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SUMMARY

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# Commercial Space Launch and Reentry Regulations: Overview and Select Issues

Private aerospace companies, such as SpaceX and Blue Origin, offer launch services, transporting humans or payloads—including satellites, spacecraft, and cargo—to space. Their customers include companies, private citizens, and federal agencies, including the Department of Defense (DOD) and National Aeronautics and Space Administration. Congress shapes policy relating to commercial space launch and reentry through various laws that assign different agencies authority to oversee and regulate specific aspects of commercial space, including launch services.

The Commercial Space Launch Act (P.L. 98-575), enacted in 1984, authorized the Department of Transportation (DOT) to regulate the launch and reentry of commercial spacecraft and tasked the agency with promoting those commercial activities. DOT implements this authority through the Federal Aviation Administration's (FAA's) Office of Commercial Space Transportation (AST). DOT, through FAA AST, licenses commercial space launch and reentry. FAA AST imposes licensing requirements to protect public health and safety, as well as the national security and foreign policy interests of the United States.

In 2020, the FAA issued a new rule that would streamline its licensing requirements by creating a single set of regulations for launch and reentry that would apply to all types of space vehicles. The rules were codified in Title 14, Part 450, of the *Code of Federal Regulations* and are thus referred to as "Part 450" regulations. Part 450 regulations replace the agency's legacy regulations—which consisted of separate regulations for different types of launch and reentry vehicles—with a single set of consolidated, performance-based regulations that apply to all vehicles. Operators may continue to work under legacy licenses until March 10, 2026. By March 10, 2026, the entirety of Part 450 will apply to all launch and reentry licenses granted by the FAA.

The FAA license evaluation process has five major components. Under both Part 450 and the legacy regulations, the FAA conducts a *safety review*, in which it assesses potential risks to public health and safety; *policy review*, in which it consults with DOD, the Department of State, and other agencies to assess potential issues affecting U.S. national security or foreign policy interests; *payload review*, in which the FAA and relevant agencies review onboard payloads with respect to public safety, national security, and foreign policy interests; *financial responsibility requirements*, in which the FAA requires operators to demonstrate financial responsibility for the maximum probable loss expected to occur; and *environmental review*, in which the FAA analyzes potential environmental impacts. Licensees are also required to coordinate with the FAA Air Traffic Organization (ATO) on potential impacts to the national airspace.

Some stakeholders in the commercial space industry have criticized the time taken by the FAA to review Part 450 license applications. Conversely, some FAA stakeholders have argued that as the Part 450 licensing process becomes more routine, these regulations will prove to be more efficient and timelier than the previous licensing regime. Some stakeholders in the commercial space industry have called for increased resources for FAA AST. Some former FAA officials have argued that this may be addressed through fees on licensees.

Congress may consider AST's timeliness, workforce, financial responsibility requirements, and transition to Part 450, among other items, in its oversight of the FAA's launch and reentry policy and regulations. Congress may consider these concerns about the Part 450 licenses as it decides on FAA AST staffing levels and appropriations for the office. Congress may authorize AST to collect user fees, which could be allocated toward addressing perceived budget shortfalls or reducing taxpayer costs for commercial space activities that largely operate on a for-profit basis. Congress may consider AST's position within DOT more broadly, given recent proposals to elevate the office out of the FAA.

# Contents



## Figures



## Contacts

# Introduction

Companies offer space transportation as a service. Using launch and reentry vehicles,[1] companies such as SpaceX, Blue Origin, and Rocket Lab, among others, transport payloads—which include crewed spacecraft, satellites, and scientific instruments—into and from space. Congress shapes commercial space launch and reentry policies and procedures through its direction to the agencies involved in regulation and through the scope of regulatory authorities.

Within the Department of Transportation (DOT), the Federal Aviation Administration's (FAA's) Office of Commercial Space Transportation (AST) is responsible for both regulating and promoting commercial space launch and reentry. Congress directed DOT, among other things, "to oversee and coordinate the conduct of commercial launch and reentry operations, issue permits and commercial licenses and transfer commercial licenses authorizing those operations, and protect the public health and safety, safety of property, and national security and foreign policy interests of the United States."[2]

This report provides a brief overview of commercial space launch and reentry, discusses existing regulatory authorities, and provides a background on the FAA's regulatory framework, including the agency's transition to new regulations, the major requirements of its licenses, and stakeholder discussions on the implementation of its authorities. Specific topics addressed include considerations for congressional oversight, the provision of resources to FAA AST through appropriations and user fees, and proposals to elevate FAA AST to an office within the Office of the Secretary of Transportation or as a modal administration within DOT.

Space launches and reentries conducted solely by the U.S. government are not addressed in this report, as the responsible federal agency has authority for the safety of such missions.

# Overview of Commercial Space Launch and Reentry

Launch vehicles (also known as rockets) are used to transport payloads to space, and reentry vehicles are those intended to return to Earth substantially intact, often with payloads.[3] In many cases, the same vehicles, or components of those vehicle systems, are used for both launch and reentry. Often, vehicle systems are now designed for reuse on multiple launch and reentry missions. Some reentry vehicles may be transported to space as payloads on launch vehicles before reentry.

Launch vehicles vary widely. *Expendable launch vehicles* are used once, and *reusable launch vehicles*, conversely, can be recovered and used for future launches in whole or in part. Launch vehicles may be orbital or suborbital.[4] Launch vehicles may also be differentiated by payload capacity, ranging from small lift (payload capacity of less than 4,400 pounds) to super heavy lift

[1] For definitions of space vehicle and launch terms, see 14 C.F.R. §401.5.

[2] 51 U.S.C. §50901(b)(3).

[3] 14 C.F.R. §401.5 defines *reentry vehicle* as "a vehicle designed to return from Earth orbit or outer space to Earth substantially intact. A reusable launch vehicle that is designed to return from Earth orbit or outer space to Earth substantially intact is a reentry vehicle."

[4] Although both suborbital and orbital spacecraft reach space, only orbital spacecraft reach sufficient speed (known as "orbital velocity") to complete at least one orbit—or more commonly, several orbits—around Earth. In contrast, a suborbital flight reaches space and then returns without making a full orbit around Earth, usually after a few minutes.

(payload capacity of more than 110,000 pounds).[5] Demand for larger launch vehicles (heavy and super heavy lift) is driven by governments, while the private sector tends to drive demand for smaller launch vehicles.[6]

Reentry vehicles include launch vehicles that are designed to return to Earth and remain substantially intact, such as reusable launch vehicles.[7] Reentry vehicles include spacecraft, which are not themselves launch vehicles but rather are deployed on launch vehicles and return to Earth separately. For instance, the company Varda has an uncrewed spacecraft designed to host experiments in space before returning to Earth.[8] As another example, SpaceX's Dragon capsule is a reusable spacecraft that transports crew and cargo to the International Space Station (ISS).[9]

## Launch and Reentry Industry

In the United States, companies may launch vehicles from their own facilities, federally owned and operated launch facilities (known as *federal launch ranges*), or nonfederal launch facilities available for hire (known as *spaceports*). Safety and operating procedures at each of these facilities may differ. For instance, operations at federal launch ranges are subject to the operating agency's safety regulations, policies, and procedures.

Customers for commercial space launch and reentry services include governments, companies, and private citizens. Governments and companies procure such services for purposes including deployment of communications and remote sensing satellites.[10] Governments and private citizens may also use such services to transport humans, as astronauts or for recreation, respectively.

Governments across the world procure commercial launch services. In 2024, such government customers were responsible for 53% of revenue for the launch industry.[11] The U.S. government, in particular, is a customer of such services. In 2024, launches of U.S. government satellites generated 22% of global launch revenue.[12]

Various federal agencies are customers of the U.S. commercial space launch and reentry industry. For instance, the National Aeronautics and Space Administration (NASA) procures commercial launch services to supply the ISS and deploy scientific payloads. The Department of Defense (DOD) procures such services for purposes that include launching national security satellites

[5] Mitch Semanik and Patrick Crotty, "U.S. Private Space Launch Industry Is Out of This World," U.S. International Trade Commission, November 2023, https://www.usitc.gov/publications/332/executive_briefings/ebot_us_private_space_launch_industry_is_out_of_this_world.pdf.

[6] Mitch Semanik and Patrick Crotty, "U.S. Private Space Launch Industry Is Out of This World," U.S. International Trade Commission, November 2023, https://www.usitc.gov/publications/332/executive_briefings/ebot_us_private_space_launch_industry_is_out_of_this_world.pdf.

[7] 14 C.F.R. §401.5.

[8] Rocket Lab and Varda, "Touchdown for In-Space Manufacturing Mission: Rocket Lab's Pioneer Spacecraft Delivers Re-Entry for Varda's In-Space Manufacturing Capsule in South Australia," press release, February 28, 2025, https://www.businesswire.com/news/home/20250228229452/en/Touchdown-for-In-Space-Manufacturing-Mission-Rocket-Labs-Pioneer-Spacecraft-Delivers-Re-Entry-for-Vardas-In-Space-Manufacturing-Capsule-in-South-Australia.

[9] SpaceX, "Dragon," 2025, https://www.spacex.com/vehicles/dragon/.

[10] For more information, see CRS Report R44708, *Commercial Space Industry Launches a New Phase*, and CRS Report R46500, *The Future of Space Tourism*.

[11] Bryce Space and Technology, "State of the Satellite Industry Report 2025," May 2025, p. 32.

