critically important investigation. As background I worked within the 737 Program at the Renton plant the last 3 years as a Senior Manager. I'm very proud to have worked at Boeing with so many hard-working professionals—many of whom I consider close friends.

I understand Indonesia's National Transportation Safety Committee is leading the investigation into this tragedy and our NTSB, the FAA and Boeing are in support roles. Admittedly the information I need to share isn't favorable to Boeing, but I believe it is very important nonetheless. Most importantly, I believe Boeing is in the best position to address my concerns in the most expedient manner, more so than the FAA, NTSB or NTSC.

Like everyone else I feel horrible for the families of the 189 people that lost their lives. My sole objective is helping to ensure this never happens again. I am specifically asking your assistance to help me get in touch with the Boeing lead. If I am unable to speak with this individual before Jan 7th, then I feel I would have no other choice but to engage the FAA, NTSB or the NTSC. The urgency of this matter is highlighted with the recent emergency landing of the Norwegian 737 MAX in Iran.

Thank you in advance for your assistance. Of course, I am open to talking with you directly if you desire.

Sincerely,

Ed Pierson

Ed Pierson
[redacted]

Ed Pierson

From: Ed Pierson [redacted]
Sent: Friday, February 15, 2019 10:15 AM
To: 'Fennelly (US), Padraic B'
Subject: RE: 737 Program Safety Concerns

Padraic,

Thank you for responding. Unfortunately I don't think this is a sufficient response. Sincerely, Ed

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From: Fennelly (US), Padraic B <Padraic.B.Fennelly@boeing.com>
Sent: Thursday, February 14, 2019 11:26 AM
To: Ed Pierson [redacted]; Luttig (US), Michael <[redacted]@boeing.com>
Subject: RE: 737 Program Safety Concerns

Ed --

I wanted to thank you again for reaching out to us and for raising your concerns about the production challenges on the 737 program last year. And thank you also for taking the time to speak with us about the nature of those concerns. As I know you understand, the safety of our airplanes is of paramount importance to every single person here at Boeing.

As we told you we would, after our last call we shared your concerns with the senior leaders who have direct oversight and responsibility for 737 production and quality. We walked through the issues you raised, in detail, and I can assure you your concerns were taken very seriously. I don't think it will surprise you to learn that ensuring the safety and quality of the 737, including during the recent production challenges, has been the subject of intense focus by BCA.

As I'm sure you know, Boeing closely monitors production quality data, as well as other data related to the overall health of the production system, including, and especially, during periods of disruption like the one experienced last year on the 737 program. Moreover, all of our aircraft are subject to rigorous inspection before they are certified, delivered, and enter into service. Boeing also has access to data concerning the in-service performance and reliability of the 737 fleet. We have seen nothing from any of these sources that would suggest the existence of embedded quality or safety issues, whether or not as a result of the production disruption experienced last year. And I can give you Boeing's assurance that it will continue to closely monitor the production and performance of the 737, as it does for all of its airplanes.

Finally, as to the investigation into the Lion Air incident, rest assured that Boeing is fully supporting the investigation, cooperating with, and under the direction of, the relevant government authorities, including the NTSB, FAA, and NTSC. While that investigation continues, Boeing is strictly prohibited from commenting publicly. I would, however, refer you to the statements and the preliminary report from the investigating authorities for additional information on the incident.

All of us at Boeing share your concern for safety, and, again, we very much appreciate not only your willingness to bring these concerns forward, but also to discuss these concerns with us in detail.

Best regards,

Padraic

From: Ed Pierson [redacted]
Sent: Thursday, February 7, 2019 9:06 AM
To: Luttig (US), Michael <[redacted]@boeing.com>; Fennelly (US), Padraic B <[redacted]@boeing.com>
Subject: RE: 737 Program Safety Concerns

Resending due to transmission error

Judge,

It has been 2 weeks since we last spoke. You encouraged me to call or email you & Padraic if I had any additional questions or thoughts. I appreciate the 2 long conversations we had as a result of my Dec 19th letter to CEO Dennis Muilenburg ref: Lion Air Flight 610 Accident Investigation. I was under the impression you would be getting back to me soon. Please excuse my frustration and the length of this email. From my vantage point the lack of a timely response by the company to serious safety concerns involving the 737 Program, specifically the production of NG, MAX & P-8 airplanes has been disturbing.

I know how swiftly Boeing moves when senior executives, especially the CEO, want to get something done. Resources are made immediately available. Therefore by now, I assume at a minimum you have shared the essence of our phone conversations with the CEO & the 2 technical leads supporting the Lion Air accident investigation (Mike Sinnett & John Hamilton). I also assume a decision has been made whether or not to form a cross functional team to develop a comprehensive, objective assessment of these safety concerns to eliminate the possibility that production problems could have been a root cause to the accident per my recommendation. Additionally and equally important, to ensure other airplanes are not affected as well by these same safety concerns.

If such a team has been formed, they should be well on their way to understanding what was going on within the 737 Program when the Lion Air airplane was being built. Again this is also the same timeframe as the building of the Norwegian 737 airplane that was forced to conduct an emergency landing in Iran. As previously mentioned, I'm willing to share my observations with such a team and to help in any way I can to ensure future tragedies don't occur.

In a good faith effort to be as forthcoming as possible and not knowing if such a team will ever be formed, I want to share my personal observations of the operating environment at the time these airplanes were being built in the Renton factory last year. I'm confident other employees will corroborate these observations. I expressed these concerns to the 737 General Manager in June and July 2018. They include:

Employee Fatigue & Schedule Pressure – Employees worked an excessive amount of extended OT over the course of many months. It is well known that fatigued employees are far more likely to make quality mistakes and to be involved in occupational accidents & near misses. I heard many employees including managers express frustration about how physically tired they were and the impact OT was having on their personal lives. Some employees welcomed the extra money whereas others appeared to wear this as a badge of honor, while still others believed this was an ill-advised effort to produce airplanes. "When are you going to be done, done" was a repeatedly asked question. It was one of many questions used to apply schedule pressure on employees under the guise of holding people personally accountable. In other words this meant how come your crew hasn't finished their jobs and when the heck are you going to be off the plane so others can proceed with their work. This question was oftentimes followed up by "you gave me your word your crew would be off this airplane and they weren't, why not"? Very difficult questions to answer when one factors in all the other variables going on during this timeframe as described below. This relentless schedule pressure was being put on frontline union employees, team leaders and managers by senior management. Understaffed MRB Engineers were also frequently being pressured to process Tags more expeditiously.

