


Roy Irvin



US Senate Committee on Homeland Security and Governmental Affairs
 Permanent Sub Committee on Investigations
 340 Dirksen Senate Office Building
 Washington DC 20510

Below describes some examples of Boeing culture of shortcuts, pressure and hostility. I started working at Boeing South Carolina in 2009 as a contractor in quality, hired to a permanent position as a quality investigator from 2011 to late 2017, and worked as a Quality manager from 2017 December 2020, with the last 2 years being a flightline quality manager.

1. MFPP-Multi function process performer-Mechanic could put quality stamp on work performed by other mechanics-Quality buyoffs to be removed. Intent was to save time for mechanics waiting on quality to inspect, and to be able to remove headcount from quality and save money.
 - a. was driven as a high priority by senior quality leadership
 - b. Quality leadership forced little to no priority on corrective actions for non-conformances and stamping violations because corrective actions would show the need for more quality oversight and inspections.
 - i. MFPP Process success was added to goals and objectives of quality leaders and quality specialists and quality engineers
 - ii. Goals were established by managers for certain numbers of quality buyoffs to be removed by certain dates
 - iii. Buyoff removals were performed by quality engineers that really weren't engineers, that had little to no knowledge of aircraft.
 - c. Initially intended to be allowed for minor, non-critical installations such as paint touch up, sealant etc.
 - d. Quality to stamp final operation to verify required data entries in SOI and do a visual inspection on installation without any disassembly, however quality inspectors weren't even doing that,
 - e. Process was spread to other more critical installations
2. SPA-Single point acceptance-similar to MFPP but one work order for quality to perform final inspection on multiple groups of other work orders, sometimes as many as 50, across multiple areas of the airplane
 - a. Once again driven by quality engineers with little to no knowledge of airplane
 - b. Often areas to be inspected were already built over and could not be inspected without disassembly
 - c. These jobs were extremely difficult to work when they weren't completed in the factory and travelled out to the flightline.

3. Corrective action process/quality culture

- a. Corrective action group was always shorthanded and were rarely allowed to hire more people
- b. Suppressed to avoid exposing issues on shop floor that might indicate reasons not to allow MFPP
- c. In the factory, knowledgeable and honest quality managers that worked to process and had their teams work to process were usually moved or pushed out. I also witnessed many events of hostile treatment toward these managers. Anyone that was honest in quality was always under a lot of stress.
- d. Inspectors were rewarded for high number of buyoffs, not things they find wrong
- e. During the MFPP transition, there was a misconception among shop floor quality that the final buyoff for final visual inspection didn't require them to go look at the airplane. I verified with the process owner of the time that this was not the intent of the process. Eventually it was supported by leadership and there were many work orders completed that had no final visual inspections, only the verification that data entries were complete.
- f. Quality management pressured investigators to close or cancel corrective actions when there wasn't manpower to process them. Part of the corrective action process included the manager of the statement of work that caused the nonconformance had to respond with root cause and countermeasures on how the issue would be prevented in the future. This also included a response from the quality manager of the inspectors who bought off the inspection of the work that wasn't performed correctly or wasn't performed at all. In the factory, there was either no response was very late. This was true from both factory quality and manufacturing. Many times the managers would just refuse and we usually didn't get support from senior quality management. (depending on who it was at the time, some quality managers were really good). Normally the corrective action was aging, then the pressure would come from management to close or cancel them without resolution. [REDACTED] always pushed a "CA burndown" to make the corrective action metrics look good. Between aging CA's and new ones coming in on a daily basis, we were never allowed to have enough headcount, and many of the investigators wouldn't work to process of just did what leadership told them to do, whether it was per process or not. Many corrective actions didn't meet process requirements and should have been canceled, but many were serious issued and should have been at least investigated.
- g. Manufacturing engineering group (planners) refused to add or improve work instructions for years-No matter how serious an issue with the airplane was caused by poor work instructions, the manufacturing engineering group who wrote the work instructions would not improve because of the mandate from their leadership to do less to save money and headcount.
- h. Many quality investigators canceled or closed corrective actions without performing investigations and or containment of non-conformances.
- i. I found over 400 (approximate) corrective actions in the system that were canceled based on being an isolated condition or saying it should have been a process violations pickup, which neither were supported by process