[12] Bryce Space and Technology, "State of the Satellite Industry Report 2025," May 2025, p. 32.

through the National Security Space Launch program, which uses commercial launch services to deploy military and intelligence community satellites.[13]

Statute and multiple executive policies have directed the U.S. government to, when possible, use commercial space launch services to promote the U.S. commercial space industry and to improve cost effectiveness. The Commercial Space Act of 1998 (P.L. 105-303) directs the federal government to "acquire space transportation services from United States commercial providers whenever such services are required in the course of its activities," with certain exceptions (e.g., if transportation services that meet specific mission requirements would not be reasonably available from U.S. commercial providers).[14]

Similarly, both the National Space Policy of 2010 and the National Space Policy of 2020—released by Presidents Obama and Trump, respectively—direct federal agencies to purchase and use commercial space capabilities and services to the maximum practical extent when available in the marketplace and aligned with U.S. government requirements.[15] The National Space Transportation Policy of 2013, released by the Obama White House, further directs NASA and DOD to serve as the agencies responsible for procuring commercial launch services for civil and national security space missions, respectively, by procuring space transportation services for other agencies.[16]

The U.S. commercial space launch and reentry industry has grown in recent years. The FAA, which licenses launches by U.S. citizens or from U.S. territory, reports that it "has licensed approximately 676 launch/reentries since 1989, with 47% or 316 launch/reentries occurring in just the past five years (FY2019-2023)."[17] Launches and reentries in FY2023 were the highest in U.S. history at 113, accounting for 17% of activity since 1989.

In its most recent five-year forecast, the FAA projects that commercial space launch and reentry operations will continue to increase through 2028, as shown in **Figure 1**.

[13] For more information, see CRS In Focus IF12900, *Defense Primer: National Security Space Launch Program*, coordinated by Jennifer DiMascio.

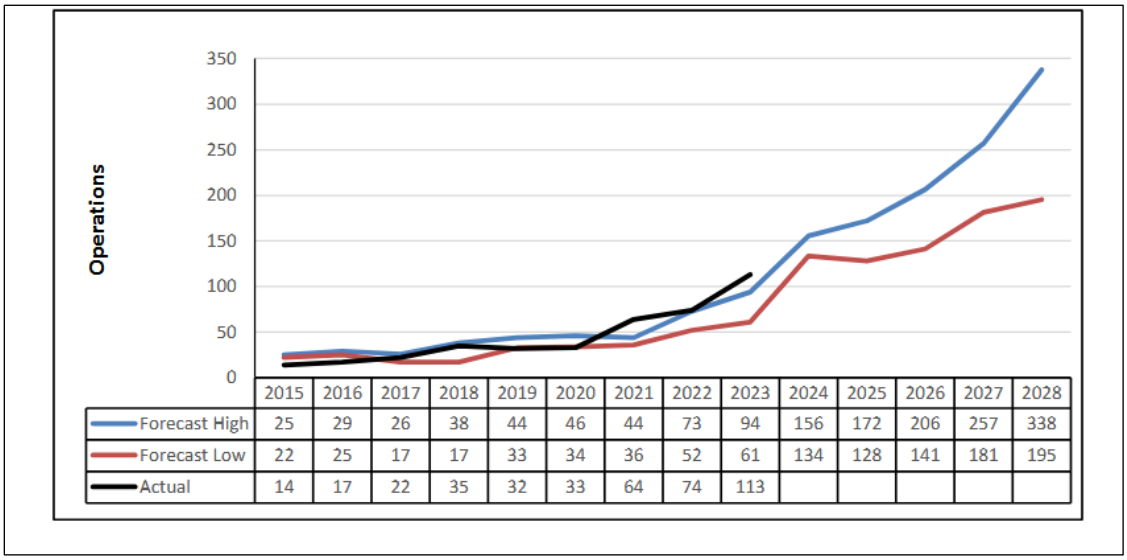
[14] Commercial Space Act of 1998 (P.L. 105-303), Title II, codified at 51 U.S.C. §50131.

[15] White House (Obama Administration), *National Space Policy of the United States of America*, June 28, 2010, p. 10, https://obamawhitehouse.archives.gov/sites/default/files/national_space_policy_6-28-10.pdf; White House (First Trump Administration), *National Space Policy of the United States of America*, December 9, 2020, p. 20, https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/12/National-Space-Policy.pdf.

[16] White House (Obama Administration), *National Space Transportation Policy*, November 21, 2013, https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/national_space_transportation_policy_11212013.pdf.

[17] Federal Aviation Administration (FAA), "FAA Aerospace Forecast Fiscal Years 2024-2044," 2023, p. 42, https://www.faa.gov/dataresearch/aviation/aerospaceforecasts/commercial-space.pdf.

**Figure 1. The FAA's 2023 Forecast of Authorized Commercial Space Operations, 2015-2028**




| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forecast High | 25 | 29 | 26 | 38 | 44 | 46 | 44 | 73 | 94 | 156 | 172 | 206 | 257 | 338 |
| Forecast Low | 22 | 25 | 17 | 17 | 33 | 34 | 36 | 52 | 61 | 134 | 128 | 141 | 181 | 195 |
| Actual | 14 | 17 | 22 | 35 | 32 | 33 | 64 | 74 | 113 | | | | | |

**Source:** Federal Aviation Administration (FAA), "FAA Aerospace Forecast Fiscal Years 2024-2044," 2023, p. 43, https://www.faa.gov/dataresearch/aviation/aerospaceforecasts/faa-aerospace-forecast-fy-2024-2044.

**Notes:** The FAA licenses launch and reentries for U.S. citizens and from U.S. territory. This forecast does not include activity not authorized by the FAA (e.g., launches carried out by the U.S. government for the U.S. government or launch activity carried out by other countries).

The number of U.S. commercial launches has surpassed that of other countries. In 2024, according to one analysis, U.S. commercial providers conducted 154 launches, nearly 60% of all launches worldwide. China had the second most launches globally in 2024, with 68 government and commercial launches.[18]

Companies in this industry tend to serve a blend of U.S. government and commercial customers. For instance, SpaceX transports crew and cargo to the ISS for NASA, as well as deploys satellites for U.S. and international companies.

The U.S. launch industry is relatively consolidated, with a small number of companies providing most launches.[19] SpaceX is viewed as the industry's dominant provider, conducting more U.S. launches than any other company (five out of six U.S. launches when launches to deploy or test its own systems are included).[20] As stated in a Georgetown University Center for Security and Emerging Technology report, "Today, SpaceX clearly leads the U.S. launch market, whether measured by the total number of launches, total available capacity ('upmass'), number of payloads launched, or number of boosters reused. In nearly all of these measures, SpaceX also dominates the world market."[21]

[18] Bryce Space and Technology, "Global Orbital Space Launches: 2024 Year in Review," 2025, https://brycetech.com/reports/report-documents/global-space-launch-activity-2024/.

[19] Michael O'Connor and Kathleen Curlee, *Shaping the U.S. Space Launch Market: Extending America's Advantage*, Center for Security and Emerging Technology, February 2025, p. 1, https://cset.georgetown.edu/publication/shaping-the-u-s-space-launch-market/.

[20] Michael O'Connor and Kathleen Curlee, *Shaping the U.S. Space Launch Market: Extending America's Advantage*, Center for Security and Emerging Technology, February 2025, p. 1.

[21] Michael O'Connor and Kathleen Curlee, *Shaping the U.S. Space Launch Market: Extending America's Advantage*, Center for Security and Emerging Technology, February 2025, p. 27.

# Background on Regulatory Framework

In 1984, the Commercial Space Launch Act (P.L. 98-575) gave DOT the authority to regulate the launch and reentry of commercial spacecraft.[22] The act directed DOT to "encourage, facilitate, and promote" commercial space launch. DOT is also directed to "protect the public health and safety, safety of property, and national security and foreign policy interests of the United States" in implementing its regulatory authority.[23] DOT implements these authorities through FAA AST.

FAA AST regulates commercial space launch and reentry through a licensing process, in which operators submit an application demonstrating their compliance with applicable regulations. Statute requires that an operator receive a license in order to conduct a launch or reentry in the United States. Similarly, U.S. citizens must receive a license in order to conduct such operations outside of the United States.[24] A single license may cover several such operations.

AST's regulations are focused on public health and safety or safety of property, rather than mission assurance (i.e., design and operations of the vehicle).[25] AST does not attempt to eliminate all risk to the public but rather to "ensure that adverse public consequences remain rare events and that the public safety risks are a small fraction of the background risks accepted by the public in the course of normal day-to-day activities (e.g. the risk posed by cars and trucks to pedestrians)."[26]

Statute also requires that licensees meet certain financial responsibility requirements, as codified in Title 14, Part 440, of the *Code of Federal Regulations.* FAA-licensed operators must obtain liability insurance or demonstrate financial responsibility "to compensate for the maximum probable loss" (MPL) from claims by a third party for death, bodily injury, or property damage and the U.S. government for damage to or loss of government property.[27]

The FAA may waive requirements, including the requirement to obtain a license, for uncrewed missions if doing so is "in the public interest and will not jeopardize the public health and safety, safety of property, and national security and foreign policy interests of the United States."[28] For instance, in 2012, the FAA waived a requirement that customers enter reciprocal waivers of claims for SpaceX's missions to and from the ISS, as the FAA determined that existing agreements between SpaceX's customers were "consistent with Congressional intent and the FAA's regulations."[29]

The FAA consults with other agencies in reviewing license and permit applications. Statute directs the FAA to consult with DOD on matters "affecting national security" and with the Department of State (DOS) on matters "affecting foreign policy."[30] The FAA may consult with other executive agencies as appropriate.

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[22] 51 U.S.C. Chapter 509.

[23] 51 U.S.C. §50901(b)(3).

[24] 51 U.S.C. §50904.

[25] *Mission assurance* refers to engineering processes used to assess and mitigate risks that may affect a mission's overall success during design, production, testing, and operations.

[26] FAA Office of Commercial Space Transportation (AST), *Safety Management System Manual*, Version 2.1, September 2022, p. 5, https://www.faa.gov/media/68006/.

[27] 51 U.S.C. §50914.

[28] 51 U.S.C. §50905.

[29] FAA, "Waiver of Requirement to Enter into a Reciprocal Waiver of Claims Agreement with All Customers," 77 *Federal Register* 63221, October 16, 2012.

[30] 51 U.S.C. §50918.