Leadership Actions & Inactions – 1st and 2nd line manufacturing managers were peppered with schedule related questions and publicly criticized (berated) during daily status meetings held over the course of many months in the

Town Hall conference room in front of 100+ colleagues. Executives routinely disregarded, bypassed and/or ignored the technical advice of experienced senior managers regarding recovery planning. Efforts to review "Boeing Behaviors" on a daily basis felt shallow and insincere in light of this aggressive communication style. Understandably there were concerns that less experienced managers might model this type of leadership and communication style with their respective teams. In July I specifically asked the GM if he had attended any of these meetings and he said he hadn't.

President McCallister also made what many people felt was a rash decision to immediately implement LSCCs in the 4-81 & 4-82 buildings in 1 week. Reassigning such a large number of employees to the factory floor over such a short period of time without having a clear, agreed upon workflow process added considerable disruption to an already unstable and stressful environment. He made this decision after a weekend site visit & despite the fact there was a cross functional management team working to develop a more seamless implementation plan. There appeared to be absolutely no interest at the executive level in slowing or stopping the production line to give employees and our suppliers the chance to catch up. As I mentioned in our 1st conversation, last June and July I recommended to the 737 GM to stop the production line. In a dismissive manner he told me "we can't do that, I can't do that." I responded by asking "why not, I've seen larger operations shut down for far less safety issues. He challenged me asking "like where?" I responded "in the military and those organizations have national security responsibilities." His response, "well the military isn't a profit making organization."

Quality Issues – QA Inspectors were overloaded with a backlog of inspection requests. There was a shortage of QA inspectors particularly on weekends. Thousands of SATs & hundreds of Tags were piling up. Much higher than normal numbers.

Each SAT represents a quality defect in one of our processes (something is preventing the airplane from being built…damaged parts, missing parts, wrong parts, incomplete build instructions, wrong engineering drawings, equipment missing, equipment not properly working, inspection missing, tool missing, tool needed, etc.). There were plenty of concerns about EWIS compliance. Common problems included wire length issues, connector issues, cannon plug issues, component testing issues, functional test issues, wires chaffed, wires cut, wires pinched, etc. If improperly manufactured, installed or tested wires (electrical & data carrying) can cause intermittent electrical or data errors. We also had plenty of adhesive & electrical bonding/grounding issues going on.

Supply Chain Disruptions – In addition to the widely publicized reports of late deliveries of Spirit fuselages and CFM engines, we had hundreds of other parts that regularly failed to meet load dates from dozens of suppliers. This even included vital parts from internal Boeing suppliers like ESRC & TDRC (e.g., power panels and tubing).

Staffing Constraints – Reports of inadequate number of manufacturing employees and not enough qualified specialists (e.g., electricians, CSMS technicians, QA inspectors). Electrical and CSMS 1st line managers that were consistently pressed to commit to finishing their functional tests were simultaneously pleading for additional qualified resources. In some situations staffing relief was provided whereas in other cases it didn't come or didn't come fast enough. Besides pulling P-8 employees from the P-8 line, hundreds of new employees were added from Everett in the midst of these major recovery operations requiring onboarding assistance and job training. This placed additional burdens on overworked team leaders, crews and managers. Throwing more bodies at the problem didn't seem to help during this timeframe.

Process Deviations – We moved away from standard LMS processes outlined in the 737 Production System Handbook. This was readily apparent with the sudden cancellation of all daily LMS tiered meetings (crew, TL and 1st line manager meetings). These daily tiered meetings served as an important communication backbone allowing crews to review work completed or not completed on the last shift, work needed to be completed, resource requirements, SATs/Tags, etc. Business review meetings were also routinely cancelled which limited the transfer of time-sensitive feedback from compliance audits.

Communication breakdowns – Stripped of these recurring LMS tiered meetings, crews and managers struggled to effectively communicate especially across shifts. There were numerous failures in the use of existing shift to shift

technology to document important turnover information. Instead the new daily status meetings held in the Town Hall Conference Room relied on the use of hundreds of different colored hand written sticky notes, different colored ink, and individual airplane schedules plastered all over the walls. This proved to be very confusing to many people and it was hardly indicative of a world class manufacturing facility.

Safety Incidents – There were a large number of high hazard safety incidents. Having so many employees working away from their normal work location introduced many new hazards (e.g., fall, electrical, hydraulic, etc.). Of course since employees were working such long hours to get the job done, there also seemed to be a reluctance in submitting near miss reports—it was just going to add more work on the part of the person submitting the report.

Functional Test Delays & Failures – All the out of position work largely driven by supply chain problems led to large numbers of Oil On, Power On, EWIS, HIRF & CSMS test delays/failures exacerbating the workload of functional test employees.

Facility Limitations – Because we had so many unfinished airplanes we ran out of available airplane parking spaces. Handicap, manager and executive parking spaces were rapidly converted to airplane parking spots. Some of the sites didn't have adequate airplane grounding adding additional hazards. We were also severely space constrained and didn't have enough space for the storage of wings that were being produced while we waited for fuselages to arrive. So wings were squeezed into different areas in the factory creating additional head and eye hazards.

Equipment Shortcomings – Not enough hydraulic mules, CSMS carts, Power carts, etc. inside and outside the factory and on the flight line. Sensitive test equipment was subjected to damage due to all the transportation movements. Some electrical equipment was also left out in the rain.

Recovery Planning Efforts – IEs were repeatedly tasked to produce and reproduce an inordinate amount of recovery plans, burn down plans, data reports, etc. There seemed to be an unquenchable desire to produce a wide variety of complex reports on the personal whim of a single executive, usually on very short notice. This put a significant drain on IE resources that were also trying to help their respective shops.

Deteriorating Factory Health Metrics – Every single metric used to ascertain factory health was getting record low marks. This included Factory Jobs Behind Schedule (>10 x normal), Average Jobs Behind Schedule per airplane, Travelers, SATs, Tags and Call Board requests. Not surprisingly the higher OT drove higher build costs. We had a lot more airplanes waiting to be finished outside the factory then we had inside the factory being built. Large amounts of incomplete jobs were also dropped on our Preflight crews.

Most of these production problems are not unusual. Employees are usually able to overcome these challenges following standardized processes with leadership support. Taken as a whole, the sheer volume of these issues highlights the considerable & unnecessary risk the company was (is still?) taking to meet ever increasing airplane production rates and delivery schedules. Employees with 20+ years 737 experience stated they had never seen the production system in such bad shape. As you stated, leaders based in Chicago were aware of these recovery issues. Nonetheless being aware of these problems and fixing them are two completely different matters. Just because an airplane flies safely one day doesn't mean it will fly safely the next. This is the insidious nature of imbedded defects. Although I can't speak from firsthand experience now, based on investor reports I believe there is a high probability many of these problems & associated risks are still occurring. Record numbers of airplanes delivered makes for good headlines, but they can belie the reality of production health.

