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Welcome and thank you for joining us for today's Aviation Webinar Series. Our topic is **“Current State of Aviation: 5G, Drones, Urban Mobility and More”** We have just a few announcements before we get started.

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# Current State of Aviation: 5G, Drones, Urban Mobility and More

Aviation Webinar Series

June 23, 2022

# Presented By



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# Mask Use in Transportation

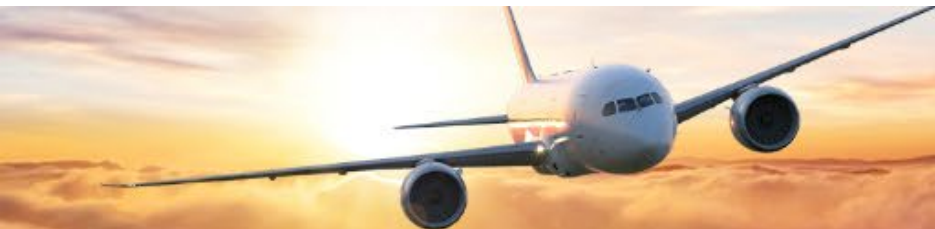
- January 31, 2021, TSA issues a security directive on mask use until May 11, 2021
- Mask Mandate was extended five times
- On September 9, 2021, DHS increased civil penalties for mask violations.
  - \$500-\$1,000 for first offense
  - \$1,000 - \$3,000 for second offense
  - These penalties are in addition to any FAA penalties
- April 18, 2022, Federal Judge overturned mask mandate
- TSA suspended enforcement, but asked DOJ to appeal the ruling
- May 31, 2022, TSA filed its appeal brief
- Ruling not expected until end of the year at the earliest



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# Response to Air Rage Incidents

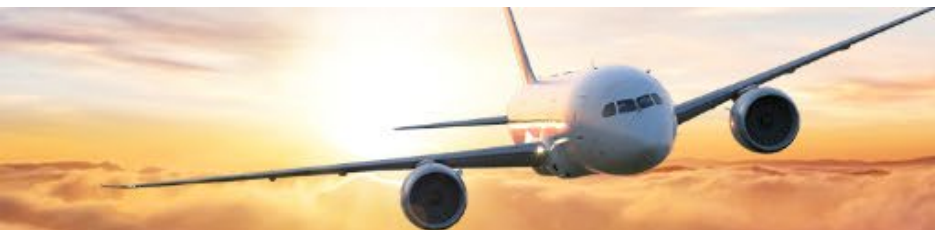
- On January 13, 2021, the Administrator issued an Order stating that the FAA would not be using its normal compliance methods against disruptive passengers, and instead:
  - When a passenger commits any such regulatory violation, or when a passenger's conduct is proscribed under 49 U.S.C. § 46318, FAA investigative personnel will send the case to the Office of the Chief Counsel's Enforcement Division (AGC-300) for legal enforcement action. Compliance actions and administrative actions will not be used to address such conduct.
  - The FAA will address any such conduct through legal enforcement action. The FAA will assess a civil penalty for any such conduct consistent with the guidance provided in chapter 9 of this order
- On March 31, 2021, FAA issued 2150.3C CHG 6, keeping the new enforcement guidance in effect at least as long as the TSA mask mandates stay in effect.
- On April 20, 2022, FAA made heightened unruly passenger guidance permanent.
- FAA has referred more than 80 unruly passenger cases to the FBI for criminal review.
- On May 30, 2022, a 29-year-old woman sentenced to 15 months in prison for assaulting a flight attendant and also received three years of supervised release, a \$7,500 fine, nearly \$26,000 in restitution, compulsory anger management and counseling classes, and a ban on flying on commercial airlines in the US.
- FAA continues to work through penalties from earlier this year, but has stopped its PR campaign of publicizing penalties against passengers, the last press release was April