Statute requires that license applications be approved or denied not later than 180 days after the application is accepted.[31] If an accepted application does not contain sufficient information, the FAA's regulations allow it to toll the review period—that is, pause the time counted toward the 180-day review period—until the necessary information is received.[32] The FAA must notify the House Committee on Science, Space, and Technology and the Senate Committee on Commerce, Science, and Transportation when the agency has not met these statutory deadlines.[33]

### Enforcement and Investigation Authorities

The FAA may suspend or revoke a license if the licensee has not "complied substantially" with regulations or doing so "is necessary to protect the public health and safety, the safety of property, or a national security or foreign policy interest of the United States."[34] The FAA may also suspend a license if a previous launch or reentry resulted in a serious or fatal injury to any human being and if continued operations under that license are likely to result in additional serious or fatal injuries. In such instances, statute requires the suspension be for "as brief a period as possible" and end when the FAA determines that the licensee has taken sufficient steps to reduce the likelihood of serious or fatal injury.[35]

The FAA may, in implementing these regulatory authorities, conduct investigations, inquiries, and inspections of relevant sites and facilities. The agency may impose civil penalties of up to $100,000 for regulatory violations. Each day that a violation continues is considered a separate violation.[36] As an example, in 2024, the FAA proposed $633,009 in civil penalties against SpaceX for "allegedly failing to follow its license requirements during two launches in 2023, in accordance with statutorily-set civil penalty guidelines."[37]

## Overview of Licensing Process and Requirements

Applicants must consult with the FAA before submitting their license application. Pre-application consultations are oral discussions with the FAA regarding the application process and potential issues relevant to the agency's safety reviews. The FAA reports that the focus at this stage is "positioning the applicant to prepare an acceptable application, which will increase the efficiency of the licensing process."[38] The length of this consultation may vary, and this time does not count toward the 180-day period outlined in statute.

During pre-application consultations, the FAA discussions with operators include the following: the criteria to begin and end the pre-application consultation, the intended means of compliance to meet regulatory requirements, the intended scope of the license, expectations for compliance, and the timeline for operators to demonstrate compliance. During the pre-application

[31] 51 U.S.C. §50905. Upon an application's submission, the FAA conducts an initial screening to determine whether the application is "complete enough" for the FAA to conduct its review, per 14 C.F.R. §413.11.

[32] 14 C.F.R. §413.15(b).

[33] 51 U.S.C. §§50905 and 50906.

[34] 51 U.S.C. §50908.

[35] 51 U.S.C. §50908.

[36] 51 U.S.C. §50917.

[37] FAA, "FAA Proposes $633,009 in Civil Penalties Against SpaceX," press release, September 17, 2024, https://www.faa.gov/newsroom/faa-proposes-633009-civil-penalties-against-spacex.

[38] FAA, "Streamlined Launch and Reentry License Requirements," final rulemaking, 85 *Federal Register* 79566, December 10, 2020, p. 79569, https://www.govinfo.gov/content/pkg/FR-2020-12-10/pdf/2020-22042.pdf (hereinafter FAA, final rulemaking for Part 450, 2020).

consultation, operators may "negotiate a time frame shorter than the statutory 180-day review period."[39]

The FAA license application evaluation process has five major components: safety review, policy review, payload review, financial responsibility requirements, and environmental review.[40] The FAA reviews different aspects of each license application through these five components, described below.

- *Safety review*, in which the FAA determines whether the proposed operations can be conducted while ensuring public health and safety.[41] The safety review is "the principal component of vehicle operator license evaluations" and consists of "evaluating the applicant's safety organization, system safety processes, and flight safety analysis, as well as quantitative risk criteria for launch, reentry, and vehicle disposal."[42]
- *Policy review*, in which the FAA reviews an application based on "whether it presents any issues affecting U.S. national security or foreign policy interests, or international obligations of the United States." Through an interagency review of the application, the FAA consults with relevant agencies—such as DOD and DOS—"to examine the proposed operation from their [i.e., other agencies'] unique perspectives."[43]
- *Payload review*, in which the FAA reviews payloads on board the launch or reentry vehicle with respect to public health and safety, safety of property, U.S. national security or foreign policy interests, or international obligations of the United States.[44] The FAA consults with relevant agencies—such as DOD and DOS—through an interagency review. Payloads subject to the regulations of the Federal Communications Commission (FCC) or the Department of Commerce (DOC) or that are owned or operated by the U.S. government are not subject to FAA payload review.[45]
- *Financial responsibility requirements*, in which the FAA requires operators to submit evidence of insurance, or financial responsibility in a form other than insurance, that covers the MPL, or "the greatest dollar amount of loss for bodily injury or property damage that is reasonably expected to result from" the applicant's proposed operations.[46] The FAA determines the MPL for each proposed operation. This requirement is discussed in greater detail in "Financial Responsibility Requirements."

[39] FAA, final rulemaking for Part 450, 2020, p. 79586.

[40] FAA, final rulemaking for Part 450, 2020, p. 79567.

[41] 14 C.F.R. §450.45.

[42] FAA, "Vehicle Operator Licenses," November 13, 2023, https://www.faa.gov/space/licenses/operator_licenses_permits.

[43] FAA, "Vehicle Operator Licenses," November 13, 2023; see also 14 C.F.R. §450.45.

[44] 14 C.F.R. §450.43. The FAA reports that "usually, an interagency consultation combines the policy and payload reviews for a license application as a concurrent effort." FAA, *Applying for FAA Determination on Policy or Payload Reviews,* Advisory Circular (AC) 450.31-1, August 10, 2024, p. 11, https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_450.31-1.pdf.

[45] For more information on FCC and DOC regulatory authorities for commercial space, see CRS Report R45416, *Commercial Space: Federal Regulation, Oversight, and Utilization*, by Rachel Lindbergh.

[46] 14 C.F.R. §440.3; see also 14 C.F.R. §450.205.

- *Environmental review*, in which the FAA analyzes the environmental impacts of the proposed operations in accordance with the procedures and policies of applicable environmental laws, regulations, and executive orders.[47] For the environmental review, the FAA may require that the applicant prepare an environmental assessment with the agency's oversight, assume financial responsibility for the preparation of an environmental impact statement, and submit information in support of a reevaluation for a previously submitted assessment or impact statement.

Certain regulatory requirements relate to use of the national airspace. Applicants are required to coordinate with the FAA Air Traffic Organization (ATO) and other potential aviation stakeholders. Specifically, before a license may be issued, licensees must establish a written agreement with the ATO or other applicable air navigation authority establishing procedures and outlining expectations for all applicable stakeholders.[48]

To inform such coordination, applicants must conduct certain analyses to determine how long and what amount of airspace must be closed during the proposed space operation.[49] AST reviews and validates such analyses, and ATO is responsible for integrating those hazard areas into the national airspace system. More broadly, ATO is responsible for ensuring that such operations are integrated into the national airspace safely and do not endanger other users of the national airspace (i.e., civil or commercial aviation).[50]

The FAA also uses *advisory circulars* (ACs) to provide guidance on methods, procedures, and practices acceptable for complying with regulations.[51] ACs may describe an acceptable method for compliance or resolve a general misunderstanding about a regulation. ACs themselves are not binding and are not regulations. As of June 2025, the FAA has 28 active ACs that provide guidance on its commercial space regulations.[52]

## Financial Responsibility Requirements

Statute requires that licensees meet certain financial responsibility requirements.[53] This section briefly explains these requirements, including legislative context and policy developments.

The Commercial Space Launch Act Amendments of 1988 (P.L. 100-657) created financial responsibility requirements for the FAA's commercial space licensing program and established a

[47] 14 C.F.R. §450.47.

[48] 14 C.F.R. §450.147; Kelvin B. Coleman et al., "Airspace Integration of U.S. Commercial Space Launches and Reentries," paper presented at the 74th International Astronautical Congress, Baku, Azerbaijan, October 2, 2023, pp. 4-5, https://www.faa.gov/media/71916.

[49] Government Accountability Office (GAO), *Commercial Space Transportation: How FAA Considers Environmental and Airspace Effects*, GAO-24-106193, pp. 16-17, https://www.gao.gov/assets/gao-24-106193.pdf.

[50] For more information, see CRS In Focus IF11351, *Impact of Commercial Space Launch Activities on Aviation*, by Rachel Lindbergh.

[51] FAA, *FAA Advisory Circular System*, Order 1320.46D, April 7, 2015, https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1320.46D.pdf.

[52] FAA, "Advisory Circulars (ACs) Search Results," https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.list/?&appliedFacets=%7B%22officenumber%22%3A%22AST-1%22%7D (accessed June 17, 2025, using the filter "Office of Primary Responsibility: AST-1").

[53] 14 C.F.R. Part 440.

framework in which government and industry share third-party liability. This law was, in part, motivated by the U.S. government's responsibilities under existing treaties.[54]

The United States is a signatory to two international treaties that address international liability responsibilities for space activities: the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (the Outer Space Treaty), and the 1972 Convention on the International Liability for Damage Caused by Space Objects (Liability Convention).[55] Both the Outer Space Treaty and Liability Convention state that, should a space object cause damage to a country, the country that conducted the launch is liable for any damages.

The Commercial Space Launch Act Amendments of 1988 requires FAA-licensed operators to obtain liability insurance or demonstrate financial responsibility "to compensate for the [MPL]" from claims by a third party for death, bodily injury, or property damage and the U.S. government against a person for damage to or loss of government property.[56] For damages exceeding the required amount, the U.S. government may provide payment toward successful third-party claims. In such instances, statute limits the amount the U.S. government may pay to $1.5 billion in 1989 dollars, plus any amounts necessary to reflect inflation occurring after that date.[57]

The FAA calculates the required MPL amount, which is "the greatest dollar amount of loss for bodily injury or property damage that is reasonably expected to result from a licensed or permitted activity."[58] The FAA determines the MPL amount in consultation with other executive agencies, as appropriate.[59] Statute limits the overall value of the financial responsibility requirements to $500 million for third-party claims and $100 million for claims by the U.S. government, or to "the maximum liability insurance available on the world market at reasonable cost."[60]

# Transition to New Regulations

The FAA is in the process of transitioning to a single set of regulations, codified in Title 14, Part 450, of the *Code of Federal Regulations*, often referred to as "Part 450" regulations. Part 450 applies to all types of launch and reentry vehicles. Part 450 regulations went into effect on March 10, 2021, with exceptions for preexisting licenses and applications accepted before June 8, 2021. By March 10, 2026, the entirety of Part 450 will apply to all launch and reentry licenses granted by the FAA.[61]

Until 2021, the FAA used separate regulations for different types of launch and reentry vehicles. These regulations are codified in Title 14 of the *Code of Federal Regulations*, specifically,

[54] P.L. 100-657, §2.