- j. People were told by [REDACTED] (qai manager at the time) not to write corrective actions because he said we didn't have time or people to work them anyway.
- k. Senior manager [REDACTED] directed me not to write corrective actions for specific critical issues
- l. Senior manager [REDACTED] directed entire investigation group not to write or work corrective actions for safety related issues, even if they were caused by workmanship or stamping violations. In this case, a water line wasn't connected and flooded the lower part of the airplane when the water was turned on. The water line was still wrapped in original packaging and was inspected by quality saying installation was complete.
 - i. I reported [REDACTED] to ethics because the direction wasn't supported by BPI. If a safety issue was the result of stamping violation, the safety investigation wouldn't have covered the stamping violation, only safety related details, which I also verified with the safety manager. The ethics investigation resulted in me being correct about the process, but [REDACTED] ([REDACTED]'s manager) immediately went to the site BPI representative to have the process changed to match what they were wanting to do. This effort failed. The BPI change board didn't agree to the changes they were requesting.
 - ii. Years later when I was manager on the flightline, several open process violation pickups were being sent as travelled work. Upon reviewing, I saw that several of these pickups should have been corrective actions and not pickups.
 - iii. I did data pull in the system and found a couple hundred pickups that should have been corrective actions, or at least warranted some kind of investigation. I sent this information to ethics. The next day I got a phone call from [REDACTED], the new quality director. She said ethics contacted her and told her of my report. To me this was a major breakdown on the side of ethics. Ethics reports are supposed to be confidential and not to be sent to senior management. She told me that she would take care of the issue though. She touched base with me a couple more times and said that she was still working on it. As it turned out, a few months later I looked up the BPI and it had been changed to exactly what they were doing wrong to begin with. For my first several years at Boeing, there was a strong BPI change board (in Everett), which I was a part of as a representative from BSC, that wouldn't have allowed changes like this. Eventually most of the experienced board members retired and were replaced by people with no experience. This allowed management to push things through that were better for business but not good for the quality of the airplane.
- 4. Wing to body join-Manufacturing engineer [REDACTED] from Everett Wa and [REDACTED] from SC brought up a concern that South Carolina wasn't assembling wing to body joins correctly because we were using the same build plans and tools as Everett, but Everett always had to write nonconformances for engineering disposition for out of tolerance gaps.
 - a. I agreed there was likely reasons to be concerned, but corrective action and containment would have been almost impossible because for the build range of airplanes in question, there was no requirement to enter gap measurements in the build record. The only way to find gap measurements were to get the data sent to the shim

shop for CNC shim fabrication, which would have taken a lot of data interpretation by someone more capable in data crunching than quality.

- b. Manufacturing engineer recommended using "gapman" tools for taking gap measurements on wing to body. The mechanics were using feeler gauges. If I remember right, the work order didn't mandate the use of the gapman, but I don't remember for sure.
 - c. The only way to verify other suspect airplanes would be to disassemble and verify gaps. This would be a very labor intensive disassembly because the fasteners for the splice plates go into the center tank, and all those areas are sealed. The leaders of the engineering group, ([REDACTED]) refused to be involved with the issue. This was around the time that I was transitioning to flightline quality manager so I don't remember exactly, but I know quality dispositioned to disassemble at least one suspect airplane. I didn't see the data from this airplane but I was told that all gaps met requirements. Whether this airplane passed or failed would have been contingent on quality inspector buyoffs. This would still be suspect, depending on the integrity and knowledge of the inspector. Many inspectors buy off anything whether it's good or not. Inspectors are often picked by management knowing the inspector is willing to rubber stamp inspections.
5. Early days in aft body-I started in aft body building in 2009. A disregard for quality and a hostile work environment, and constantly looking for short cuts was a problem even then.
- a. In 2010 when I was an inspector, several aft body join sections had to be disassembled and reworked. The engineering disposition said to disassemble and make sure the old shim material (peel ply) was removed from the splice plates. After the peel ply was removed, there were little pieces of shim stuck all over the splice plates. I saw that and told the mechanics that it had to be completely clean. I went back later, and it had not been cleaned and new peel ply had been installed over the little chunks, which would cause an uneven surface in the final assembly, thus causing even more gaps. I brought it up and the quality director came to see me. He told me if I didn't have an engineering degree that I didn't need to give my opinion. I notified one of the engineers of the issue, He agreed with me and repeated the disposition. On the same airplane, same job they were using wedges made from carbon fiber to spread skins and install shims instead of disassembling the join to install the shims. The pieces of carbon fiber from the tips of the wedges were getting stuck in the stackup. The wedges were also tearing the peel ply shims that were already installed, causing them to pile up, which would also cause major gaps. Spreading the skin and splice plate with a wedge can also cause damage to the skin. Once again there was no concern about that happening by neither quality or operations management. They were also using cut and bent feeler gauges to measure gaps from inside fastener holes, instead of disassembly. Once the feeler gauges were cut and bent, they didn't measure the same as they were before, causing inaccurate gap measurements for shimming. I measured the feeler gauges with a micrometer and they didn't measure even close to the values stamped on the gauge, which would cause an inaccurate measurement of the gap. Once again, they didn't want to hear it. I was scrutinized for bringing it up.