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# Changes at FAA

- Billy Nolen was named to serve as acting FAA Administrator after FAA Administrator Steve Dickson departed at the end of March.
- Billy Nolen is a former airline captain and worked for WestJet, Quantas, and Airlines for America.
- He was also previously the FAA's Associate Administrator for Aviation Safety where he has led a team of more than 7,600 employees who oversee all aspects of aviation safety.
- Deputy Administrator Bradley Mims was also asked to take on an expanded role during this interim period, focusing on the FAA's workforce and the nation's airports.
- Within the past month, Larry Fields was made Acting Executive Director of Flight Standards Service.
- Larry Fields has been with FAA for over 34 years and began work as an Aviation Safety Inspector



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# 5G Implementation

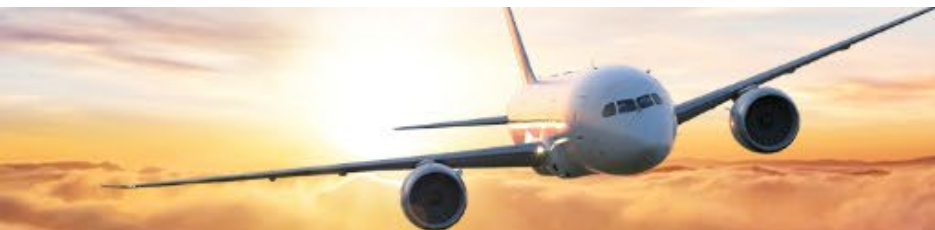
- 5G uses some of the same frequencies used by aircraft radio altimeters. FAA claims that they raised this issue repeatedly with the FCC based on the following timeline:
  - Since 2015, the FAA and the world aviation industry jointly raised concerns about 5G and in the World Radio Conference proposal, the proposal only supported an international mobile telecommunications (IMT—i.e., 5G) allocation in the 3.4 to 3.7 GHz spectrum—not the 3.7 to 3.98 GHz spectrum that is the issue for radio altimeters.
  - In 2018, Boeing raised concerns and proposed a solution. Additionally, ICAO, the aviation arm of the United Nations, identified that any use of the bands near 4.2 to 4.4 GHz should be contingent upon Radio Altimeter Studies.
  - In 2018, the Air Line Pilots Association raised concerns to the FCC.
  - In 2020 ahead of the auction for 5G C-Band, the FAA again raised concerns and asked for a postponement to collaborate on a solution. The NTIA, the federal government coordinator on spectrum disputes, failed to put the 2020 letter into the FCC's docket.
  - Throughout 2021, the aviation industry continued to ask for additional collaboration and time.



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# 5G Implementation

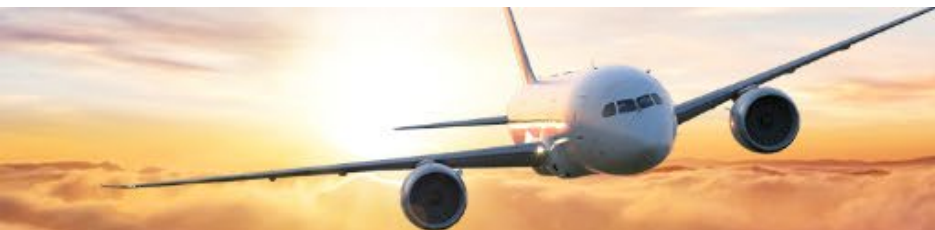
- On November 2, 2021, the FAA issued a special airworthiness bulletin about possible 5G interference and requested manufacturers provide data about the issue
- On December 7, 2021, the FAA issued its first statement on the issue, claiming that 5G and aviation will safely co-exist and that the FAA is working closely with FCC
- On December 23, the FAA stated it was working with 5G providers and indicated it would be issuing NOTAMS related to interference.
- Between January 25 and February 23, the FAA issued 4 ADs addressing interference issues on Boeing aircraft, stating that the AD was necessary because “many systems” on Boeing aircraft “rely on the radio altimeter, including autothrottle, ground proximity warning, thrust reversers and Traffic Collision Avoidance System.”
- The ADs affect 4093 US aircraft and 12,715 aircraft worldwide.
- On January 28<sup>th</sup> Wireless carriers agreed to measures to mitigate interference through July 5, 2022



