



AVIATION

UNDER THE TRUMP ADMINISTRATION

In 2017, President Donald Trump was sworn into office and shortly thereafter announced Executive Orders 13771 and 13777¹ outlining a dubious deregulatory plan on the pretense of cutting costs for businesses. This official step marked the beginning of the President delivering on campaign promises to high-dollar corporate donors and set the tone for his administration's slack approach to regulating various industries, including areas affecting consumer safety. The Orders placed egregious and unnecessary strain on many federal agencies, especially the Federal Aviation Administration (FAA), which is charged with overseeing safety within the U.S. aviation sector. One result of this haphazard shift in oversight policy has surfaced with the recent tragedies involving U.S.-based Boeing Company and the defects of its latest 737 iteration, the MAX 8. Two fatal crashes involving the aircraft, one in October 2018 and another just five months later, should sound the warning bells alerting the aviation sector of the dangerous path it is on under the Trump Administration and the need for better support, leadership and oversight of those regulating our country's aviation safety.

Industry deregulation escalated

Deregulation of the aviation industry is nothing new. However, with a wink and a nod to airlines, the Trump Administration's direct orders to unravel a regulatory frame-

work took deregulation to a new level.

Beginning in 1991, the U.S. Department of Transportation (DOT) handed over some of the regulatory decision-making power regarding the country's aviation industry to aviation companies, organizations and consumers. It created the Aviation Rulemaking Advisory Committee (ARAC) and charged the members with balancing the industry's needs with the safety requirements of the traveling public. Among ARAC's current members are Boeing representatives. It is this committee that DOT is relying on to help cut agency regulations in response to Trump's deregulation orders. In June 2017, the agency halted the creation and implementation of any new regulations and asked ARAC members for a list of suggested regulations that could be reversed. Industry stakeholders and trade groups subsequently presented a wish list of regulations they wanted the Administration to overturn. One industry trade group, Airlines for America, filed 222 pages of comments regarding proposed regulations it wants to be nixed and United Airlines added 50 more pages to the wish list.² Among them were some of the 80 airline-related consumer protection and safety regulations implemented by the previous administration.³ Rules such as the Tarmac Delay Rule, which was implemented in 2009 after several incidents in which air travelers were trapped on planes for hours without food, water or access to bathrooms

and often in extreme weather conditions.⁴ The rule requires airlines to provide food, water and access to bathrooms on domestic flights within two hours of a delay on domestic flights. Violations of the rule can cost airlines up to \$27,500 per passenger.

Additionally, the "hands-off" approach is visible in the reduced number of enforcement fines against major U.S. airlines. The number dropped by 88 percent between 2017 and 2019.⁵ In 2016, \$4.7 million in fines were levied by the DOT against major U.S. airlines for all regulatory violations. That amount dropped to \$2.7 million in 2017 and by 2018 it dropped to \$560,000. Enforcement actions for violating the Tarmac Delay Rule are included in those that have fallen despite an increased number of tarmac delays in 2017 and 2018.

The shift in priorities – placing industry stakeholders' profits ahead of safety – has intensified the climate of deregulation within the air safety realm. In particular, the FAA allows aircraft manufacturers to "self-certify" or approve certain parts of an aircraft they design. Because the FAA says it doesn't have the resources to retain subject matter experts, it instead relies on in-house experts working for aircraft manufacturers (e.g., Boeing employees) to help approve newly designed aircraft. In 2005, the FAA created a certification process at the direction of Congress called the Organization Designation Authorization (ODA)⁶ program. Experts within a unit of an aircraft

maker's company are supposed to conduct detailed and technical evaluations to determine if the company is complying with safety standards. The experts are compensated by the company, not the FAA. The ODA process has been described as a "bureaucratic hybrid." It was intended to keep the ODA "holder," the company applying for certification, and the ODA "unit," the group overseeing the certification process, separate. Barring unforeseen circumstances, the process would allow the FAA to run more efficiently. The FAA technically retains the responsibility of ensuring a company's approval meets federal standards but doesn't actually perform the work.