Again to be very clear, I'm not saying anyone did anything deliberate to jeopardize the Lion Air airplane. What I am saying is production mistakes may have been made with this airplane and potentially others, due to the reasons outlined above. I believe Boeing has a duty to proactively support the accident investigation. I can't help but wonder what Boeing's response would be if this had been a U.S. airline accident. I know there are billions of dollars at stake in the contract between Boeing & Lion Air. I'm confident Boeing has the resources to fix these problems. The question is whether or not there is the ethical leadership and will to set aside pride and potential liabilities to get to the truth.

Sincerely, Ed Pierson

From: Ed Pierson <[redacted]
Sent: Tuesday, January 22, 2019 3:50 PM
To: '[redacted]@boeing.com' [redacted]@boeing.com>; '[redacted]@boeing.com' <[redacted]@boeing.com>
Subject: RE: 737 Program Safety Concerns

Judge & Padraic,

Thank you for the teleconference today. I understand you will be talking with some of your colleagues and will get back in touch with me. This is obviously an ongoing urgent matter—it was urgent last summer made even more urgent this fall. I would like to make a recommendation and a request:

Recommendation: As we discussed, looking at program level metrics provides an important, but limited view of what was (is?) going on inside the 737 Program. Forming a cross functional NAR team to conduct an objective, comprehensive assessment of what occurred last year and the current state of the program, would provide an even more important view. This assessment would need to include the analysis of production related data (e.g., quality data) and talking with employees. If such a course of action were to be taken, it would be crucial to talk with frontline employees, union leaders and 1st level managers—not just senior management. This in turn should provide clarity on follow-up actions that need to be taken. Of course such a team would also need to be properly resourced and operate with the full support of the CEO. I have great faith in Boeing employees.

Request: Please provide an estimate of when you will be able to get back in touch with me. Thanks, Ed

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From: Ed Pierson <[redacted]
Sent: Monday, January 21, 2019 8:03 PM
To: '[redacted]boeing.com>; [redacted]' <[redacted]@boeing.com>
Subject: 737 Program Safety Concerns

Judge & Padraic,

FYI. Ref: Tuesday's teleconference. Ed

Feb 19, 2019

Boeing Board of Directors
Office of the Corporate Secretary
Boeing Corporate Offices
100 N. Riverside Plaza MC5003-1001
Chicago, IL 60606-1596

Corporate Secretary:

Please distribute the attached letters to the Board of Directors. I have made copies for each Board member. Thank you.

Sincerely,

Ed Pierson

cc: Robert A. Bradway
David L. Calhoun
Arthur D. Collins Jr.
Kenneth M. Duberstein
Admiral Edmund P. Giambastiani Jr.
Lynn J. Good
Lawrence W. Kellner
Caroline B. Kennedy
Edward M. Liddy
Susan C. Schwab
Ronald A. Williams
Mike S. Zafirovski

Feb 19, 2019

Boeing Board of Directors
Office of the Corporate Secretary
Boeing Corporate Offices
100 N. Riverside Plaza MC5003-1001
Chicago, IL 60606-1596

Board of Directors:

My name is Ed Pierson. I am a recently retired Boeing employee. In my last assignment I served as a Senior Manager, Production System Support within the 737 Program in Renton, Washington. I'm writing to ask for your assistance on what I believe is an urgent matter.

Last year in June and July 2018, I tried unsuccessfully to stop the production of 737 NG, MAX & P-8 airplanes due to product and worker safety concerns (Encl. #1).

On Aug 13, 2018 Lion Air took delivery of a 737-8 MAX airplane. On Oct 29, 2018 this new airplane crashed off the coast of Indonesia killing 189 people. The accident is still under investigation. The investigation is being led by Indonesia's National Transportation Safety Committee (NTSC). Boeing is supporting this investigation along with the NTSB and FAA.

The NTSC published a Preliminary Aircraft Accident Investigation Report on Nov 28, 2018. The preliminary investigation and associated news reports make no mention of the possibility a production problem could have been a contributing factor. I pray this was not the case, but given the state of the 737 Program at the time this airplane and others were built, it needs to be thoroughly investigated. For this reason, I attempted unsuccessfully on multiple occasions to contact the Boeing employee(s) supporting the NTSC's investigation in early December to share information that I believe might be helpful to the investigation.

On Dec 14, 2018 a Norwegian 737-8 MAX airplane made an emergency landing in Iran reportedly due to engine problems. On Dec 19, 2018 I sent a letter to Boeing's CEO (Encl. #2).

On Jan 7, 2019 Boeing's General Counsel contacted me on behalf of the CEO in response to my letter. We had a follow-up conversation on Jan 22, 2019 with BCA's Assistant General Counsel. At the conclusion of this last conversation, the General Counsels promised to follow-up and to get back in touch with me.

I made the same recommendation to the attorneys that I would have made to the Boeing technical employees supporting the investigation had I been afforded the opportunity to talk with them directly. I recommended the forming of a cross functional team of subject matter experts to conduct a comprehensive, objective assessment of

these safety concerns to eliminate the possibility that production problems could have been a contributing factor in the accident. I also requested an estimate of when they would be able to get back in touch with me, but did not get a response. On Feb 7, 2019 I wrote a detailed email outlining my observations of the production environment at the time the Lion Air, Norwegian and other NG, MAX & P-8 airplanes were being built last year. On Feb 14, 2019 the Assistant General Counsel responded (Encl. 3) to my email stating:

> "...we shared your concerns with the senior leaders who have direct oversight and responsibility for 737 production and quality. We walked through the issues you raised, in detail, and I can assure you your concerns were taken very seriously. I don't think it will surprise you to learn that ensuring the safety and quality of the 737, including during the recent production challenges, has been the subject of intense focus by BCA."

The Assistant General Counsel goes on to say:

> "...Boeing closely monitors production quality data, as well as other data related to the overall health of the production system, including, and especially, during periods of disruption like the one experienced last year on the 737 program. Moreover, all of our aircraft are subject to rigorous inspection before they are certified, delivered, and enter into service. Boeing also has access to data concerning the in-service performance and reliability of the 737 fleet. We have seen nothing from any of these sources that would suggest the existence of embedded quality or safety issues, whether or not as a result of the production disruption experienced last year."

Regrettably, despite program oversight, monitoring of production quality data, post production procedures, and the monitoring of in-service performance, something obviously went seriously wrong with both the Lion Air and Norwegian airplanes. The seriousness of these issues combined with a possible connection to the tragic loss of 189 lives warrants more than just a walk through with executives. The senior leaders who were responsible for 737 oversight were the same individuals that oversaw the production system deteriorate to the point described in my Feb 7, 2019 email and presumably are the same individuals that are still dealing with production system health issues, recovery operations and supply chain challenges mentioned in investor reports. It is worth noting the current 737 General Manager was not in the 737 Program at the time these airplanes were being built, so he cannot speak with firsthand knowledge.