[55] UN General Assembly, "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies," Resolution 2222, A/RES/2222(XXI), November 30, 1967, https://treaties.un.org/Pages/showDetails.aspx?objid=0800000280128cbd&clang=_en; UN General Assembly, "Convention on the International Liability for Damage Caused by Space Objects," March 20, 1975, https://treaties.un.org/pages/showdetails.aspx?objid=08000002801098c7.

[56] 51 U.S.C. §50914.

[57] 51 U.S.C. §50915.

[58] 14 C.F.R. §440.3.

[59] 51 U.S.C. §50914.

[60] 51 U.S.C. §50914(a)(3)(B).

[61] FAA, final rulemaking for Part 450, 2020.

- Parts 415 and 417, which address the launch of expendable launch vehicles;
- Part 431, which addresses the launch and reentry of reusable launch vehicles; and
- Part 435, which addresses the reentry of reentry vehicles other than reusable launch vehicles.

These legacy regulations—Parts 415, 417, 431, and 435—varied in their level of detail and approach. Expendable launch vehicles were subject to more detailed, prescriptive regulations than reusable launch vehicles. The regulations for expendable launch vehicles were largely based on the detailed safety standards used at federal launch ranges. For reusable vehicles, however, the FAA used "flexible process-based regulations" because, at the time, this technology was relatively new and not many safety practices had been established for it yet.[62] The legacy regulations also predate much of the recent technological innovation in the field. The most recent legacy regulations, Parts 415 and 417, were issued in 2006.[63]

The FAA's legacy regulations were widely viewed as being challenging to navigate and obsolete.[64] For instance, in 2020, then-FAA Administrator Steve Dickson reportedly described the legacy regulations as "woefully out of date and really out of step. Industry told us that loud and clear."[65] Specifically, the FAA reports that its regulations for expendable vehicles "have proven to be too prescriptive and one-size-fits-all, and the significant detail has caused the regulations to become obsolete in many instances."[66] For reusable launch vehicles, however, the FAA notes that its legacy regulations "have proven to be too general, lacking regulatory clarity."[67]

President Trump directed the FAA to streamline its launch and reentry regulations during his first term. On May 24, 2018, President Trump signed Space Policy Directive-2 (SPD-2), titled "Streamlining Regulations on Commercial Use of Space."[68] SPD-2 directed several federal agencies, including the FAA, to review their respective regulations to ensure they "promote economic growth; minimize uncertainty for taxpayers, investors, and private industry; protect national security, public-safety, and foreign policy interests; and encourage American leadership in space commerce."[69]

SPD-2 directed the Secretary of Transportation to review the FAA's launch and reentry regulations in coordination with the National Space Council.[70] After this review, the FAA was

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[62] FAA, "Streamlined Launch and Reentry Licensing Requirements," notice of proposed rulemaking, 84 *Federal Register* 15299, April 15, 2019, https://www.federalregister.gov/documents/2019/04/15/2019-05972/streamlined-launch-and-reentry-licensing-requirements (hereinafter FAA, notice of proposed rulemaking, 2019).

[63] FAA, notice of proposed rulemaking, 2019, p. 15298.

[64] Debra Werner, "Three Months from Application to Launch License? A New Report Says It's Possible," *SpaceNews*, November 23, 2018, https://spacenews.com/launch-certification-seac-report/; Testimony of Eric Stallmer, President of the Commercial Spaceflight Federation, in U.S. Congress, Senate Commerce, Science, and Transportation Committee, *New Entrants in the National Airspace: Policy, Technology, and Security*, hearings, 116th Cong., 1st sess., May 8, 2019, S. 594, pp. 5-6, https://www.commerce.senate.gov/services/files/e45ac125-b1dd-4d98-9055-678788cf5f7e.

[65] Jeff Foust, "FAA Publishes Streamlined Commercial Launch Regulations," *SpaceNews*, October 16, 2020, https://spacenews.com/faa-publishes-streamlined-commercial-launch-regulations/.

[66] FAA, notice of proposed rulemaking, 2019, p. 15404.

[67] FAA, notice of proposed rulemaking, 2019, p. 15299.

[68] White House, "Streamlining Regulations on Commercial Use of Space," Space Policy Directive-2 of May 24, 2018, 83 *Federal Register* 24901, May 30, 2018, https://www.govinfo.gov/content/pkg/FR-2018-05-30/pdf/2018-11769.pdf (hereinafter Space Policy Directive-2, May 2018).

[69] Space Policy Directive-2, May 2018, p. 1.

[70] The National Space Council is a body within the Executive Office of the President that advises the President on national space policy and strategy. Presidents may choose to convene the National Space Council but are not required (continued...)

instructed to streamline these regulations and transition to a general launch and reentry license that uses performance-based criteria and applies to all launch vehicle types.[71] SPD-2 directed the FAA to rescind or revise the existing regulations or to publish for notice and comment proposed rules that would revise or rescind the existing regulations by February 1, 2019.

SPD-2 also tasked federal agencies with reviewing requirements for commercial operations at federal facilities. Specifically, SPD-2 directed DOD, DOT, and NASA to jointly review requirements, standards, and policies for commercial launch and reentry at federal facilities. Further, the agencies were directed "to minimize those requirements, except those necessary to protect public safety and national security, that would conflict with the efforts" of the FAA in streamlining its regulations.[72]

In December 2020, the FAA issued its final rule for Part 450 as a single set of regulations for all vehicle types. Differences between Part 450 and legacy regulations include the use of performance-based standards, the ability to use an incremental review process, and the use of a single operator's license to support multiple launches or reentries from multiple launch sites.[73] These differences are briefly described below.

## Performance-Based Versus Prescriptive Regulations

The FAA reports that Part 450 "replaces many prescriptive regulations with performance-based rules, intended to give industry greater flexibility to develop means of compliance that meet their objectives while maintaining public safety."[74] Generally, performance-based regulations focus on desired outcomes, giving companies flexibility in how to meet the mandated performance standards. Conversely, prescriptive regulations specify the processes, design, or technology standards that companies must use. For instance, a prescriptive regulation may require the use of a particular process, while a performance-based regulation may instead set a desired threshold that could be met using different approaches.

Part 450 regulations can be satisfied either through adherence to government standards, through adherence to industry consensus standards, or through unique forms of compliance developed by an applicant and approved by the FAA.[75] The FAA uses ACs to identify potential methods of compliance for different Part 450 regulations. For instance, the FAA requires that licensees conduct a flight hazard analysis that identifies, describes, and analyzes reasonably foreseeable hazards. While the regulation itself does not specify a desired means of compliance, an accompanying AC provides one, but not the only, acceptable means of compliance.[76] The FAA states that this approach will "afford industry and the FAA the added flexibility of using new methods to better enable future innovative concepts and operations."[77]

to do so. As of June 2025, President Trump has not announced whether he intends to convene the National Space Council.

[71] Space Policy Directive-2, May 2018, p. 1.

[72] Space Policy Directive-2, May 2018, p. 1.

[73] FAA, final rulemaking for Part 450, 2020.

[74] FAA, final rulemaking for Part 450, 2020, p. 79567.

[75] FAA, final rulemaking for Part 450, 2020, p. 79569.

[76] 14 C.F.R. §450.109; FAA, *Flight Hazard Analysis*, AC 450.109-1, August 5, 2021, https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_450.109-1_Flight_Hazard_Analysis_nj.pdf.

[77] FAA, final rulemaking for Part 450, 2020, p. 79567.

## Incremental Review Process

Under Part 450, applicants may seek incremental approval and submit portions of an application independently of the others. The FAA must approve an operator's incremental review approach in advance, in order to ensure that the components are approved within an appropriate time frame.[78] Incremental reviews are intended to "reduce regulatory uncertainty by allowing the FAA to affirm at an early stage of development that the proposed safety measure or methodology meets the FAA's requirements."[79]

## Multiple Sites per License

Part 450 establishes a single vehicle operator license that authorizes the licensee "to conduct one or more launches or reentries using the same vehicle or family of vehicles."[80] Under the legacy regulations, separate licenses were required to operate the same launch vehicle at different launch sites. Part 450 licenses may cover operations at multiple sites.

## Effective Date of Part 450 Rules

Part 450 requirements went into effect on March 10, 2021, with a few exceptions for preexisting licenses and license applications accepted before June 8, 2021.[81] Licenses issued under legacy regulations can be renewed, but all legacy licenses will expire by March 10, 2026.[82]

Under the rules, by March 10, 2026, the entirety of Part 450 will apply to all launch and reentry licenses granted by the FAA.[83]

# The FAA's Implementation of Part 450

The FAA's implementation of its Part 450 regulations has been an ongoing topic of discussion among policymakers. This section highlights recent developments and provides a brief overview of varying perspectives on Part 450. Discussions on Part 450 generally focus on the FAA's responsiveness to industry in developing and implementing Part 450, the timeliness of the FAA's application review, the adequacy of relevant FAA resources, and potential methods to raise additional resources.

## Responsiveness to Industry During Development of Rules

Stakeholders within the commercial space industry do not agree on whether the FAA was properly responsive during the development of Part 450. Since Part 450 was implemented, the FAA has continued its efforts to solicit recommendations from industry on these regulations.

[78] FAA, final rulemaking for Part 450, 2020, p. 79567.

[79] FAA, final rulemaking for Part 450, 2020, p. 79569.

[80] 14 C.F.R. §450.3.