An audit conducted by the DOT's Office of Inspector General (OIG) in 2015 questioned the agency's ability to carry out this charge, particularly regarding its work with Boeing.⁷ A separate report in 2012 noted that close relationships between FAA managers and Boeing caused conflict among the agency's employees. The employees felt pressured to approve Boeing's products quickly and without thorough oversight. The FAA manager who was at the center of the 2012 OIG audit, Ali Bahrami, left the agency for a brief period when he worked for an aerospace lobbying group. Bahrami returned to the FAA and is currently the head of safety for the agency.⁸

Pressure from the administration and Congress⁹ has continued to build, resulting in far-reaching authority given to aircraft manufacturers, namely Boeing. After years of delaying the FAA's Reauthorization Bill, the law that establishes funding for the FAA, lawmakers finally passed the bill and the President signed it into law last October. The new law came into being just four weeks before the first fatal Boeing 737 crash and included two provisions that granted even more power and authority to aircraft manufacturers regarding the certification process. One provision gave companies more sway over rules that determine the role of the FAA in approving aircraft designs. The other provision established an "advisory committee" that includes industry representation and gives the committee authority to create metrics the FAA must "apply and track." The successful adoption of the provisions not only increased aircraft makers' influence over the certification process, but it also demonstrated Boeing's leverage over regulators. Boeing claimed to spend \$15 million on its federal lobbying efforts to push the provisions through the legislative process.

As a result of the ODA certification process, Boeing was allowed to conduct much of the 737 MAX's safety assessment. An analytical report from Boeing based on its self-certification was delivered to the FAA but included crucial "flaws," meaning that the company hid defects in the 737 MAX design. Read that again – Boeing hid defects in its report to the FAA and because the FAA did not do its own homework, the defective aircraft received approval.

Fast-forward to today and systemic failures that continue to surface in the ongoing Boeing 737 MAX debacle have proven critics' claims to be true: the FAA's hands-off self-certifying approval process creates a classic fox-guarding-the-henhouse scenario and puts lives at risk around the world.

The original 737 design was released in 1967 and has been a money-making aircraft for Boeing for many years. However, facing competition from newer and more efficient designs from aircraft-maker Airbus, and in an effort to salvage dwindling orders for its aircraft, Boeing scrambled to retrofit the old 737 design and rename it the 737 MAX.

Because it was designed in 1967, the original 737 was built low to the ground to allow baggage handlers easy access to the plane's underbelly and to allow passengers to board using older stairways. Retrofitting the 737 design to compete with Airbus required Boeing to install larger and more efficient engines. Because it was using the older aircraft design, and because the new engines required more ground clearance, Boeing decided to move the new 737 MAX engines farther forward and higher on the aircraft. As a result, the profile of the leading edge of the wings was altered. However, altering the wings and moving engines up and forward changed much more than just the 737 MAX ground clearance.

As anyone who has ever folded a paper airplane knows, even small changes in the fold of the paper can have huge consequences on the way the plane flies. The same simple aerodynamic principles apply to large aircraft. The effect of larger and more forward engines dramatically changed the flight characteristics of the new 737 MAX and caused the nose of the plane to have a tendency to pitch up while in flight. Continued, the uncontrolled upward pitch will cause an aircraft to lose forward airspeed and eventually stall and crash. Rather than redesign the airframe or correct the pitch problem through proper engineering, Boeing decided to simply patch the deadly flaws with

a secret automatic flight-control system it named the Maneuvering Characteristics Augmentation System (MCAS).

The purpose of the MCAS was to automatically adjust the horizontal tail stabilizer and cause the nose to push downward whenever the system sensed the plane was continuing to climb at lower air speeds. Significantly, the MCAS was designed to be hidden and separate from the autopilot system (think of the stability control system on an SUV, a computer-driven system that should only work to automatically adjust the forward angle of the vehicle if it senses too much yaw, which can lead to rollover). Angle of attack sensors on the 737 Max are intended to provide data to the MCAS so that the system has an accurate assessment of the pitch of the airplane in flight. Although most aircraft systems rely on redundancy and duplication to avoid what is referred to as a single-point failure (where failure of a single component or system is catastrophic), the Boeing MCAS was specifically designed to rely on data from only one angle of attack sensor. As a result, faulty data from only one sensor can cause the MCAS to react improperly and command the horizontal stabilizer to adjust and push the nose over.

Although the MCAS should have only operated when it sensed an imminent stall, the system is flawed and, in fact, attempts to push the 737 nose downward when it should not. When pilots react to the sudden downward motion of the aircraft and pull up on the flight controls, the MCAS again falsely senses a nose-up problem and pushes the nose down again. The result of the tug-of-war between the pilot and the flawed MCAS is an undulating porpoise-like flight path that causes the plane to lose altitude and airspeed until it crashes. In the case of the Ethiopian crash, early data suggests the pilots followed Boeing procedures in attempting to disengage the MCAS and were still unable to arrest the plane's dive prior to crashing.