Was this a comprehensive, objective assessment by the General Counsels on behalf of the CEO? What about talking with frontline employees like IAM members, shop stewards, Team Leaders, 1st & 2nd line managers per the recommendation? Certainly, their perspectives would provide a more well-rounded picture. I counted approximately 35 assertions in my Feb 7, 2019 email. How many of them were checked out and corroborated to have occurred during the building of the Lion Air and Norwegian Air airplanes? Are they still occurring? Did this walk-through effort by the attorneys (which

lasted no more than 5 business days) include an analysis of production health and quality related data? Or, was the walk through conducted over the course of a single meeting or a couple meetings? Did anyone talk to our commercial and defense customers to see if they are having any maintenance or spare parts acquisition issues with these airplanes that might be indicative of production problems? At what point does chronic, abnormal production operations become normal operations?

Candidly, there remains many serious unanswered questions. For these reasons, I ask the Board of Directors' assistance in your corporate governance and oversight role to ensure:

a). the details of these safety concerns as outlined in my Feb 7, 2019 email are discussed with the Board of Directors and does not stop at the CEO or General Counsel levels;

b). an independent assessment of the 737 Program is conducted per the recommendation outlined in my Jan 22, 2019 email, to include taking appropriate follow-up actions as required—such as asking customers to conduct inspections of in-service airplanes and developing agreed upon criteria for stopping the production system in the future to mitigate risk;

c). the results of items a & b are shared with the appropriate Lion Air accident investigation authorities at Boeing, FAA, NTSB & NTSC;

d). Boeing confirms with me these actions have been taken NLT Apr 15, 2019. I fully realize Boeing is not obligated to take these actions or get back in touch with me. However, absent such a confirmation, I will be left to assume these actions were not taken and will be forced to pursue another course of action.

I believe these are reasonable expectations with a reasonable deadline. I have no interest in scaring the public or wasting anyone's time. I also don't want to wake up one morning and hear about another tragedy and have personal regrets. Of course, this is something no one wants to happen. For what it is worth, if requested I would make myself available to the Board to answer any questions or provide additional information.

I'm trying to give Boeing every opportunity to do the right thing because only Boeing can fix these internal problems. We owe it to the families devastated by the Lion Air accident, our employees, stockholders and the people that continue to trust their lives with Boeing airplanes around the world.

Sincerely,

Ed Pierson
[redacted]

Enclosures:
#1 Emails to Boeing 737 Vice President & General Manager
#2 Letter to Boeing Chairman, President & CEO
#3 Emails to Boeing General Counsel & Assistant General Counsel

cc: Robert A. Bradway
David L. Calhoun
Arthur D. Collins Jr.
Kenneth M. Duberstein
Admiral Edmund P. Giambastiani Jr.
Lynn J. Good
Lawrence W. Kellner
Caroline B. Kennedy
Edward M. Liddy
Susan C. Schwab
Ronald A. Williams
Mike S. Zafirovski

Mar 12, 2019

Boeing Board of Directors
Office of the Corporate Secretary
Boeing Corporate Offices
100 N. Riverside Plaza MC5003-1001
Chicago, IL 60606-1596

Board of Directors:

On February 19, 2019 I wrote the Board requesting urgent actions be taken to address safety concerns potentially relating to the Lion Air accident and to rule out risks to other 737 airplanes manufactured during the same timeframe. This communication followed what I believe to be an insufficient response to the Dec 19, 2018 letter I sent the CEO and follow-up conversations with the General Counsels. Due to ongoing public health & safety concerns, I gave Boeing a deadline to confirm these actions had been taken. In my opinion these safety concerns came about as a result of senior leadership actions/inactions, schedule pressure, overworked employees, understaffing, process deviations, supplier and quality issues. These issues are outlined in the enclosures in my Feb 19th letter.

Sadly, the urgency is now even greater as a result of this week's horrible Ethiopian Airlines crash. Although the MAX airplane is rightfully the subject of intense focus right now due to these accidents, it is critically important to note other 737 airplanes were built at the same Renton, WA site during the same timeframe. This includes 737 Next Gen (NG) and P-8 airplanes. Most people are unaware these different versions of the 737 are built at the same site.

I'm very proud to have worked at Boeing and truly believe these issues are all fixable. However, I'm not proud of the way Boeing has handled this matter. I have offered to help the company identify and address these issues both as an employee and as a retiree. This offer still stands. As a courtesy and in an effort to be as transparent as possible, I want the company to know that I intend to engage the NTSB and FAA directly. At this point I now believe this is a faster course of action to improve aviation safety.

In the meantime, I strongly recommend expanding whatever internal investigation is going on to include the production of all 737 airplanes manufactured at the Renton, WA site during the timeframe these airplanes were built, including the 737 Next Gen (NG) and P-8 airplanes.

Sincerely,

Ed Pierson

Ed Pierson
[redacted]

cc: Robert A. Bradway
David L. Calhoun
Arthur D. Collins Jr.
Kenneth M. Duberstein
Admiral Edmund P. Giambastiani Jr.
Lynn J. Good
Lawrence W. Kellner
Caroline B. Kennedy
Edward M. Liddy
Susan C. Schwab
Ronald A. Williams
Mike S. Zafirovski
J. Michael Luttig
Dennis A. Muilenburg

Jun 26, 2019

Mr. Lovell,

Below are 12 key points I want to leave you with from today's interview (6/26/19). These points augment our discussion today and the information previously provided in the documents sent to you on my behalf by my attorneys. Thank you, Ed Pierson