[81] 14 C.F.R. §413.1(b). Regardless of exceptions, two requirements for collision avoidance analysis and critical asset protection went into effect for all licenses after the effective date of March 10, 2021, per 14 C.F.R. §§450.169, 450.101(a)(4), and 450.101(b)(4).

[82] If a legacy license needs to be modified or renewed, the FAA will determine on a case-by-case basis whether the modifications will need to comply with Part 450, per 14 C.F.R. §§417.11 and 431.73.

[83] FAA, final rulemaking for Part 450, 2020, p. 79567.

During the rulemaking process, the FAA sought industry feedback through an advisory group. In 2018, the FAA convened an aviation rulemaking committee (ARC), composed of stakeholders from the aviation and space industries, to develop recommendations for a performance-based regulatory approach.[84] The ARC produced their final recommendation report in April 2018, and the FAA reported in its notice of proposed rulemaking (NPRM) that it had incorporated industry input and recommendations into its proposed rules.[85] The FAA published its NPRM on April 15, 2019, with a 60-day comment period. In response to industry requests, the FAA extended the comment period twice to allow stakeholders additional time for review and comment.[86]

Some stakeholders in the commercial space industry thought the FAA did not sufficiently incorporate industry recommendations. For instance, then-president of the Commercial Spaceflight Federation Eric Stallmer said in 2019 that the agency's proposed rule was significantly different from the ARC's recommendations. He described the proposed rule as "cover[ing] about 50 percent of what [the ARC] asked for."[87] Some Members of Congress had a similar assessment. In a 2019 appropriations report, the Senate Committee on Appropriations criticized the FAA's then-proposed rulemaking for not including "relevant language approved by a majority of ARC members." The report further stated that the then-draft regulations would create "unnecessary barriers to entry for new companies" and "may prevent many operators from achieving or maintaining flight rates and cost efficiencies to support new space applications and markets." The report encouraged the FAA to "reconvene" the ARC and to "consider a supplemental NPRM prior to issuing a final rule in order to meet an artificial deadline."[88]

Others have praised the FAA's engagement with industry as it developed Part 450. For instance, former Representative Frank LoBiondo, who had previously served as the Chairman of the Subcommittee on Aviation for the House Transportation and Infrastructure Committee during the 115th Congress, noted in 2019 that the FAA's rulemaking reflected industry consensus:

> The FAA convened an Aviation Rulemaking Committee (ARC) that included a diverse range of companies and organizations, including SpaceX, Boeing, Lockheed Martin, ULA [United Launch Alliance], Blue Origin, Northrop Grumman, Virgin Galactic, the Coalition for Deep Space Exploration, and the Commercial Spaceflight Federation. More than 70% of the ARC's inputs can be found in the NPRM, which is a true testament to the FAA's ability to listen and execute. ...
>
> In my more than two decades of federal experience, companies with little exposure to the rulemaking process often initially overreact when they are not allowed to write their own regulations. I am confident that if the FAA maintains constant communication with

[84] FAA, "Streamlined Launch and Reentry Licensing Requirements Aviation Rulemaking Committee," May 15, 2018, https://www.faa.gov/regulationspolicies/rulemaking/committees/documents/streamlined-launch-and-reentry-licensing.

[85] FAA, notice of proposed rulemaking, 2019, p. 15297; the FAA administrator has authority to convene aviation rulemaking committees pursuant to 49 U.S.C. §106(p)(5).

[86] Jeff Foust, "FAA to Extend Comment Period Again for Revised Launch Licensing Rules," *SpaceNews*, July 17, 2019, https://spacenews.com/faa-to-extend-comment-period-again-for-revised-launch-licensing-rules/.

[87] Jeff Foust, "Industry Seeks More Time to Review Revised Commercial Launch Regulations," *SpaceNews*, May 21, 2019, https://spacenews.com/industry-seeks-more-time-to-review-revised-commercial-launch-regulations/.

[88] U.S. Congress, Senate Appropriations Committee, *Transportation, and Housing and Urban Development, and Related Agencies Appropriations Bill, 2020*, report to accompany S. 2520, 116th Cong., 1st sess., September 19, 2019, S.Rept. 116-109, p. 31. According to H. Comm. Print 38-679 providing the explanatory statement for the Further Consolidated Appropriations Act, 2020 (P.L. 116-94), "Unless otherwise noted, the language and allocations set forth in the House report (House Report 116–106) and the Senate report (Senate Report 116–109) carry the same weight as language included in this statement and should be complied with unless specifically addressed to the contrary in this division or statement" (p. 1167).

> stakeholders, cooler heads will prevail and the entire commercial space industry will move forward together when the final rule is published.[89]

As another example, in 2020, the chief executive officer of ULA, Tory Bruno, described the FAA as having engaged in "meaningful and involved dialogue with commercial launch companies, including ULA, SpaceX, Northrop Grumman, and many others," which had "helped facilitate an open and fair process about how to most effectively regulate launch without impeding any of the groundbreaking advances that are being made every day."[90]

Industry engagement on Part 450 has continued through the Commercial Space Transportation Advisory Committee (COMSTAC), the FAA's standing advisory committee for commercial space, and through rulemaking committees. Part 450 has been a continuing topic for COMSTAC and its Regulatory Working Group.[91] Then-Secretary of Transportation Pete Buttigieg also convened an aerospace rulemaking committee (SpARC) in November 2024 to "identify and recommend any necessary amendments" to Part 450.[92]

## Timeliness of FAA Review

Perspectives vary on the timeliness of the FAA's review of Part 450 applications. Many industry stakeholders have criticized the FAA for exceeding its 180-day timeline for completing the review of applications. In addition, some industry stakeholders assert that the pre-application process, which does not count toward the 180-day deadline, has become particularly time consuming. For instance, at a 2024 hearing of the House Science, Space, and Technology Committee, President of the Commercial Spaceflight Federation Dave Cavossa described this as "an endless back-and-forth process" lasting years for some companies.[93] Stakeholders assert that such consultation is creating delays. For instance, Cavossa stated that the implementation of Part 450 "has caused severe licensing delays." The costs to navigate the licensing process, he asserted, run into "millions of dollars" per mission and "when combined with uncertainty and schedule delays, it's crippling our [industry's] efforts to launch and reenter new launch vehicles, support new customers, and raise new capital."[94]

FAA officials, however, assert that delays to date have been the result of particularly challenging or incomplete applications and that such delays will become less frequent as the agency and industry become familiar with Part 450. Then-FAA Deputy Associate Administrator for Commercial Space Transportation Michael O'Donnell stated that the four licenses issued under Part 450 as of November 2023 were for new vehicles that "required substantial iterations" during

[89] Frank LoBiondo, "Launching Commercial Space Industry Takes Team Effort," *SpaceNews*, November 13, 2019, https://spacenews.com/op-ed-launching-commercial-space-industry-takes-team-effort/.

[90] Tory Bruno, "FAA Streamlining Effort Empowers U.S. Launch Industry," *SpaceNews*, November 17, 2020, https://spacenews.com/op-ed-faa-streamlining-effort-empowers-u-s-launch-industry/.

[91] COMSTAC, "COMSTAC Regulatory Working Group Report: Part 450—Challenges and Recommendations," July 11, 2023, https://www.faa.gov/media/68016.

[92] Secretary of Transportation Pete Buttigieg, "Launch and Reentry License Requirements Improvement Aerospace Rulemaking Committee Charter," November 7, 2024, https://www.faa.gov/sites/faa.gov/files/Charter_Part-450-SpARC_11072024.pdf. The Secretary of Transportation has authority to convene aerospace rulemaking committees (SpARCs) pursuant to 49 U.S.C. §10(p)(5), as provided by the FAA Reauthorization Act of 2018 (P.L. 115-254). Before 2018, similar aviation rulemaking committees were convened under the FAA administrator's authority; one such aviation rulemaking committee provided recommendations to the FAA for developing its Part 450 regulations.

[93] Testimony of Dave Cavossa in U.S. Congress, House Science, Space, and Technology Committee, Space and Aeronautics Subcommittee, *Risks and Rewards: Encouraging Commercial Space Innovation While Maintaining Public Safety*, hearings, 118th Cong., 2nd sess., September 10, 2024 (hereinafter Testimony of Dave Cavossa, 2024).

[94] Testimony of Dave Cavossa.

the review process.[95] For that reason, he said that "the FAA believes that future Part 450 evaluations will be completed in a timely way."[96] Similarly, in a September 2023 interview, FAA Associate Administrator for Commercial Space Transportation Kelvin Coleman stated that timelines for Part 450 licenses will improve. He attributed delays to "growing pains" and stated that "as we get more experienced and as more companies get more experienced, I expect us to really see the full benefits of Part 450 come to the forefront and see some nice gains from that."[97] Coleman also asserts that industry "plays a significant role in helping the FAA reach licensing determinations faster" by submitting "thorough and complete applications."[98] In January 2025, Coleman said the agency had made progress in shortening the timeline, pointing to the Part 450 license recently awarded to Blue Origin's New Glenn rocket in 114 days.[99]

As of June 2025, the FAA had issued eight licenses under Part 450 and denied another, for a total of nine applications. For two of those licenses, the FAA's review exceeded its 180-day timeline.[100] CRS did not identify analysis on the average length of time for pre-application consultations, but some industry stakeholders have reported that the process may range from months to years.[101] In 2024, FAA officials reported that the agency takes on average 151 days to issue a license but did not specify whether this average applied to Part 450 licenses only or to all licenses (including under legacy regulations).[102]

## Resourcing of FAA AST and ATO

Industry stakeholders assert that the FAA may require additional resources to ensure timely review of applications and match the pace of a growing industry, particularly as it transitions existing licenses to Part 450. For instance, in October 2023, the Senate Committee on Commerce, Science, and Transportation held a hearing in which several witnesses called for increased resources for FAA AST. At the hearing, SpaceX's Vice President of Build and Flight Reliability, William Gerstenmaier, testified that AST's funding should be doubled and that the office should be granted expedited hiring authority.[103] Caryn Schenewerk, president of CS Consulting, testified that performance-based regulations require the regulating agency to have the expertise and

[95] Jeff Foust, "Transportation Department Official Suggests Industry Help Pay for FAA Commercial Space Office," *SpaceNews*, November 10, 2023, https://spacenews.com/transportation-department-official-suggests-industry-help-pay-for-faa-commercial-space-office/.