Even though Boeing was aware of the problems with its 737 redesign and the flawed MCAS, it provided false data and information about the new system in its "self-certifying" reports to the FAA. Hiding defects from regulators and abuse of the self-certification process resulted in the loss of 346 lives. Adequate oversight from an independent agency responsible for aviation safety should have been able to identify the defects during certification and before approval.¹⁰

Senator Roger Wicker (R-MS), as head of the Senate Commerce, Science and Transportation Committee, sent a letter to FAA acting director Dan Elwell in April opening an investigation into whistleblower allegations that the FAA did not handle the certification of the 737 MAX 8 properly.¹¹ The letter cited information from “multiple whistleblowers alleging training and improper certification of Federal Aviation Administration (FAA) Aviation Safety Inspectors (ASI)” and demanded immediate attention regarding the allegations. Allegations included improper training and certification of FAA employees, including those in the Aircraft Evaluation Group for the Boeing 737 MAX, which may have had contributed to inadequate pilot training for the 737 MAX 8. Sen. Wicker’s letter also noted that the problems within the agency “may have led to an improper evaluation of the ... MCAS” and that documents show the FAA “may have been notified about these deficiencies as early as August 2018,” before either of the two fatal crashes.

Additionally, the U.S. Department of Transportation’s OIG in conjunction with the Department of Justice’s (DOJ) Criminal Division opened a criminal investigation of Boeing and the 737 MAX 8 shortly after Lion Air crash last year. Department of Transportation Safety Secretary Elaine Chao will name a blue ribbon panel to work with the OIG and the FAA announced that it will launch a Joint Authorities Technical Review Team to also review the 737 MAX.

Failure to appoint FAA director

In January 2018, the Aviation Safety Network (ASN) and a Dutch aviation consulting firm released data showing an unprecedented period of time for safety in U.S. aviation. No U.S. commercial passenger jet had crashed and there had been no fatalities on a U.S. operated flight since 2009. In one of his famous tweets, the President proudly claimed credit for the record despite being in office for only one year.¹² Harro Ranter, president of the ASN, explained that the safety record was a result of years of industry-wide efforts, including positive policy changes, and that it was impossible to link the data to recent U.S. policy changes. Yet, Trump refused to acknowledge this reality. It was the final provocation after a year of working to fend off attacks from the White House for FAA Director Michael Huerta and he resigned days later.¹³ Huerta was a carryover from the previous Administration and was working to provide continuity as the new administration transitioned. Now,

three years after his departure, the agency still does not have a director.

Daniel Elwell, a former American Airlines executive and lobbyist for industry trade group Airlines for America, became the agency’s acting head following Huerta’s resignation and continues in the position.¹⁴ Initially, President Trump floated the idea of nominating his personal pilot John Dunkin. Even the current highly partisan Congress agreed that Dunkin would never be confirmed since he lacked appropriate experience to oversee the agency with a \$17.5 billion budget and 45,000 employees. With no other potential nominee as a backup, the agency has floundered for three years under the control of Elwell and the officials in its top three positions who are in an acting capacity only.

Following the second deadly Boeing 737 disaster, Elwell was called to testify before Congress about the FAA’s response and the delay in grounding all 737 MAX 8 aircraft in the U.S.¹⁵ Despite obvious similarities between the two crashes, the agency initially refused to ground the planes, saying there were “no systemic performance issues” with that model aircraft to justify grounding them and that the planes were still airworthy. But with significant outcry from bipartisan U.S. Senators and other officials combined with pressure as a result of more than 30 other countries immediately grounding the planes, Trump yielded within 24 hours and grounded the aircraft. The reversal by the White House sent the FAA scurrying to explain that the shift in its policy was prompted by new satellite information that suggested similarities between the two crashes in order to try and salvage the agency’s credibility.

In his testimony, Elwell continued to defend the fact that the U.S. was one of the last countries to ground the planes. However, Senators criticized that initial inaction as being out of character for the agency, which typically takes the lead on safety. For example, in 2013, the FAA, which was under the direction of former Department of Transportation Secretary Ray LaHood, grounded the Boeing 787 Dreamliners due to battery fires.¹⁶ The U.S. was the first country to take the action and other countries followed. The FAA also took the same dramatic step in 1979 when it grounded McDonnell Douglas DC-10 planes after deadly crashes.