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# 5G Implementation

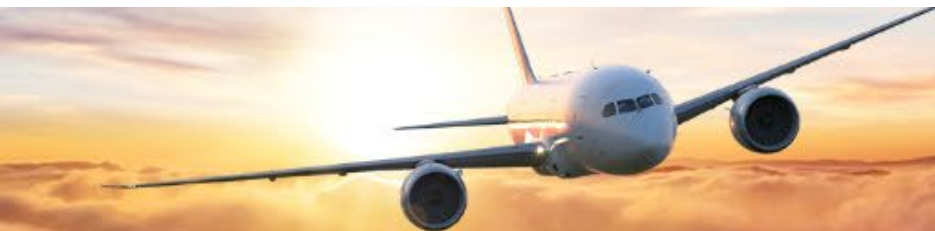
- FAA issued a statement updating the issue on June 17, 2022
- FAA states that they have “identified a path forward to enable aviation and 5G-band wireless to safely co-exist”
- FAA will follow a phased approach requiring affected radio altimeters to be replaced by the end of 2022
- Wireless carriers have agreed to keep the voluntary mitigations in place for an additional year
- FAA believes that filters and replacement units for the “mainline commercial fleet **should** be available on a schedule to allow the work to be **largely** complete by July 2023.”
- According to FAA, radio altimeter manufacturers have only been able to supply kits to fix the issue recently.
- FAA promises to continue to work with the National Telecommunications and Information Administration and the Federal Communications Commission on technical issues associated with these efforts.
- <https://www.faa.gov/5g>



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# Drones – Remote ID Implementation

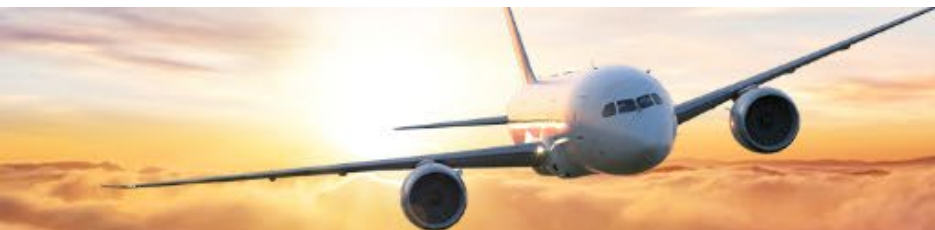
- The rule requires virtually all UAS manufactured for, and used in, the United States be equipped with Remote ID capability that broadcasts identification and location information about the drone and its control station.
- Older UAS can be retrofitted with a remote ID broadcast module.
- Rule permits limited operations at specific locations for hobbyists and UAS without Remote ID.
- September 16, 2022 – date for manufacturers to start manufacturing complaint drones
- September 16, 2023 – date for operator compliance
- Challenge filed on March 2021 – Brennan v. Dickson (Civ. No. 21-1087)
  - Briefing completed fall of 2021
  - Oral Argument December 2021
  - Opinion expected any day
- Amicus Brief filed by AUVSI
- No intervention by AMA



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# Drones – Remote ID Implementation

- Arguments made by Brennan focus on privacy and failures to follow the Administrative Procedures Act
  - Infringes on reasonable expectation of privacy
  - Utilizes tracking technology the Supreme Court has ruled unconstitutional
  - Violations of the Ex Parte rules
  - Changes between NPRM and final rule were too great
  - Failed to consider substantial negative comments
  - AUVSI filed an amicus supporting the FAA
- Oral argument ran substantially over time limits.
- The Court was primarily concerned about 4<sup>th</sup> Amendment issues in possible fringe cases and whether the FAA data tracking was a search
- Court asked what the FAA could do to salvage the rule if they invalidated it