Key Points

1. The 737 manufacturing facility (737 Plant) in Renton, Washington was in horrible shape when the Lion Air 737-8 MAX airplane was manufactured there last summer (2018).
2. In June and July 2018 (prior to the Lion Air accident), I expressed serious concerns about the quality and safety of the airplanes being built in the factory to the 737 General Manager and recommended the shutting down of the manufacturing line. He refused to do this.
3. I made additional recommendations including reducing the amount of overtime (OT) on IAM employees and analyzing engineering and quality data to determine if there were any potential quality risks that might require us to alert our customers. I don't know if the 737 GM carried out these recommendations.
4. The Ethiopian airplane was built just a few months after the Indonesian airplane at the same Renton, Washington factory. (Prior to the Ethiopian Accident I had written Boeing's CEO & Board of Directors).
5. There is plenty of evidence in the form of media reports, factory metrics, industrial engineering reports, supply chain reports, process monitoring reports, and manufacturing quality data that show just how chaotic the manufacturing environment was in 2018 (still is?). This information and data should be made immediately available to both the Indonesian and Ethiopian accident investigation teams.
    a. Data sources include factory metrics like Jobs Behind Schedule, SATs, Tags, Squawks, Shift to Shift Turnover Notes, Daily Missing Parts Reports, Compliance Audits, OT, etc. Many factory processes were clearly unstable. A complete list of data sources can be provided upon request.
6. During this same period in 2018, 737 executives placed extreme and unreasonable schedule pressure on understaffed factory workers to expedite work in order to produce more airplanes (still going on?).
7. A tremendous amount of OT was performed by hundreds of employees over many months.
8. There was evidence of fatigue from the mechanics, electricians, technicians, QA inspectors, managers and other employees from all the OT and what had now become chronic schedule recovery operations.
9. There is ample data (SAT reports, Tags, shift turnover notes, etc.) confirming the large amount of "out of sequence" work and process breakdowns that resulted in rushed & sloppy workmanship. This quality management is inconsistent with Boeing's Production Certificate and FAA Order 8120.2G.
10. Manufacturing issues that were occurring while these 2 airplanes were being built could be contributing factors to the accidents. The past and current state of the factory needs to be thoroughly investigated by both investigation teams. These teams should be afforded the opportunity to talk with employees to get a well-rounded picture of the operating environment at the time these airplanes were built.
    a. Examples: late work; electrical wiring EWIS issues; key electrical parts that regularly missed planned installation dates like engines, power panels & wire bundles; functional test issues with electrical, HIRF & CSMS testing; inadequate staffing; not enough qualified employees like electricians, technicians and engine mechanics, & test equipment availability problems.
    b. IAM mechanics, electricians, quality inspectors and first line managers that built these airplanes who were placed under this misguided schedule pressure by executives should be interviewed.
11. Important flight control questions (that may be related to manufacturing issues) have yet to be answered, at least in public. For example, why did the AOA Sensors fail in the first place? Were the sensors improperly designed? Manufactured incorrectly? Installed incorrectly? Tested incorrectly? A potential bird strike on the Ethiopian airline does not explain the other flights. Since the AOA Sensors did fail as evidenced by the faulty data output, how come Boeing and the FAA have not directed airlines to inspect and if necessary, replace/fix the sensors on 737 airplanes currently in-service around the world?
12. Chronic manufacturing problems that occurred in 2018 at the 737 plant (ref: the documents you acknowledged receipt on 6/4/19) could potentially lead to future 737 MAX, NG or P-8 accidents. If any of these problems are still occurring within the factory, they must be fixed immediately.

Eric Havian
Partner
[redacted]

June 28, 2019

BY FEDEX

Honorable Robert L. Sumwalt
Chairman, National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

Re: Whistleblower Information Regarding Boeing 737 Production Concerns and 737 MAX Crashes

Dear Chairman Sumwalt:

We represent Ed Pierson, a recently retired Boeing Senior Manager who possesses significant information regarding the alarming state of Boeing's 737 Renton, Washington factory in 2018. Mr. Pierson worked within the Production System Support organization and was responsible for overseeing production support for 737 Final Assembly and P-8 manufacturing operations. In 2018 Boeing manufactured hundreds of aircraft at the Renton factory, including both 737 MAX planes that crashed within the last year. Mr. Pierson is gravely concerned the chaotic and rapidly deteriorating factory conditions may have contributed to these tragic crashes and the flying public will remain at risk unless this unstable production environment is rigorously investigated and ruled out as a contributing factor.

Mr. Pierson's concerns are underscored by the fact, according to publicly available information, that no firm determination has yet been made about the root cause(s) of the faulty Angle of Attack (AOA) sensors that contributed to both accidents. These devices have a long history of reliability, and it is alarming these sensors failed on multiple flights with two failures resulting in fatal crashes—just a few months after both airplanes were manufactured. Accordingly, the accident investigation teams should aggressively investigate the 737 factory to determine if manufacturing errors could be probable causes contributing to the faulty AOA performance on both aircraft.

The enclosed binder provides documentary evidence that details and substantiates Mr. Pierson's concerns about 737 MAX production. These documents include Mr. Pierson's recommendation in June 2018—four months before the first crash—to "[s]hut down the production line to allow our team time to regroup so we can safely finish the planes." Alarmed by numerous metrics showing a dramatic decline in the factory's performance and an unprecedented number of production errors, Mr. Pierson also recommended a thorough engineering and quality analysis to determine if potential risks might need to be communicated to Boeing customers. Mr. Pierson

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reported his concerns directly to the senior leadership of Boeing's 737 Airplane Program, but Boeing rejected his recommendations.

After Mr. Pierson left Boeing in August, the Lion Air crash confirmed his worst fears. Despite his retirement, Mr. Pierson wrote to Boeing's CEO and later to Boeing's Board of Directors reiterating and amplifying his manufacturing concerns, requesting their assistance in contacting the Boeing employees supporting the Lion Air accident investigation, and proposing urgent action to determine if manufacturing problems contributed to the accident. Boeing's General Counsel spoke with Mr. Pierson on several occasions, eventually asking for Mr. Pierson's recommendations. Mr. Pierson insisted again that the production line be stopped and the operating environment within the factory be investigated. Once again, Boeing took no action and declined to shut down production. The tragic Ethiopian Airlines accident followed.

Mr. Pierson next brought his concerns to numerous Federal agencies including the NTSB. Initially, the NTSB ignored Mr. Pierson's communications. After months of effort, Mr. Pierson finally spoke with an NTSB investigator assigned to the Ethiopian Airlines crash on June 26, 2019. However, Mr. Pierson's information is not limited to the Ethiopian Airlines crash. To the contrary, it concerns hundreds of aircraft manufactured over many months, including not only the Lion Air plane but also numerous other planes that have experienced significant safety incidents.

Mr. Pierson's experience with the NTSB suggests its investigators may be ill-positioned to communicate his information about Boeing's manufacturing conditions to persons with the appropriate level of authority to thoroughly investigate the extent to which those conditions may have contributed to the two accidents and may also risk future 737 accidents. Having repeatedly raised the alarm at Boeing and been ignored each time, Mr. Pierson is justifiably worried the NTSB's reluctance to interview him may signal the agency shares Boeing's aversion to exploring systemic causes for the crashes.

As the Chairman of the NTSB's Board, you are best-positioned to ensure the Indonesian and Ethiopian Investigators-in-Charge and their respective investigative teams have an appropriate opportunity to thoroughly investigate the manufacturing conditions and records at the Renton, Washington factory. As a data-driven and fact-based organization, the NTSB, in concert with the international investigative teams, should be very interested in analyzing the engineering and quality data and manufacturing history of these airplanes. To facilitate such an investigation, Mr. Pierson has provided a list of manufacturing data sources and records, as well as a list of serious incidents involving other 737 MAX planes. Upon request, Mr. Pierson can also identify numerous witnesses that would corroborate his information regarding the factory environment. All of this information should also be shared with the investigative teams.

Finally, we wish to emphasize that Mr. Pierson is not an alarmist. He has held numerous leadership positions in both the public and private sectors. He honorably served in the military for 30 years

to include serving as a Squadron Commanding Officer. But even to Mr. Pierson, the state of the Renton factory was undeniably alarming. He believes that any investigation into the 737 MAX crashes and the long-term safety of aircraft manufactured at the Renton site must include a rigorous examination of the dangerously unstable production environment he witnessed first-hand as a senior manager.