During the Boeing fiasco, Trump finally nominated former senior vice president for flight operations at Delta Air Lines,

Steve Dickson,¹⁷ to lead the FAA. While the pick seems to once again give a nod to corporate America, Dickson was also a Delta pilot, an Air Force officer, Air Force Academy graduate and F-15 fighter pilot. He has been praised for his commitment to commercial aviation safety and, if confirmed, he faces the daunting task of turning the agency around in an environment set up to favor corporate sales and protection over consumer safety.

Longest government shutdown brings industry to its knees

In the months between the two deadly Boeing crashes, the aviation industry suffered significant turbulence due to the longest partial federal government shutdown in U.S. history.¹⁸ The shutdown was a result of the President attempting to make good on another campaign promise, which was to build a border wall between the U.S. and Mexico. Lawmakers, however, were unwilling to commit to Trump’s full request for border wall funding. The impact from the shutdown cost the U.S. economy \$11 billion, including a \$3 billion permanent loss.¹⁹ It shuttered agencies and sent home federal workers who were not essential or critical to safety operations for 34 days beginning December 22, 2018. It placed the workers and American taxpayers in the middle of a standoff between Trump and lawmakers.

The country’s aviation sector experienced some of the most crippling impacts from the three-week long shutdown. The FAA reported that 6,300 projects, “many of them safety-related,” were stalled during the shutdown. Also, neither the FAA nor the National Transportation Safety Board (NTSB), the federal agency charged with investigating aviation accidents, were able to conduct all the necessary accident investigations during the shutdown. The agencies were forced to prioritize crash scene investigations, meaning that important evidence was not appropriately preserved. This could negatively impact the cases moving forward including determining the cause of the crashes and gleaned lessons from a proper investigation. Federal investigators use the findings of crash investigations to hopefully help the aviation industry prevent and improve the outcomes of potential crashes in the future.

Additionally, 3,000 support workers were furloughed or sent home to wait out the event and approximately 10,500 air traffic controllers were forced to continue working without pay because their jobs are safety

critical.²⁰ Similarly, many airport security agents were called to work without pay, placing a financial strain and undue stress on the agents and their families. Some workers had to find ways to supplement their income, others couldn't afford to go to work and the absentee rates began to soar. Union leaders representing air traffic controllers, pilots and flight attendants said the shutdown and its effects concerned them for "the safety and security of our members, our airlines, and the traveling public." The high absentee rate soon led to delayed or canceled flights across the country, including at some of the busiest airports such as New York's LaGuardia airport. As a result, lawmakers, industry leaders and others pressured Trump to finally end the shutdown.

Although the shutdown has ended, the impact will continue to ripple through the aviation sector, the nation's economy and many other areas of government for years to come. Characteristically, one group has attempted to use the shutdown to its advantage. Boeing, in an effort to shift blame, claimed that development for its software patch for the 737 MAX's defective MCAS was delayed due to the government shutdown.²¹ The company blamed the shutdown and accompanying delays as the reason it failed to implement the fix in time to prevent the second deadly crash. The software "fix" is intended to "limit the extent of the flight-control system's downward push on the plane's nose." The MCAS will also be programmed to take data from more than one Angle of Attack sensor, and if the data is inconsistent the MCAS will be disabled. The FAA told Boeing the fix was to be implemented by the end of March; however, the final implementation is expected to take much longer and could require a more extensive overhaul of the 737 MAX design.²²

A wake-up call

For three years, the Administration has systematically dismantled the FAA and set into motion a strategic deregulation plan, ceding more regulatory power and authority to airlines and aircraft manufacturers. On Trump's watch, the nation's aviation safety record has nose-dived, the industry has experienced more needless turbulence than in recent history and Trump's approach has served as a case study in how not to lead an agency that is vital to consumer safety.

In April 2018, a passenger was killed on Southwest Airlines Flight 1380.²³ It was the first passenger death on a U.S. commercial airline in nine years, shattering the

safety record Trump took credit for one year earlier. Early findings from the NTSB indicate that metal fatigue caused a hidden crack in a fan blade that broke off midair. It caused the engine to explode with such force that it tore off the engine's cowling, the external cover. This is what the industry calls an "uncontained engine failure." The midair engine explosion sent shrapnel bursting through a passenger cabin window and rapid depressurization caused the passenger to be partially ejected through the broken window. Just as the deadly Boeing crashes have called the FAA's certification process into question, the fatality on the Southwest Airlines flight has brought about increased scrutiny of aircraft inspection and maintenance protocols.