[96] Jeff Foust, "Transportation Department Official Suggests Industry Help Pay for FAA Commercial Space Office," *SpaceNews*, November 10, 2023, https://spacenews.com/transportation-department-official-suggests-industry-help-pay-for-faa-commercial-space-office/.

[97] Jeff Foust, "The Launch Industry Strains Launch Licensing," *Space Review*, October 23, 2023, https://www.thespacereview.com/article/4677/1.

[98] Testimony of Kelvin Coleman in U.S. Congress, House Science, Space, and Technology Committee, Space and Aeronautics Subcommittee, *Risks and Rewards: Encouraging Commercial Space Innovation While Maintaining Public Safety*, hearings, 118th Cong., 2nd sess., September 10, 2024 (hereinafter Testimony of Kelvin Coleman, 2024).

[99] Jeff Foust, "FAA Optimistic Launch Companies Will Switch to New Regulations by 2026 Deadline," *SpaceNews*, January 29, 2025, https://spacenews.com/faa-optimistic-launch-companies-will-switch-to-new-regulations-by-2026-deadline/.

[100] Email conversation with FAA AST, June 2, 2025.

[101] Testimony of Dave Cavossa, 2024.

[102] Testimony of Kelvin Coleman, 2024.

[103] Testimony of William H. Gerstenmaier in U.S. Congress, Senate Committee on Commerce, Science, and Transportation, Subcommittee on Space and Science, *Promoting Safety, Innovation, and Competitiveness in U.S. Commercial Human Space Activities*, hearings, 118th Cong., 1st sess., October 18, 2023, p. 6, https://www.commerce.senate.gov/services/files/ADC08FC1-E28D-4178-8D39-16E02BB803CE (hereinafter Testimony of William H. Gerstenmaier, 2023).

resources to review innovative proposals that may deviate from more familiar approaches.[104] Another witness—Sirisha Bandla of Virgin Galactic—stated that "increased funding for FAA AST is needed for AST to keep up with the growth of the commercial spaceflight industry and transition effectively to future regulatory reforms."[105]

Former FAA officials have proposed that user fees be collected from commercial space operators and allocated toward increasing AST's budget. In a November 2023 COMSTAC meeting, then-Deputy Secretary of Transportation Polly Trottenberg suggested that user fees be allocated toward increasing AST's budget, similar to how the agency uses fees from the aviation industry to support its activities.[106] Trottenberg reportedly asked, "We're an agency that has the ability to generate revenue and I think that's going to be a question for this industry. ... Does the industry need to start, frankly, contributing some revenues to solve the funding challenges that AST has?"[107]

Similarly, some former FAA officials have argued that the space industry's growth has placed pressure on the FAA's management of air traffic, asserting that fees on commercial space could be allocated to support ATO. For instance, former FAA Administrator Michael P. Huerta and former Chief Operating Officer of the ATO David Grizzle recommended that Congress consider methods to raise fees as the number of launches and reentries continue to grow and increase pressure on air traffic management.[108] Fees, they assert, may be used to support FAA ATO's increased workload.

Many stakeholders in the commercial space industry argue that fees would be burdensome for a nascent industry, particularly so for new entrants.[109] Such fees, they may argue, would raise the cost of launch services and may affect U.S. competitiveness in this global market. Similarly, commercial space operators are less frequent users of the national airspace than commercial aviation, which may lead some stakeholders to argue that application of user fees similar to those imposed on air transportation may be inappropriate.

[104] Testimony of Caryn Schenewerk in U.S. Congress, Senate Committee on Commerce, Science, and Transportation, Subcommittee on Space and Science, *Promoting Safety, Innovation, and Competitiveness in U.S. Commercial Human Space Activities*, hearings, 118th Cong., 1st sess., October 18, 2023, p. 7, https://www.commerce.senate.gov/services/files/563D7730-7FAD-426E-A08B-D6E3068A17D5.

[105] Testimony of Sirisha Bandla in U.S. Congress, Senate Committee on Commerce, Science, and Transportation, Subcommittee on Space and Science, *Promoting Safety, Innovation, and Competitiveness in U.S. Commercial Human Space Activities*, hearings, 118th Cong., 1st sess., October 18, 2023, p. 5, https://www.commerce.senate.gov/services/files/07881B07-FCFF-4B7C-8857-432BF66216C6 (hereinafter Testimony of Sirisha Bandla, 2023).

[106] Jeff Foust, "Transportation Department Official Suggests Industry Help Pay for FAA Commercial Space Office," *SpaceNews*, November 10, 2023, https://spacenews.com/transportation-department-official-suggests-industry-help-pay-for-faa-commercial-space-office/.

[107] Jeff Foust, "Is It Time for Space to Come Out from Under the FAA's Wings?" *Space Review*, May 13, 2024, https://www.thespacereview.com/article/4792/1.

[108] Minho Kim, "Biden Takes Aim at SpaceX's Tax-Free Ride in American Airspace," *New York Times*, April 4, 2024, https://www.nytimes.com/2024/04/04/us/politics/spacex-biden-musk-taxes.html.

[109] Minho Kim, "Biden Takes Aim at SpaceX's Tax-Free Ride in American Airspace," *New York Times*, April 4, 2024, https://www.nytimes.com/2024/04/04/us/politics/spacex-biden-musk-taxes.html.

# Considerations for Congress

## Oversight

Congress may consider AST's timeliness, workforce, administration of financial responsibility requirements, and transition to Part 450 regulations, among other items, in its continued oversight of the FAA's policies and regulations for commercial space launch and reentry.

### Timeliness in Regulatory Review

The FAA's timeliness in reviewing license applications has been a continued item of interest for Congress. Questions that may inform oversight include the following:

- To what extent is the FAA meeting its statutory deadline of 180 days in reviewing license applications? What factors are posing challenges to completing reviews?
- The pre-application process does not count toward the 180-day deadline. Should parts of that process or its entirety be considered as part of the formal application process?
- Is the current process for tolling the review timeline appropriate? If not, what other processes may be used? For instance, founder of the Space Policy Group Mike French suggested at a 2024 House Science, Space, and Technology Committee hearing that the agency use a "chess clock" method that "run[s] depending on who has possession of the application as it goes through the process."[110]

In February 2025, House Science, Space, and Technology Committee Chairman Brian Babin and Ranking Member Zoe Lofgren sent a letter to the Government Accountability Office (GAO) requesting an independent review of the effectiveness and efficiency of the FAA's processes for licensing commercial launch and reentry, particularly its Part 450 regulations.[111] Varying stakeholder opinions on the FAA's timeliness may make it challenging to identify appropriate policy solutions that achieve more optimal results.

### FAA AST Workforce

Many industry stakeholders have raised concerns over the staffing levels and staff's respective expertise at AST, calling for increased staffing as launch and reentry operations continue to grow.[112] In a July 2023 report, the COMSTAC Regulatory Working Group noted that there is a "lack of sufficient expertise to assess new compliance methods," which "shifts the burden to operators who have been asked for significantly more detailed deliverables in FAA-preferred formats" to demonstrate compliance for Part 450.[113]

[110] Testimony of Mike French in U.S. Congress, House Science, Space, and Technology Committee, Space and Aeronautics Subcommittee, *Risks and Rewards: Encouraging Commercial Space Innovation While Maintaining Public Safety*, hearings, 118th Cong., 2nd sess., September 10, 2024.

[111] House Science, Space, and Technology Committee, "Babin and Lofgren Request GAO Review of Commercial Space Licensing Processes," press release, February 12, 2025, https://republicans-science.house.gov/2025/2/babin-and-lofgren-request-gao-review-of-commercial-space-licensing-processes.

[112] Testimony of William H. Gerstenmaier, 2023; Testimony of Sirisha Bandla, 2023.

[113] COMSTAC, "COMSTAC Regulatory Working Group Report: Part 450—Challenges and Recommendations," July 11, 2023, p. 2, https://www.faa.gov/media/68016.

A 2024 GAO report on the FAA's role in commercial human spaceflight safety discussed similar concerns relating to staffing. The GAO noted that FAA AST has faced challenges in filling open positions across its office and has regularly had fewer staff than positions authorized.[114] As of August 2024, FAA Associate Administrator for Commercial Space Transportation Kelvin Coleman reported that AST had 158 staff members, with approximately 65%-70% of those employees working on licensing.[115]

In the last several years, AST has undertaken efforts to improve its workforce management, in part in response to a 2019 GAO assessment of AST's workforce management. As part of these efforts, AST produced in October 2024 its "Workforce Staffing Plan for Fiscal Years 2024-2028," which included plans to conduct a survey of staff competencies and skill gaps, reporting that it intended to repeat this survey "every three years in alignment with DOT practice."[116]

It is yet to be determined how ongoing efforts by the Trump Administration to restructure the federal workforce might impact the office's staffing, if at all, and how staffing changes may or may not affect the efficiency and efficacy of its commercial spaceflight activities. Reportedly, the FAA has indicated that safety-critical employees are not eligible for the deferred resignation program; it is unclear whether licensing staff would be considered safety-critical employees. Industry officials in early 2025 have reportedly expressed "worry that the loss of senior leadership would exacerbate workforce challenges in the office."[117] In its most recent organizational chart—dated May 22, 2025—FAA AST lists acting officials for its deputy associate administrator role and for all positions at the executive director or deputy director level.[118]

Potential questions to assess staffing include the following:

- To what extent have AST's staffing levels changed because of recent efforts to restructure the federal workforce? To what extent, if at all, have these changes impacted the office's ability to perform its statutory duties?
- How frequently should AST conduct an additional survey of its staff's competencies and skill gaps because of recent changes in its workforce? How effective is the current planned cadence of every three years?