We appreciate your attention to these exceedingly serious issues and trust you will give Mr. Pierson's concerns the due consideration they deserve. We request you share all the information he has voluntarily provided to the NTSB with the Indonesian and Ethiopian Investigators-In-Charge, as well as with appropriate U.S. agencies. Please confirm whether you have reviewed Mr. Pierson's information and shared it with the appropriate stakeholders by July 12.

We look forward to hearing from you soon. Mr. Pierson is eager to assist your investigation in any way possible.

Sincerely,

Eric Havian

cc: Bruce Landsberg, Jennifer Homendy, and Earl F. Weener

National Transportation Safety Board
Washington, DC 20594

Office of the Managing Director

August 6, 2019

Mr. Eric Havian
Constantine Cannon LLP
150 California St., Ste. 1600
San Francisco, CA 94111

Dear Mr. Havian:

This is in response to your June 28, 2019, letter regarding the "whistleblower" information provided by your client, related to the production of the Boeing 737 aircraft; specifically, the potential impact of poor factory conditions on the production of the 737 MAX.

To provide you some background, the NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in the other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters. The NTSB derives this authority from Title 49 *United States Code* Chapter 11.

Your client's concerns fall outside the scope of the NTSB's role in the 737 MAX accident investigations. We are serving solely as an accredited representative to the Indonesian and Ethiopian investigations under Annex 13 of the International Civil Aviation Convention and are not independently investigating either accident.

One of the NTSB's accredited representatives received your information by phone a few weeks ago, which is consistent with the written materials you sent with your letter. He has reviewed the information in the context of the ongoing investigations and will contact you if he has any questions.

We suggest that you contact the Office of the Inspector General at the US Department of Transportation, if you have not already done so.

Sincerely,

Sharon W. Bryson

Sharon W. Bryson
Managing Director

59528

Eric Havian
Partner
[redacted]

September 17, 2019

BY FEDEX

Honorable Elaine L. Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Re: Whistleblower Information Regarding Boeing 737 Production Concerns and 737 MAX Crashes

Dear Secretary Chao:

We represent Ed Pierson, a recently retired Boeing Senior Manager who possesses significant information regarding the alarming state of Boeing's 737 Renton, Washington factory in 2018. Enclosed please find a letter to FAA Administrator Steve Dickson regarding Mr. Pierson's concerns over the chaotic and rapidly deteriorating conditions at the Renton factory, as well as a binder providing evidence that details and substantiates Mr. Pierson's concerns

We appreciate your attention to these exceedingly serious issues and hope that you will give Mr. Pierson's concerns the consideration they deserve.

Sincerely,

Eric Havian

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Eric Havian
Partner
[redacted]

September 17, 2019

BY FEDEX

Honorable Steve Dickson
Administrator, Federal Aviation Administration
800 Independence Ave., SW
Washington, DC 20591

Re: Whistleblower Information Regarding Boeing 737 Production Concerns and 737 MAX Crashes

Dear Mr. Dickson:

We represent Ed Pierson, a recently retired Boeing Senior Manager who possesses significant information regarding the alarming state of Boeing's 737 Renton, Washington factory in 2018. Mr. Pierson worked within the Production System Support organization and was responsible for overseeing production support for 737 Final Assembly and P-8 manufacturing operations. In 2018 Boeing manufactured hundreds of aircraft at the Renton factory, including both 737 MAX planes that crashed within the last year. Mr. Pierson is gravely concerned that chaotic and rapidly deteriorating factory conditions may have contributed to these tragic crashes and the flying public will remain at risk unless this unstable production environment is rigorously investigated and remedied. As you know, FAA production certification is an integral part of the airplane certification program.

Mr. Pierson's concerns are underscored by the fact, according to publicly available information, that no firm determination has yet been made about the root cause(s) of the faulty Angle of Attack (AOA) Sensors that contributed to both accidents. These devices have a long history of reliability, and it is alarming these sensors failed on multiple flights with two failures resulting in fatal crashes—just a few months after both airplanes were manufactured. The AOA Sensors failed for a reason. Did they fail because they were designed, manufactured, installed, or tested incorrectly? Each of these areas fall under Boeing's manufacturing responsibilities. Simply stating the AOA Sensors sent faulty information to MCAS is a woefully inadequate and evasive conclusion. We suspect this may partially explain why EASA and other international regulators are still understandably concerned about AOA Sensor integrity.

Mr. Pierson's concerns, however, are not limited to the AOA sensors or these tragic crashes. To the contrary, they extend to hundreds of aircraft manufactured over many months, including numerous other planes that have experienced significant safety incidents. For example, there

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have been at least thirteen other incidents involving new MAX airplanes all produced from the same factory during a fourteen-month timeframe. In fact, one of these airplanes was only one month old. The flying public is completely unaware of these other incidents.

The enclosed binder provides documentary evidence that details and substantiates Mr. Pierson's concerns about the 737 MAX production environment and depicts a disturbing sequence of events currently unknown to the public. These documents include Mr. Pierson's recommendation in June 2018—four months before the first crash—to "[s]hut down the production line to allow our team time to regroup so we can safely finish the planes." Alarmed by numerous metrics showing a dramatic decline in the factory's performance and an unprecedented number of production issues, Mr. Pierson also recommended a thorough engineering and quality analysis to determine if potential risks might need to be communicated to Boeing customers. Mr. Pierson reported his concerns directly to the senior leadership of Boeing's 737 Airplane Program, but Boeing rejected his recommendations.

After Mr. Pierson left Boeing in August, the Lion Air crash confirmed his worst fears. Despite his retirement, Mr. Pierson wrote to Boeing's CEO and later to Boeing's Board of Directors reiterating and amplifying his manufacturing concerns, requesting their assistance in contacting the Boeing employees supporting the Lion Air accident investigation, and proposing urgent action be taken to determine if manufacturing problems contributed to the accident. Boeing's General Counsel spoke with Mr. Pierson on several occasions, eventually asking for Mr. Pierson's recommendations. Mr. Pierson insisted again the production line be stopped and the operating environment within the factory be investigated. Once again, Boeing took no action and declined to shut down production. The tragic Ethiopian Airlines accident followed.

Mr. Pierson next worked tirelessly to bring his concerns to the attention of the accident investigation teams and numerous Federal agencies, including the National Transportation Safety Board (NTSB), the Department of Transportation's Office of Inspector General, and the Department of Justice. After months of effort and unexplainable delays, Mr. Pierson was finally interviewed by an NTSB investigator assigned to the Ethiopian Airlines crash on June 26, 2019. Following that conversation, I wrote directly to NTSB Chairman Robert Sumwalt on June 28, 2019 on behalf of Mr. Pierson and requested the NTSB share all the information he voluntarily provided to the NTSB with the Indonesian and Ethiopian Investigators-In-Charge, as well as with appropriate U.S. agencies.