Earlier this year, an undercover investigative report revealed that airline mechanics felt pressured to ignore potential aircraft safety issues and to "short-cut the critical work they perform."²⁴ Complaints submitted to the FAA by whistleblowers since 2015 corroborate the investigation's findings. Mechanics said managers pressured them not to document maintenance issues, to focus only on the work assigned to them and to get the planes back in the air as fast as possible since the airlines do not make money when aircraft aren't flying passengers. They reported that they are constantly questioned about how long it takes to do their job and encouraged to "skip a few steps." The safety issues involved significant violations such as "[w]orn tires, worn brakes, [and] damage to the fuselage." The information prompted U.S. Senators to demand answers from the agency regarding the claims and how the agency handled them.

It is this kind of misconduct that prompted lawmakers early in U.S. aviation to establish an independent regulatory agency to oversee the sector.²⁵ The Civil Aeronautics Authority was created by Congress in 1938 and was the precursor to the FAA. The CAA was established in response to an investigation of a plane crash that killed 13 people including a U.S. Senator. It was one of the worst aviation disasters for an industry that was still in its infancy. Although the new plane had been cleared to fly at night and in dense fog, it did not have adequate equipment to communicate with ground crews. When the pilot could not locate the runway and also could not communicate with the ground crew, the plane ultimately crashed. Crash investigators discovered that a burgeoning new aviation industry with little to no oversight

created a culture that put profits ahead of consumer safety. Over time, this regulatory structure and mechanism for accountability have significantly been eroded by powerful corporate aviation lobbyists. Recent actions from the Trump White House have served only to further hasten dismantling of consumer protections.

Coziness between the President and powerful executives in the aviation industry such as Dennis Muilenburg, Boeing's CEO, has grown as Trump has eased aviation restrictions and oversight.²⁶ The Trump Administration has consistently used Boeing aircraft and other products for photo ops during his presidency. Boeing has been prominent in the fight to deregulate the aviation industry. Muilenburg reportedly even bragged about how Boeing was benefiting from the Administration's deregulation plan during an earnings call with investors in April 2017.²⁷ Additionally, the current acting Secretary of the Department of Defense (DOD) and Trump's purported nomination choice for the post, Patrick Shanahan, had a 31-year career at Boeing. The DOD is one of the leading purchasers of aircraft in the world and Shanahan was recently placed under an ethics investigation by the DOD's OIG for touting Boeing products over those of its competitors.²⁸ Critics have decried his public statements as direct violations of the oath of the office he holds.

Further, Trump has acted as salesman for Boeing and brokered deals between Boeing and U.S. allies. In 2018, the Emir of Kuwait agreed to buy Boeing's F/A-18 Super Hornet fighter jets. It was a decision the Emir had continuously delayed until Trump applied enough pressure. Boeing's Muilenburg boasted that as one of the largest U.S. exporters to China, purchases by China of the company's aircraft could be included in the pending trade deal between the countries. Additionally, a deal between Vietnam and Boeing was negotiated, in part by Trump, during his second summit with North Korea's Kim Jong Un.²⁹ Vietnam agreed to purchase 10 Boeing 787-9 Dreamliners.

But as much as the relationship between Trump and Boeing has benefited the company, it also raised concern for leaders worldwide following the second Boeing 737 deadly crash. The Administration's handling of grounding the aircraft not only caused concern among U.S. lawmakers as described previously, but it also led to international scrutiny and placed the nation's reputation

for being the gold standard in aviation safety in jeopardy.³⁰

A key example was the unprecedented move by Ethiopian authorities to rely on France's Bureau d'Enquêtes et d'Analyses in recovering and analyzing data from the flight data recorders, or black boxes, salvaged from the remains of Ethiopian Airlines flight 302.³¹ In the past, the boxes from an American aircraft manufacturer would be sent to the U.S. The move showed the level of distrust Ethiopia's officials had regarding America's ability to objectively interpret the boxes' data.