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# Urban Air Mobility

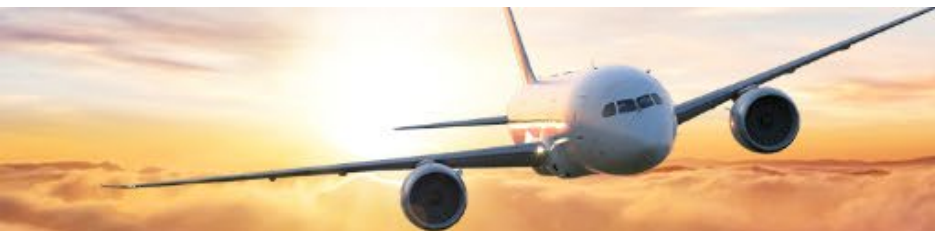
- Initial concept is for the use of highly automated light vertical take-off aircraft for intra-urban transportation
- According to the FAA, the goal is to expand UAM to include:
  - Commercial Inter-city (Longer Range/Thin Haul)
  - Cargo Delivery
  - Public Services
  - Private / Recreational Vehicle
- Aircraft will start by using existing helicopter infrastructure - routes, helipads, and Air Traffic Control (ATC) services, where practicable given the aircraft characteristics.
- FAA released draft of new vertiport design standards as Draft Engineering Brief 105 (generally larger and more robust than heliport standards)
- FAA and NASA cooperating in joint Advanced Air Mobility National Campaign



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# Urban Air Mobility – Roadblocks

- Certificated Air carrier
  - Last Month Joby was granted a Part 135 air carrier certificate to operate on-demand commercial air-taxi services using an all-electric aircraft under development. Operations are conditioned on the aircraft receiving a type certificate and a production certificate.
  - Aircraft has a pilot and 4 passengers, with a range of 150 miles at 200 mph.
- Certificated Aircraft
- Issuance of Production Certificates
- Pilot availability for implementation stage
- Technological maturity for transition to fully autonomous operations
- Airspace Issues
- Community Acceptance
  - Safety
  - Noise
  - Quality of Life (visual pollution)



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# Commercial Space – Who Regulates

- SpaceX has had 25 successful launches so far this year, and recently had 3 launches over a 36-hour period.
- FAA is involved in commercial space regulation through the issuance of licenses
- FAA grants launch licenses, reentry licenses, and spaceport licenses and has oversight on insurance issues
- FAA's role is to ensure that commercial space activities do not interfere with the safety of the National Airspace System.
- Currently, 21 Launch Licenses and 9 reentry licenses are active
- 14 spaceports are licensed
  - 4 in Florida
  - 2 in Texas
  - 1 in Alabama, Alaska, California, Colorado, Georgia, New Mexico, Oklahoma, Virginia
- FAA has licensed 461 launches since 1989, 88 of which have occurred in the last 18 months



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# Commercial Space – Who Regulates

- In 2004, Congress forbid the FAA from regulating crew and passenger safety before 2012, except in response to events that either caused a serious or fatal injury or contributed to an unplanned event during a commercial human space flight that posed a high risk of causing a serious or fatal injury. The regulation is limited to the specific cause of the accident.
- In 2015, the moratorium was extended until 2023.
- GAO has repeatedly criticized FAA's dual role in promoting and regulating commercial spaceflight.
- Department of Commerce also has some regulatory oversight through National Oceanographic and Atmospheric Administration (NOAA) and the National Telecommunication and Information Agency (NTIA).
- NOAA licenses commercial remote sensing satellites.
- FCC and NTIA license commercial satellite communications.
- Department of Commerce oversees licensing exports of space technology.



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# Commercial Space – Who Investigates?