## Administration of Financial Responsibility Requirements

Since 1988, licensees have been required to demonstrate financial responsibility—through insurance or other means—that may compensate for the MPL from claims by a third party of death, bodily injury, or property damage and the U.S. government for damage to or loss of

[114] GAO, *Commercial Space Transportation: FAA's Oversight of Human Spaceflight*, GAO-24-106184, February 2024, pp. 27-29, https://www.gao.gov/assets/d24106184.pdf.

[115] Testimony of Kelvin Coleman, 2024.

[116] GAO, *Commercial Space Transportation: Improvements to FAA's Workforce Planning Needed to Prepare for the Industry's Anticipated Growth*, GAO-19-437, May 23, 2019, https://www.gao.gov/products/gao-19-437.

[117] Jeff Foust, "Head of FAA's Commercial Space Office Takes Buyout," *SpaceNews*, April 28, 2025, https://spacenews.com/head-of-faas-commercial-space-office-takes-buyout/.

[118] FAA, "Commercial Space Transportation Key Officials," May 22, 2025, accessed June 8, 2025, https://www.faa.gov/about/office_org/headquarters_offices/ast/key_officials. The organizational chart lists the following positions as being held by an acting official as of June 8, 2025: Deputy Associate Administrator of Commercial Space Transportation; Chief of Staff; Executive Director and Deputy Director of the Office of Operational Safety; Manager of Safety Authorization Division; Executive Director and Deputy Director of the Office of Strategic Management; and Director of the Office of Spaceports.

government property.[119] The FAA's methodology for calculating these financial responsibility requirements has been a continued topic of discussion for policymakers.

The Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015 (SPACE Act of 2015; P.L. 114-90, Title 1) directed the FAA, in consultation with the commercial space industry and insurance providers, to evaluate and, if necessary, develop a plan to update its methodology. In developing such a plan, the FAA was to balance risks to the U.S. government and potential impacts on industry. P.L. 114-90 also directed the GAO to evaluate the FAA's assessment and plan.

In April 2017, the FAA delivered the required analysis to Congress. In its report, the FAA outlined previous improvements made to its MPL calculation methodology and stated that it would "continually work with industry to examine emerging industry developments and may make refinements in its MPL method in the future as a result."[120]

In January 2018, the GAO completed its assessment of the FAA's analysis.[121] The GAO found that the FAA did not fully assess the probability thresholds used to divide risks between launch companies and the government; did not consider direct costs to industry, such as insurance premiums, and to the U.S. government, namely indemnification liability; and conducted only limited consultations with industry.[122] The GAO recommended that the FAA evaluate its methodology and analyze its cost impact, in consultation with the commercial space industry, and that the FAA establish an estimated date of completion for these actions.[123]

In March 2023, the FAA convened a SpARC, composed of representatives from the commercial space industry, to provide recommendations to inform potential updates to the financial responsibility framework for launch and reentry.[124] The SpARC issued its final report in March 2024.[125] The SpARC recommended that the FAA provide greater transparency on its MPL methodology, in addition to several recommendations on specific aspects of the financial responsibility requirements.[126]

The FAA's progress toward the requirements outlined in the SPACE Act of 2015, including the extent to which it incorporates industry feedback, may inform congressional oversight. As of June 2025, the GAO's recommendations to the FAA to complete an assessment of its methodology

[119] 51 U.S.C. §50914.

[120] FAA, "FAA's Development of an Updated Maximum Probable Loss Method," April 21, 2017, p. 9, https://www.faa.gov/sites/faa.gov/files/2021-11/Report-to-Congress-on-Maximum-Probable-Loss-4.21.17.pdf

[121] GAO, *Commercial Space Launch Insurance: FAA Needs to Fully Address Mandated Requirements*, GAO-18-57, pp. 16-17, https://www.gao.gov/assets/gao-18-57.pdf.

[122] GAO, *Commercial Space Launch Insurance: FAA Needs to Fully Address Mandated Requirements*, GAO-18-57, p. i, https://www.gao.gov/assets/gao-18-57.pdf

[123] GAO, *Commercial Space Launch Insurance: FAA Needs to Fully Address Mandated Requirements*, GAO-18-57, p. 16, https://www.gao.gov/assets/gao-18-57.pdf.

[124] Secretary of Transportation Pete Buttigieg, "Financial Responsibility Aerospace Rulemaking Committee Charter," March 15, 2023, https://www.faa.gov/sites/faa.gov/files/advisory_rulemaking_committees/Financial%20Responsibility%20Aerospace%20Rulemaking%20Committee%20Charter_Posted.pdf.

[125] Part 440 Financial Responsibility Aerospace Rulemaking Committee, "Part 440 Financial Responsibility Aerospace Rulemaking Committee Final Report," March 1, 2024, https://www.faa.gov/sites/faa.gov/files/PART%20440%20SPARC%20FINAL%20REPORT%20-%20RELEASED%20MARCH%201%202024.pdf.

[126] Part 440 Financial Responsibility Aerospace Rulemaking Committee, "Part 440 Financial Responsibility Aerospace Rulemaking Committee Final Report," March 1, 2024, p. 8, https://www.faa.gov/sites/faa.gov/files/PART%20440%20SPARC%20FINAL%20REPORT%20-%20RELEASED%20MARCH%201%202024.pdf.

remain open.[127] In its page on the status of its recommendations, the GAO reports that the FAA intends to evaluate the SpARC's recommendations and "develop a corresponding action plan later in 2025."[128]

### Transition to Part 450

The entirety of Part 450 will apply to all launch and reentry licenses starting March 10, 2026. By this date, licenses issued under legacy regulations will expire. FAA Associate Administrator for Commercial Space Transportation Kelvin Coleman described this time frame and transition as "very challenging" given the number of legacy licenses not yet transitioned to Part 450.[129]

The resourcing for AST may become more relevant as the office completes its transition to Part 450 on March 10, 2026. SpaceX's Gerstenmaier stated the following in a 2023 Senate hearing:

> [A]s AST transitions licenses for vehicles previously approved under legacy regulations to Part 450 over the next two years, the entire regulatory system is at risk of collapse. AST is struggling to fulfill its responsibilities today and simply does not have the bandwidth to process the significant additional paperwork of this transition without materially reducing its responsiveness to applicants.[130]

In January 2025, the FAA's then-Executive Director of Operational Safety, Dan Murray, reported that 20 license holders need to transition to Part 450 and that AST and each of the companies had created a schedule to complete their respective transitions before the end of calendar year 2025.[131]

As this date approaches, potential questions include the following:

- What is the status of the transition to Part 450? How many operators use legacy regulations, and how many use Part 450?
- Out of the operators using legacy regulations, how many will transition to Part 450 (as opposed to ceasing their operations)? What is their timeline for doing so?
- To what extent does the FAA anticipate an influx in Part 450 applications as March 10, 2026, approaches? What is the necessary FAA staffing needed to complete timely reviews of applications if faced with an increased workload during the transition?

## Resources for FAA AST

FAA AST is funded by congressional appropriations through the FAA's Operations account. Congress may consider concerns raised by industry stakeholders as it determines appropriations for the office. For FY2024 and FY2025, FAA AST received about $42 million in appropriations

[127] GAO, *Commercial Space Launch Insurance: FAA Needs to Fully Address Mandated Requirements*, GAO-18-57, https://www.gao.gov/products/gao-18-57.

[128] GAO, *Commercial Space Launch Insurance: FAA Needs to Fully Address Mandated Requirements*, GAO-18-57, https://www.gao.gov/products/gao-18-57.

[129] Testimony of Kelvin Coleman, 2024.

[130] Testimony of William H. Gerstenmaier, 2023.

[131] Jeff Foust, "FAA Optimistic Launch Companies Will Switch to New Regulations by 2026 Deadline," *SpaceNews*, January 29, 2025, https://spacenews.com/faa-optimistic-launch-companies-will-switch-to-new-regulations-by-2026-deadline/.

and reported 148 FTE positions. The FY2026 requested amount includes a small increase (about $161,000) and 148 FTE positions for FAA AST.[132]

Some stakeholders in the commercial space industry have advocated for additional funding for AST. Congress may consider these concerns as it determines appropriations for the office. Among its options, Congress could increase funding for AST, reduce funding to AST, or authorize AST to collect user fees, which could be allocated toward licensing staff needs or FAA AST operations and used to address any budget reductions or perceived shortfalls.

### Increased Resources

Additional resources may enable AST to increase the number of full-time equivalent (FTE) positions focused on licensing or increase its staffing in anticipation of future industry growth. Additional funding or authorized positions, however, may not resolve all of the challenges AST faces in maintaining its workforce. As the GAO reported in a 2024 assessment, in eight of the past nine years, AST has had fewer employees than positions authorized. The GAO reports that this is in part because AST "competes with private industry for a finite pool of experienced people," and, further, onboarding new hires "taxes current staff resources" as it may take up to two years to train new staff to evaluate certain license applications.[133]

Additional resources may also enable AST to enter into or expand existing contracts with independent technical organizations that may support the licensing process. For instance, AST works with the MITRE Corporation's Center for Advanced Aviation System Development—a federally funded research and development center (FFRDC) that supports the FAA—to provide technical analyses that support licensing and assess AST's processes.[134] External support may help to facilitate and expedite certain aspects of license review (e.g., technical review) and allow AST to increase technical staff should it receive a surge of applications. Contracting staff cannot perform inherently governmental functions, including approval of federal licensing actions and inspections.[135]

Additional resources may also be used to support other efforts to improve the FAA's implementation of its licensing process. In September 2024, the head of FAA AST, Kelvin Coleman, reported that the office was developing the Licensing Electronic Application Portal (LEAP), "which will be used to accept, modify, exchange, and approve licensing materials under Part 450." LEAP is intended to streamline and provide more transparency into the licensing process, as it will "enhance [AST's] ability to identify, track, and quickly resolve questions and issues both internally and externally with applicants."[136] As of June 2025, the status of LEAP is not clear. Congress may be interested in enquiring as to the status of the system and stakeholder feedback on its use, if it is operational. Increased resources may support LEAP's completion or other such efforts to improve the licensing process and may yield cost savings through efficiency gains.