The bottom line is that under the Trump administration, every effort has been made to reduce corporate oversight and governance and, as a result, consumer protection has suffered greatly. Trump's latest federal budget proposal cuts \$9 million from the FAA's safety budget, intensifying the danger. The recent tragedies involving the flawed Boeing 737 MAX and the ongoing debacle of aircraft groundings, lawsuits and lost trust in American aviation should serve as wake-up calls to law and policy-makers. When aircraft manufacturers can fraudulently self-certify the safety of their equipment, appropriate oversight and accountability have been ignored. When tried-and-true redundancy is abandoned in favor of fragile single-point failure systems, sound engineering principles have been ignored. And when the already thin margin of consumer safety is sacrificed in the name of corporate profit, the safety of consumers worldwide is ignored. Too much power and authority rest in the hands of big business who are enabled by a pay-for-play administration. Consumer safety deserves more than twitter-based commentary.

- 1 Forbes: Did Trump Executive Orders Further Weaken FAA Oversight?: <https://www.forbes.com/sites/marisagarcia/2019/03/18/did-trump-executive-orders-further-weaken-faa-oversight/#82e6c533ca78>
- 2 Wall Street Journal: An End to Airline Red Tape – Or Consumer Protection?: <http://www.wsj.com/articles/an-end-to-airline-red-tape-or-consumer-protection-1518013800?mod=djem10point&ns=prod/accounts-wsj>
- 3 LA Times: Airlines Propose Long List of Rules to Kill or Revise as Part of Trump Deregulation Initiative: <https://www.latimes.com/business/la-fi-trump-airline-regulations-20180318-story.html>
- 4 LA Times: 3-Hour Limit Placed on Airline Passengers' Tarmac Waits: <https://www.latimes.com/archives/la-xpm-2009-dec-22-la-fi-tarmac-delays22-2009dec22-story.html>
- 5 Wall Street Journal: Boeing 737 MAX: The Latest Example of a Passive DOT: <https://www.wsj.com/articles/boeing-737-max-the-latest-example-of-a-passive-dot-11552409944>
- 6 Washington Post: With its Ties in Washington,

- Boeing has Taken Over More and More of the FAA's Job: https://www.washingtonpost.com/local/trafficandcommuting/with-its-ties-in-washington-boeing-has-taken-over-more-and-more-of-the-faas-job/2019/03/24/6e5ef2c6-4be8-11e9-9663-00ac73f49662_story.html?utm_term=.2469477406f1
- 7 Politico: Air Disasters Raise Worries of an 'Eroding' FAA: <https://www.politico.com/story/2019/03/18/air-disasters-faa-boeing-737-1279992>
 - 8 Insurance Journal: Relationship Between Boeing, FAA Safety Regulators Under Scrutiny: <https://www.insurancejournal.com/news/national/2019/03/25/521514.htm>
 - 9 Washington Post: With its Ties in Washington, Boeing has Taken Over More and More of the FAA's Job: https://www.washingtonpost.com/local/trafficandcommuting/with-its-ties-in-washington-boeing-has-taken-over-more-and-more-of-the-faas-job/2019/03/24/6e5ef2c6-4be8-11e9-9663-00ac73f49662_story.html?utm_term=.2469477406f1
 - 10 Beasley Allen Law Firm: Beasley Allen Investigating Deadly Boeing Crashes: <https://www.beasleyallen.com/news/beasley-allen-investigating-deadly-boeing-crashes/>
 - 11 U.S. Senate Committee on Commerce, Science, and Transportation: Letter to FAA Acting Director Daniel Elwell regarding the 737 MAX certification: https://www.commerce.senate.gov/public/_cache/files/e06e1b59-5df4-497b-8f9c-ce80c02f0426/F36F97736A8F13CCFC4701F08E8D.2019.04.02-wicker-elwell-letter.pdf
 - 12 Reuters: Trump Draws Rebukes After Touting Aviation Safety Record: <https://www.reuters.com/article/us-aviation-safety-trump/trump-draws-rebukes-after-touting-aviation-safety-record-idUSKBN1ER1VP>
 - 13 Fortune: FAA Chief to Step Down Days After Donald Trump Tweet: <http://fortune.com/2018/01/05/faa-chief-steps-down-donald-trump-tweet/>
 - 14 Quartz: Trump's FAA is up Against its Most Serious Airline Safety Crisis Yet: <https://qz.com/1571147/boeing-737-max-crisis-puts-spotlight-on-faa-under-trump/>
 - 15 Associated Press: The Latest: Senators Grill Elwell on Safety, Industry Lies <https://www.apnews.com/9526d67006294e34a54771a6a343813b>
 - 16 CNBC: After two fatal Boeing plane crashes, the world turned on the US: <https://www.cnbc.com/2019/03/17/two-boeing-737-fatal-plane-crashes-the-world-turns-on-the-faa.html>
 - 17 National Public Radio: Trump to Nominate Former Delta Air Lines Executive to Lead FAA: <https://www.npr.org/2019/03/19/704900992/trump-to-nominate-former-delta-airlines-executive-to-lead-faa>
 - 18 CBS News: What Opens Again Now That the Government Shutdown is Over?: <https://www.cbsnews.com/news/government-agencies-open-shutdown-over-what-was-affected-2019-01-26/>
 - 19 CNBC: The Government Shutdown cost the Economy \$11 Billion, Including a Permanent \$3 Billion loss, Congressional Budget Office Says: <https://www.cnbc.com/2019/01/28/government-shutdown-cost-the-economy-11-billion-cbo.html>
 - 20 Washington Post: Aviation System Begins to Feel Stress from the Shutdown, Union Leaders Say: https://www.washingtonpost.com/local/trafficandcommuting/aviation-system-begins-to-feel-stress-from-the-shutdown-union-leaders-say/2019/01/03/468d86ea-0f7f-11e9-84fc-d58c33d6c8c7_story.html?noredirect=on&utm_term=.0c3ad427cb21
 - 21 Jere Beasley Report: Software Fix Known but not Installed Before Second Crash: <https://www.beasleyallen.com/media/2019/04/jere-beasley-report-2019-04.pdf>