- b. In 2013, I was investigating a nonconformance for bubbles in skin in the aft body join. This was caused by aft body join team. The investigation determined join team didn't even have correct measuring tools in toolbox. The quality manager was discharged after falsifying corrective action response saying tools had been purchased and placed in toolbox when they really weren't. In this case the senior manager was an ethical and trustworthy manager and did the right thing, but the behavior of the manager that was discharged was typical for a quality manager and typical of the culture.
- 6. Line number 332-wing expansion
 - a. Plug was left in vent line in wing for production test in the factory by employee who had had at least 3 other corrective actions for stamping work for fuel line leak test for being defective or being incomplete. This plug being installed prevented air from escaping the wing tanks when the airplane was fueled on the flightline. This caused a potential over expansion situation in the wing structure which meant much of the in-tank fuel sealant had to be removed, areas inspected, and re-applied, which was extremely labor intensive, in the heat out on the flightline. This was caused by one guy who just wouldn't learn, but operations management liked the fact that he sold lots of jobs and was productive on paper. This could have been prevented if the employees managers would have taken the corrective action process seriously the first 3 times.
 - b. I calculated partial cost for this NC to be around 3.2 million dollars. This didn't include the ripple affect that caused the tank sealant team to be far behind schedule for the next 18 months or so.
- 7. Quality workforce
 - a. Boeing hired [REDACTED] as Boeing Commercial Airplanes quality director. Had absolutely zero aviation experience. Had worked in automotive industry and Toyota.
 - b. After the 737 max incidents, Boeing executive leadership made a policy that if anyone wanted to advance in management in the company, they had to spend time in quality. This was an effort to make it look like the company was really going to focus on quality. This not only eliminated opportunities for good quality employees with quality experience to advance, it opened the door for the bean counters and accounts with no quality experience to assume important quality roles. Quality had always been a dumping ground for managers, this would make things worse.
 - c. [REDACTED] who had been a manager in IT was chosen for Aft body senior quality manager. Once again, no quality or aircraft experience, straight to a senior level position. He was chosen over [REDACTED] who was one of my quality manager counterparts on the flightline. [REDACTED] had spent most of his life in aviation and had worked through many roles throughout the value stream at BSC, yet they chose a guy from IT over [REDACTED] for the position.
 - d. [REDACTED] was [REDACTED] of [REDACTED] who was the final assembly director. He was moved from mid body production to flightline senior quality leadership. Once again, no quality experience, but he got the experience on his resume so he could advance in the company.
- 8. Time as Flightline Quality Manager
 - a. My manager [REDACTED] was supportive, honest and ethical. Many of the operations managers were also honest and ethical, but schedule pressure was immense.

- i. The airplanes would come to flightline in various degrees of unfinished condition from the factory (mostly interior items) . The airplanes were also always full of FOD and in a mess. As a flightline quality manager it was part of my role to review the airplane and build records to determine if the airplane was ok to fly with the unfinished items. Often times the build records would show that certain items were complete and fully installed, when in fact they were not. Many other times it was the opposite condition. Areas of the airplane would be completely put together but the build record would be completely open, which is just as bad because there was no way to tell if torque values, operator certifications, and requirements were met. This caused hostility toward the quality team for holding up progress, or missing a milestone such as B1 flight.
- ii. The flightline itself wouldn't be stressful, but the factory was always behind on things that should have been completed in the factory which caused a huge rush on the flightline airplanes, even down to the last days before delivery.
 1. The factory would move the airplanes to the next position with lots of incomplete work from the prior position. By the time the airplane was ready to move to the flightline, work had piled up resulting with much factor work on the flightline.
 2. Around 2017, Boeing decided to take away overtime pay in lieu of a higher bonus. After the 737 max disasters, there were no bonuses, and managers were still expected to work 60+ hours a week with no overtime pay and no bonus.

If you have any questions, feel free to call. Thank you.

Roy Irvin 04/15/2024

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