On August 19, 2019 I received a written response from the NTSB's Managing Director to my June 28 letter stating that "Your client's concerns fall outside the scope of the NTSB's role in the 737 MAX accident investigations." The NTSB's determination that Mr. Pierson's production concerns are "outside the scope" of the international accident investigations is truly bewildering. Accident investigators routinely review maintenance and training records going

back years. And yet, two new airplanes crash just months after they were built, and the NTSB unilaterally deems the chaotic and unstable production environment in which they were made to be outside the scope of the accident investigations? We doubt the Indonesian and Ethiopian investigators and international regulators would agree with this determination.

We believe as the new leader of the FAA you may be completely unaware of the facts enclosed in the attached documents. Because the NTSB has not confirmed this information has been shared, we are now sharing these documents with you directly. We ask that you review them carefully, paying particular attention to the timeline and chronology of events. We request you share all this information with the FAA representatives on the two accident investigation teams and the Indonesian and Ethiopian Investigators-in-Charge.

As a data-driven and fact-based organization, the FAA, in concert with the other investigative teams, should be very interested in analyzing the engineering and quality data and manufacturing history of these airplanes. To facilitate such an investigation, Mr. Pierson has provided a list of manufacturing data sources and records, as well as the list of serious incidents involving other 737 MAX planes. Upon request, Mr. Pierson can also identify numerous witnesses that would be able to corroborate his information regarding the factory environment.

Finally, we wish to emphasize that Mr. Pierson is not an alarmist. He has held numerous leadership positions in both the public and private sectors. He honorably served in the military for 30 years to include serving as a Squadron Commanding Officer. But even to Mr. Pierson, the state of the Renton factory was undeniably alarming. He believes that any investigation into the 737 MAX crashes and the long-term safety of aircraft manufactured at the Renton site must include a rigorous examination of the dangerously unstable production environment he witnessed first-hand as a senior manager.

We appreciate your attention to these exceedingly serious issues. Mr. Pierson was heartened by your commitment during your swearing-in remarks to follow the facts, and we trust you will give Mr. Pierson's concerns the due consideration they deserve. Please confirm whether you have reviewed Mr. Pierson's information and shared it with the appropriate stakeholders by September 30th. Mr. Pierson is eager to assist the investigation in any way possible.

Sincerely,

Eric Havian

cc: Elaine L. Chao, U.S. Secretary of Transportation
Arjun Garg, FAA General Counsel
H. Clayton Foushee, Director, FAA Office of Audit and Evaluation

Eric Havian
Partner
[redacted]

October 14, 2019

BY FEDEX

Honorable Steve Dickson
Administrator, Federal Aviation Administration
800 Independence Ave., SW
Washington, DC 20591

Re: Whistleblower Information Regarding Boeing 737 Production Concerns and 737 MAX Crashes

Dear Mr. Dickson:

On September 17, 2019, we sent you a letter requesting your assistance in connection with the alarming state of Boeing's 737 Renton, Washington factory in 2018, and the possible connection between the chaotic factory conditions and the tragic 737 MAX crashes that killed hundreds of people. In response to the letter, we have received the following communications from the FAA:

1. A voicemail message from Clay Foushee, FAA Director of Audit & Evaluation (since the voicemail, Mr. Foushee has not returned our calls)
2. An automated email from the FAA Hotline on October 1, 2019 with subject line "S20190930021 Safety Hotline - Acknowledgement Ltr"
3. An email from Michael Millage on October 8, 2019 with subject line "FAA Review of Eric Havian Aviation Safety Hotline Report"

Although we appreciate these communications, we believe they are missing the mark. We did not submit a message on the FAA Safety hotline but rather sent you extensive documentary evidence detailing our client's warnings to Boeing leadership about the chaotic and unstable state of the 737 Factory in Renton, Washington and the potential for tragic consequences. Notably, Mr. Pierson warned Boeing leadership *before* the Lion Air accident that it should shut down the production line and then again prior to the Ethiopian Airlines accident. Nevertheless, Boeing leadership—including its General Counsel, CEO, 737 General Manager, and Board of Directors—never acted on Mr. Pierson's warnings and recommendations.

Mr. Pierson is not seeking a limited investigation into one-off process deviations or product defects. Rather, Mr. Pierson's concerns relate to a culture of profit-over-safety that pushed factory workers to the breaking point, led to unprecedented numbers of observed process breakdowns, and produced an inherently unsafe work environment that might have contributed

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to the loss of hundreds of lives. That is why we asked you to share the information we provided with the FAA representatives on the 737 MAX accident investigation teams and the Ethiopian and Indonesian Investigators-in-Charge. The accident investigators are supposed to have access to all relevant information and are responsible for conducting the investigation in accordance with ICAO Annex 13. Please confirm that you have shared this information with these individuals.

Of course, Mr. Pierson is also willing to assist any FAA investigation into the Renton factory. We will respond separately to Mr. Millage's questions, although we do not believe the nature of Mr. Pierson's information can effectively or efficiently be conveyed in writing. Mr. Pierson would welcome the opportunity to speak with Mr. Millage in person or by phone to elaborate on his concerns and address any additional questions. We stress, however, that Mr. Pierson's concerns extend beyond isolated incidents of nonconformance. For months, backlogs, delays, and schedule pressure overwhelmed the workforce at Renton, and virtually every measure of factory health deteriorated to unprecedented lows. These factory conditions posed an unreasonable risk to production quality, and as a result, public safety.

Mr. Pierson is gravely concerned that, despite the loss of hundreds of lives, these issues remain unaddressed and could be exacerbated once the 737 MAX is ungrounded and Boeing rushes to ramp up production and push out completed planes. In addition to sharing Mr. Pierson's information with the relevant investigators, we hope that the FAA will undertake a rigorous examination of the Renton factory to ensure that it does not return to the inherently unsafe conditions Mr. Pierson witnessed first-hand.

We appreciate your attention to this matter. Please contact us with any questions.

Sincerely,

Eric Havian

cc: Elaine L. Chao, U.S. Secretary of Transportation
H. Clayton Foushee, Director, FAA Office of Audit and Evaluation
Michael Millage, Management Specialist, FAA Aviation Safety Technical Program

Eric Havian
Partner
[redacted]

November 5, 2019

BY FEDEX

Honorable Steve Dickson
Administrator, Federal Aviation Administration
800 Independence Ave., SW
Washington, DC 20591

Re: Unsafe Condition on 737 Airplanes Requires Emergency Airworthiness Directive

Dear Mr. Dickson:

We write to call your attention to an urgent matter of public safety in connection with the ongoing investigation of the 737 MAX.[1] Last week on October 28, 2019, the Indonesian government released the Final Aircraft Accident Investigation Report for Lion Air Flight 610 ("Final Accident Report"). Information in the report suggests that there may be hundreds of potentially defective Angle of Attack ("AOA") sensors installed not only on the grounded 737 MAX, but also on **currently flying 737 NG airplanes and P-8 military airplanes**. An Emergency Airworthiness Directive should be issued immediately to airlines and Boeing requiring them to inspect, test and, if necessary, replace similar model AOA Sensors.