- 22 CNN: Aviation World Faces Moment of Reckoning After 737 MAX Crashes: <https://www.cnn.com/2019/04/07/politics/boeing-aviation-737-max-aftereffects/index.html>
- 23 Jere Beasley Report: First Passenger Fatality on a U.S. Air Carrier in a Decade: <https://www.beasleyallen.com/media/2018/09/jere-beasley-report-2018-08.pdf>
- 24 CBS News: Airline mechanics feel pressured to overlook potential safety problems: "Accident waiting to happen": <https://www.cbsnews.com/news/airline-mechanics-feel-pressured-by-managers-to-overlook-potential-safety-problems-cbs-news-investigation/>
- 25 Federal Aviation Administration: Origins of the FAA: https://www.faa.gov/about/history/brief_history/
- 26 Reuters: Ties Between Boeing and Trump Run Deep: <https://www.reuters.com/article/us-ethiopia-airlines-trump/ties-between-boeing-and-trump-run-deep-idUSKBN1QT2MQ>
- 27 CNBC: After Two Fatal Boeing Plan Crashes, the World Turned on the US: <https://www.cnbc.com/2019/03/17/two-boeing-737-fatal-plane-crashes-the-world-turns-on-the-faa.html>
- 28 Washington Post: Pentagon Inspector General Opens Probe into Shanahan's Links With Boeing: https://www.washingtonpost.com/world/national-security/pentagon-inspector-general-opens-probe-into-shanahans-links-with-boeing/2019/03/20/ebaa510a-4b55-11e9-b871-978e5c757325_story.html?utm_term=.4485d5d186c7
- 29 The Wall Street Journal: Vietnam Gives U.S. Aviation Industry \$21 Billion Boost: <https://www.reuters.com/article/us-ethiopia-airlines-trump/ties-between-boeing-and-trump-run-deep-idUSKBN1QT2MQ>
- 30 Business Insider: Boeing's 737 Max 8 nightmare and troublesome politics threaten the US's standing as the global aviation leader: <https://www.businessinsider.com/boeing-737-max-crashes-us-aviation-faa-reputation-experts-2019-4?qa=2.255108552.1184614362.1554816168-243682972.1554816168>
- 31 Washington Post: Investigators find 2nd piece of key evidence in crash of Boeing 737 Max 8 in Ethiopia: https://www.washingtonpost.com/world/africa/french-start-analysis-ethiopian-airlines-black-boxes-as-new-evidence-appears/2019/03/15/87770e8c-468f-11e9-94ab-d2dda3c0df52_story.html?utm_term=.2484f0802da8



Mike Andrews is a Principle in Beasley Allen Law Firm's Personal Injury and Products Liability Section where he focuses his practice on complex litigation including aviation cases.

He is currently leading the firm's efforts to investigate the Boeing 737 crashes at the request of families of several victims. Mike is a Martindale-Hubbell AV Rated attorney, has been named to the National Trial Lawyers Top 10 Aviation attorneys and is the president of the Alabama Head Injury Foundation.