- In November 2021, the NTSB issued a proposed rule codifying its authority over commercial space accidents
- NTSB claimed it had authority under a catch-all provision of 49 USC 1131 allowing them to investigate and determine the probable cause of “any other accident related to transportation of individuals or property when the Board decides the accident is catastrophic, involves problems of a recurring character or the “investigation of the accident would carry out this chapter”
- NTSB previously investigated a 1993 Orbital Sciences Pegasus incident in 1993 and the Virgin Galactic SpaceShipTwo accident in 2014
- NTSB proposed rules set guidelines for immediate notification to NTSB of an accident, responsibility for preserving wreckage, control of dissemination of information regarding the investigation, and establishes the supremacy of the NTSB investigation and requirements for other agencies to coordinate with the NTSB



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# Commercial Space – Who Investigates?

- On January 14, 2022, FAA wrote to NTSB expressing concerns about how the proposed rule would affect the existing statutory framework and MOU between FAA & NTSB
- On January 18, 2022, the Commercial Spaceflight Federation submitted comments to the proposed rule, and also sent their comments to Vice president Harris.
- Even though the comment period had already begun, NTSB proposed a meeting to “better understand” the objections.
- On March 10, the NTSB General Counsel placed a letter in the docket regarding the meeting, which was led by NTSB Chair Homendy. The CSF was concerned regarding:
  - Issues caused by overlapping agency jurisdiction
  - Position that space flight is not a mode of transportation
  - Possibility that spaceflight could be grounded based on any anomaly



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# Commercial Space – Who Investigates?

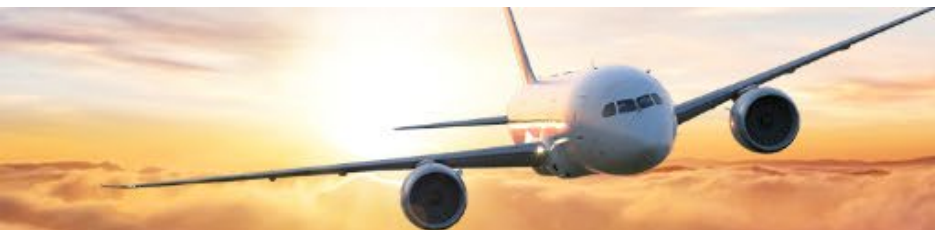
- NTSB responded that NTSB is a non-regulatory agency and cannot shut down any operations, it can only make recommendations
- CSF agreed that there is a role for the NTSB, and that the FAA Office of Commercial Space Transportation does not have the resources to do investigations
- CSF wanted clarifications of when the NTSB’s authority would be triggered
- NTSB reiterated that it was still reviewing the comments and it had no timeframe for the “next step” in the rulemaking process
- On April 6, Chairwoman and Ranking Member of the House of Representatives’ Committee on Science, Space, and Technology, wrote to President Biden stating that the “rulemaking is plainly unlawful” and urged the President “to terminate any further action and rescind the proposed rule.”
- The letter further stated the Committee’s concern “that the NTSB’s proposed rulemaking ... contravenes existing agreements [between the Department of the Air Force, the FAA, and NTSB] and statutory authorities including those related to commercial space launch and reentry activities . . . .”