The Final Accident Report states that the AOA Sensor (part number 0861FL1, serial number 21401) made by Rosemount Aerospace (currently Collins Aerospace) that was removed the day before the crash on October 28, 2018 was found to be faulty during testing on December 10, 2018 at a Collins Aerospace facility. It is possible that a similarly faulty AOA sensor was installed on the Ethiopian Airlines Flight 302 airplane that crashed on March 10, 2019.

[1] On September 17 and October 14, 2019, we sent you letters requesting your assistance in connection with the alarming state of Boeing's 737 Renton, Washington factory in 2018, and the possible connection between the chaotic factory conditions and the tragic 737 MAX crashes that killed hundreds of people. On October 22, 2019, FAA employee Michael Millage contacted us to coordinate a time to speak with our client, Ed Pierson. We are awaiting Mr. Millage's availability; Mr. Pierson remains ready and willing to meet with the FAA.

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This part was inspected, installed, and tested by the Boeing Company at its 737 manufacturing plant in Renton, Washington during the summer of 2018.

The Final Accident Report states in pertinent part:

> Examination of the AOA sensor revealed an intermittent open circuit in the resolver #2 coil wiring. At temperatures above approximately 60°C, the resolver functioned normally, but did not function below that temperature. (Final Accident Report, p. 37)
>
> The examination concluded that the field failure of the 08-NCW-24YQ resolver was due to a loose loop in the rotor coil magnet wire that had been exposed and encapsulated in the epoxy used to hold the end cap insulator on the rotor. The epoxy caused the magnet wire to adhere to both the end cap insulator and the rotor shaft insulator. Because the CTE of the two insulators differ over 3 times from each other, thermal cycling from normal operation in the field caused the magnet wire to fail in fatigue as expansion and contraction rates and possibly directions differed from each side of the magnet wire. The failure manifested as a temperature dependent intermittent open. Physical examination of the resolver, including continuity tests, CT scans, and SEM imaging, concluded that this was the only magnet wire break in the unit and visual evidence of cracking, arcing, and metal "working" support the CTE theory of fatigue of the magnet wire. (Final Accident Report, p. 287)

This malfunctioning part represents an unsafe condition for other 737 airplanes manufactured during the same timeframe as the Lion Air Flight 610 airplane. This production defect needs to be corrected immediately.

A malfunctioning AOA sensor could result in pilot overload, potentially causing the loss of an airplane. Boeing's Flight Crew Operations Manual Bulletin No. TBC-19, dated November 6, 2018, describes those effects as follows:

> Additionally, pilots are reminded that an erroneous AOA can cause some or all of the following indications and effects:
> - Continuous or intermittent stick shaker on the affected side only.
> - Minimum speed bar (red and black) on the affected side only.
> - Increasing nose down control forces.
> - Inability to engage autopilot.
> - Automatic disengagement of autopilot.
> - IAS DISAGREE alert.
> - ALT DISAGREE alert.
> - AOA DISAGREE Alert (if the AOA indicator option is installed)

- FEEL DIFF PRESS light.

To protect the public, the FAA should immediately issue an Emergency Airworthiness Directive requiring airlines and Boeing to inspect, test, and potentially replace model AOA Sensors similar to the one originally installed on the Lion Air Flight 610 airplane. At a minimum, the airplanes that should be inspected include all 737 MAX, 737 NG and P-8 airplanes that were manufactured in the timeframe between the production of the Lion Air Flight 610 airplane during the summer of 2018 and the crash of Ethiopian Airlines Flight 302 on March 10, 2019.

To be clear, immediately issuing an Emergency Airworthiness Directive is only the first step the FAA must take—and it will not solve the underlying problem. A brand-new AOA sensor, inspected and installed by Boeing, should not fail. That it did only underscores the need for a comprehensive investigation into the chaotic and alarming state of Boeing's 737 Renton, Washington factory in 2018. Our client Mr. Pierson is ready and willing to assist the FAA in any way possible.

Sincerely,

Eric Havian

cc: Elaine L. Chao, U.S. Secretary of Transportation
Arjun Garg, FAA General Counsel
H. Clayton Foushee, Director, FAA Office of Audit and Evaluation

Date	Type	Airline	Registration	Line #	B1 Flight	Reason
5/12/18	737-9	Thai Lion Air	HS-LSI	6816	4/14/18	two loud bangs prompted crew to shut down the right engine
10/29/18	737-8	Lion Air	PK-LQP	7058	7/30/18	crash under investigation
12/1/18	737-8	WestJet	C-GZSG	7005	7/7/18	STAB OUT OF TRIM light occurred just after flaps up on departure
11/14/18	737-8	Sunwing	C-GMXB	6956	5/13/18	Multiple systems failures. Replaced left ADIRU
12/14/18	737-8	Norwegian Air Shuttle	LN-BKE	7110	10/14/18	Low oil pressure indication on the left engine
12/14/18	737-8	Aerolineas Argentinas	LV-HKU	6753	1/7/18	zone of adverse weather caused the failure of the left hand engine
12/24/18	737-8	Air Canada	C-FSCY	6695	11/27/17	returned to origin after noticing decreasing hydraulic quantity
12/29/18	737-8	Air Canada	C-FSIP	6841	3/13/18	lost wing anti-ice system due to an intermittent fault
1/6/19	737-8	SpiceJet	VT-MAX	7103	9/12/18	left engine shutdown due to a restriction in fuel flow
1/13/19	737-8	Air Canada	C-FSCY	6695	11/27/17	rejected takeoff due to a Master Caution light for forward door
1/28/19	737-8	Air Canada	C-FSEQ	6814	2/12/18	right engine shutdown due to a low oil quantity and a low oil pressure
1/29/19	737-8	TUI Airways	G-TUMA	7211	11/4/18	due to an abnormal engine (LEAP) indication
2/12/19	737-8	American	N308RD	6652	12/13/17	crew declared an emergency due to hydraulic failure indication light
3/10/19	737-8	Ethiopian Airlines	ET-AVJ	7243	10/30/18	crash under investigation
3/26/19	737-8	Southwest	N8712L	6290	9/18/17	lost right engine on initial climbout

Summary

15 emergencies involving airplanes built during a 13 month timeframe

2 crashes & 13 incidents