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# BVLOS Drones - Consensus

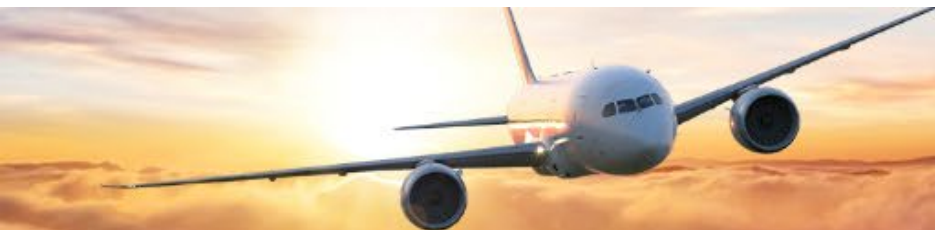
- Routine Beyond Visual Line of Sight (BVLOS) Aviation Rulemaking Committee (ARC) made its recommendations laying the groundwork for the next major FAA rulemaking.
- The ARC issued a 391-page report that made 5 recommendations:
  - That the FAA set an acceptable level of risk (ALR) for UAS that is consistent across all types of operations being performed. The proposal envisions that operators will have maximum flexibility to mitigate these risks with an approach tailored to the specifics of the operations.
  - Changes to 14 C.F.R. 91.113 and the requirement for aircraft to “see-and-avoid” other aircraft and the right-of-way rules for aircraft operating within 100 feet of a structure or below 400 feet. Manned aircraft with ADS-B or TABS would have the right of way over unmanned aircraft in these areas, but the unmanned aircraft would have the right of way over manned aircraft that are not equipped with ADS-B or TABS.
  - Creating a new rating for Part 107 Remote Pilot Certificates that would cover BVLOS operations. The new rating would come with new testing requirements which would be based on specific UA systems, use cases, and operational restrictions.
  - Establishment of a new BVLOS Rule which includes a process for qualification of UA and UAS, applicable to aircraft up to 800,000 ft-lb of kinetic energy.
  - Adoption of a regulatory system that would permit third parties to offer services that would support BVLOS operations, including unmanned traffic management, communications, and data management.



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# BVLOS Drones - Consensus

- The ARC was made up of 86 members, covering a wide range of interests, including trade associations, unions, think-tanks and non-governmental organizations (NGOs). The vote on the final report was as follows:
  - 44 Concur as Written
  - 20 Concur with Comment
  - 10 Non-Concur
  - 8 No Ballot Submitted
  - 4 Abstentions
- The “Non-Concurring” voters included a number of entities associated with the manned aviation industry or privacy issues, including the Aerospace Industries Association (AIA), Air Line Pilots Association (ALPA), Aircraft Owners and Pilots Association (AOPA), American Civil Liberties Union (ACLU), Electronic Frontier Foundation (EFF), Electronic Privacy Information Center (EPIC), General Aviation Manufacturers Association (GAMA), Helicopter Association International (HAI), and Praxis Aerospace Concepts (PACI).



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# BVLOS Drones - Consensus

- Six of these members – AIA, AOPA, ALPA, GAMA, HAI and PACI – submitted a scathing dissent
- The group states that the recommendations will have a substantial negative impact on the safe integration of UAS into the airspace, and further claims that:
  - “The final report possesses neither a coherent structure nor clear guidance upon which the FAA can be reasonably expected to act. Furthermore, there are significant misrepresentations throughout the narrative that inaccurately reflect (or completely neglect to mention) the disagreements and dissent of stakeholders across ARC memberships.”
  - The group goes on to complain about the procedures followed by the ARC from its inception, including a “lack of transparency and fairness offered to ARC membership.
  - Verbal and written comments and dissents have been ignored, not offered full plenary discussions and adjudication, or given inaccurate representation.”



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# FAA Counter Drone Efforts

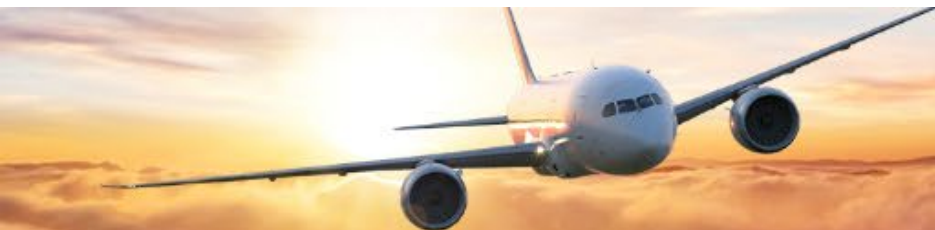
- House of Representatives asked the DOT Inspector general to examine how FAA has been handling development and deployment of counter-drone technology.
- The IG report found that the FAA's efforts are lacking in several key areas.
- The IG found that FAA has not conducted a strategic assessment of the need for counter-drone technology to ensure that it has the resources and processes in place to keep pace with increasing demand.
- The FAA experienced a 340 percent increase in UAS detection and C-UAS coordination requests from other federal agencies between 2019 and 2020 alone.
- IG faulted FAA's failure to complete testing of UAS detection and C-UAS technologies, and as a result, cannot fully assess their impact on aviation safety and security, and may not understand those impacts for several years.
- FAA responded and acknowledged that more work needs to be done to balance "safely integrating UAS into the National Airspace System while addressing security and operational concerns."
- Overall, the FAA "concurs with the recommendations to improve its UAS detection and C-UAS program strategic planning and mandated testing, as written" and pledged to perform an assessment of needed resources by the end of this year, and improve the efficiency of its coordination process with other agencies by February 28, 2023.



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# Who is an Aviation Worker? Southwest v. Saxon

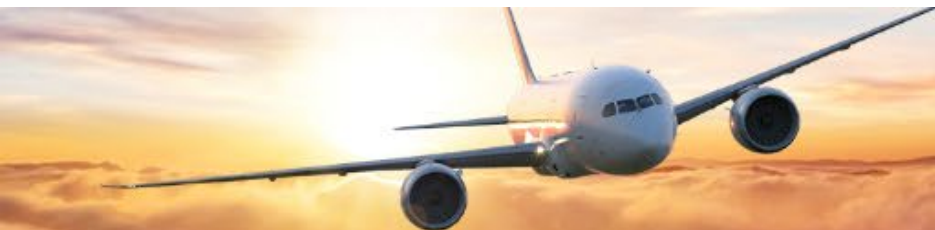
- Ramp Supervisor brought class action wage dispute under Fair Labor Standards Act
- Labor contract contains a clause requiring disputes to be individually arbitrated
- Southwest moved to dismiss arguing arbitration was required
- Saxon claimed she was in “a class of workers engaged in foreign or interstate commerce” and was excluded from the Federal Arbitration Act
- District Court upheld arbitration finding that only those who engage in “actual transportation” fell under the exemption
- Court of Appeals reversed, holding that the “act of lading cargo onto a vehicle to be transported interstate is itself interstate commerce”
- Appealed to the Supreme Court



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# Who is an Aviation Worker? Southwest v. Saxon

- Before Supreme Court, Saxon argued that the airline industry as a whole is engaged in interstate commerce, so all employees fell under the exception
- Southwest argued that the District Court was right, and only those directly involved in day-to-day interstate commerce fell under the exception.
- The Supreme Court unanimously rejected both arguments
- Court found that the exception did not apply to all workers and applied to play workers who play a direct and “necessary role in the free flow of goods” across borders
- Workers who load cargo for transportation are a “class of workers” engaged in interstate commerce
- Even though Saxon was a supervisor, she was in that class because she occasionally loaded cargo in her position
- Court recognized the answers will not always be clear “Compare, e.g., *Rittmann v. Amazon.com, Inc.*, 971 F. 3d 904, 915 (CA9 2020) (holding that a class of “last leg” delivery drivers falls within §1’s exemption), with, e.g., *Wallace v. Grubhub Holdings, Inc.*, 970 F. 3d 798, 803 (CA7 2020) (holding that food delivery drivers do not).”



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February 7-9, 2023



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# Thank You

If you have any questions, please contact us:

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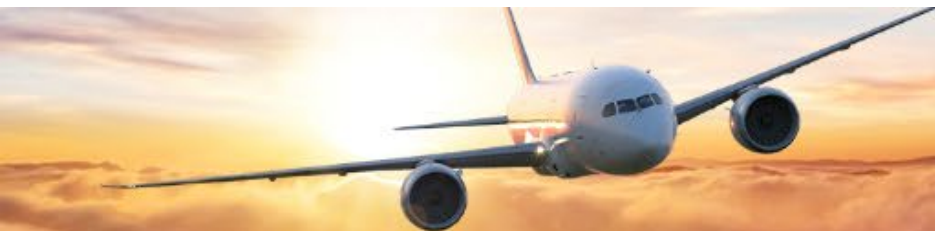
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