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[132] Department of Transportation (DOT), *Budget Estimates: Fiscal Year 2026. Federal Aviation Administration*, May 2025, p. Operations-AST-1, https://www.transportation.gov/sites/dot.gov/files/2025-05/FAA_FY_2026_Budget_Estimates_CJ.pdf.

[133] GAO, *Commercial Space Transportation: Improvements to FAA's Workforce Planning Needed to Prepare for the Industry's Anticipated Growth*, GAO-19-437, pp. 28-29, https://www.gao.gov/products/gao-19-437.

[134] Marlis McCollum, "Countdown to Efficiency: Accelerating Commercial Space Launch Approvals," MITRE Corporation, press release, May 29, 2025, https://www.mitre.org/news-insights/impact-story/countdown-efficiency-accelerating-commercial-space-launch-approvals.

[135] Federal Acquisition Regulation, Subpart 7.5, January 17, 2025, https://www.acquisition.gov/far/subpart-7.5.

[136] Testimony of Kelvin Coleman, 2024.

Congress may choose to authorize appropriations for these or other items. For instance, the Licensing Aerospace Units to New Commercial Heights Act (LAUNCH Act; S. 1961), would, if enacted, direct the FAA to develop and maintain a digital licensing, permitting, and approval system and authorize $5 million in appropriations for FY2025 to develop such a system.

### Reduced Resources

Congress may instead choose to reduce appropriations for FAA AST. Congress may determine that efficiencies—such as those gained from the office's Part 450 regulations, which are intended to be streamlined compared to legacy regulations, or from ongoing automation efforts, such as LEAP—might allow FAA AST to operate with less funding. As some of these activities are ongoing, the extent of such efficiencies and potential cost savings may require study to determine.

Similarly, Congress may direct FAA AST to further streamline its licensing processes and requirements or develop techniques or technologies that would enable additional efficiencies. In such a case, the office may be able to fulfill its statutory requirements with fewer resources or staff. For example, in its FY2026 budget request, the Trump Administration proposed that the commercial space transportation safety program within the FAA's Research, Engineering, and Development account shift its focus to research that might enable "improvements [that] help to streamline processes, ensuring increased efficiency and reduced license processing times." The Administration proposes that such research include risk-based decisionmaking techniques and analytics; new technologies, standards, and processes for licensing; and artificial intelligence.[137]

Congress may also assess FAA AST's activities to determine whether certain efforts might be scaled back or are not necessary for FAA AST to fulfill its statutory duties. Using the previous example, the President requested $4.2 million for commercial space transportation safety in FY2026, a decrease of about $8.18 million compared to FY2025 enacted levels ($12.38 million).[138] In assessing the office's activities, Congress may determine that certain activities should be reduced or streamlined and may, in turn, decide to decrease associated appropriations.

Congress may also consider authorizing the collection of user fees from commercial space operators. User fees might be allocated toward supporting the FAA's commercial space activities in place of appropriations. In such instances, user fees would shift costs from the federal government to commercial space operators. Alternatively, revenue generated from user fees might augment, rather than replace, the FAA's appropriations.

### User Fees

Congress may authorize AST to collect user fees, which could be allocated toward addressing perceived budget shortfalls. Statute prohibits the collection of fees for commercial space launch and reentry unless specifically authorized by law.[139] Congress may develop legislation that authorizes AST to collect such fees to support the activities of AST, ATO, or both.

The Administrative Conference of the United States (ACUS)—an independent agency in the executive branch charged with identifying and promoting efficiency in federal agency procedures

[137] DOT, *Budget Estimates: Fiscal Year 2026. Federal Aviation Administration*, May 2025, p. Research, Engineering & Development-32, https://www.transportation.gov/sites/dot.gov/files/2025-05/FAA_FY_2026_Budget_Estimates_CJ.pdf.

[138] DOT, *Budget Estimates: Fiscal Year 2026. Federal Aviation Administration*, May 2025, p. Research, Engineering & Development-32, https://www.transportation.gov/sites/dot.gov/files/2025-05/FAA_FY_2026_Budget_Estimates_CJ.pdf.

[139] 51 U.S.C. §50920.

and functions—has issued several recommendations relating to user fees, in general, including for Congress and for federal agencies. ACUS recommends that Congress or federal agencies identify the purpose of the user fee program "such as shifting the costs of a program from taxpayers to those persons or entities whom the program benefits, supplementing general revenue, or incentivizing or discouraging certain behavior."[140]ACUS also recommends that Congress or federal agencies consider whether a user fee "may have a negative or beneficial effect on the behavior of individuals or entities subject to that fee," as well as "whether the user fee might have other public benefits, such as promoting equity, reducing barriers to market entry, incentivizing desirable behavior, or producing some other socially beneficial outcome, or might have other public costs."[141]

Many stakeholders in the commercial space industry argue that fees would be burdensome to the industry.[142] Relevant considerations in weighing the impact of such fees include the U.S. commercial space industry's international competitiveness and whether certain companies might be more affected than others. The cost of such a fee may be passed on to customers, who may in turn find that the additional cost makes U.S. services less attractive than those of other providers that are not subject to such fees.

The costs of user fees may also impact certain companies more than others. For instance, new entrants to the industry may find user fees to be burdensome as they develop their capabilities and begin to compete with more established providers. Should such costs be passed to customers, a user fee may also impact companies in other space sectors who procure launch services from U.S. companies. The commercial space industry is a capital-intensive and high-risk sector.[143] This may amplify the impacts of user fees on launch providers and customers.

The specific structure of a potential user fee would likely determine how different companies are affected. User fees collected per launch, rather than per license, would also impact companies with high launch volumes more heavily than those with less frequent launches. For example, a user fee collected per launch may affect SpaceX more than other providers, as SpaceX conducts more launches than its competitors.[144] In 2024, the company conducted 134 Falcon launches. As another example, user fees collected in proportion to payload mass may impact companies deploying payloads to low Earth orbit more than those deploying in higher orbits. Reaching higher orbits requires more fuel than reaching lower orbits, which in turn reduces the payload capacity of launch vehicles to accommodate the additional mass of increased fuel. A user fee, however, may create an opportunity for critical functions of FAA AST (e.g., license application review, inspections) to be self-supported. Congress may determine that the benefits of such a fee outweigh the costs, or Congress could structure the fees in a way that balances revenue generation and potential impact on industry. For instance, the fees might be structured to reflect the burden

[140] Administrative Conference of the United States (ACUS), "Adoption of Recommendations," 89 *Federal Register* 1517, January 10, 2024. ACUS is an independent executive branch agency whose mission is to identify and promote improvements in the efficiency, adequacy, and fairness of federal agencies' regulatory programs, administration of grants and benefits, and performance of governmental functions.

[141] ACUS, "Adoption of Recommendations," 89 *Federal Register* 1517, January 10, 2024.

[142] Minho Kim, "Biden Takes Aim at SpaceX's Tax-Free Ride in American Airspace," *New York Times*, April 4, 2024, https://www.nytimes.com/2024/04/04/us/politics/spacex-biden-musk-taxes.html.

[143] Jack Kuhr, "Three VC Investors Weigh in on the State of Investing in Space," *Payload*, December 4, 2024, https://payloadspace.com/three-vc-investors-open-up-about-investing-in-space/.

[144] Stephen Clark, "Companies May Soon Pay a Fee for Their Rockets to Share the Skies with Airplanes," *ArsTechnica*, June 15, 2025, https://arstechnica.com/space/2025/06/companies-may-soon-pay-a-fee-for-their-rockets-to-share-the-skies-with-airplanes/.

on AST staff (e.g., number of applications, modifications). Congress could also reduce fees for new or smaller providers.

Currently, certain space operators require more FAA ATO and AST attention than others. In particular, the FAA's Commercial Space Data platform indicates that SpaceX has conducted the most licensed launches (a total of 494) out of all FAA-licensed operators. The operator with the second highest number of licensed launches, Rocket Lab, has 64. As then-Executive Director of Operational Safety at AST Dan Murray reported, SpaceX receives "the majority of our [i.e., AST's] resources because they're doing the majority of the operations."[145] Murray reports that "80% of the overtime that we log, and this is hundreds of hours a month, goes to SpaceX."[146] Congress may consider additional funding for the agency or compensation from operators on actual costs or usage.

In the June 2025 draft budget reconciliation bill, the Senate considered a proposal to amend statute to allow the collection of user fees for space launch and reentry.[147] This fee would, if enacted, direct the Secretary of Transportation to charge a fee for each launch and reentry. The fee amount is to be based on the launch or reentry's payload mass, up to a certain amount; the dollar amount per pound and the maximum amount to be charged would change each year. The fees collected would be used "for the purposes of expenses of" FAA AST as well as efforts to upgrade airspace integration for space launch and reentry, as required by the FAA Reauthorization Act of 2024 (P.L. 118-63).[148]

Should Congress elect to authorize the collection of fees for commercial space launch and reentry, possible considerations include the following:

- How should fees be levied—for example, by each *license* or each *launch*? The appropriateness of each may vary depending on whether the intent of the fee is to support the FAA, or a particular office thereof, and/or to incentivize or disincentivize certain behaviors on the part of commercial space companies.
- How should such fees be used—for example, to support AST, ATO, or a combination thereof? The fee structure proposed in the Senate draft budget reconciliation would, if enacted, support AST and efforts to upgrade airspace integration for space launch and reentry, as required by the FAA Reauthorization Act of 2024 (P.L. 118-63). In this framework, at least some of the funding would support efforts to update integration of space launch into the national airspace. The FAA Reauthorization Act requires that this upgrade be completed by December 2026; after this date, fees collected under such authority, if enacted, would support AST alone. Congress could direct that fees be used to support AST, ATO, or both.
- How should the fee amount be determined—for example, by congressional direction or formula or through agency discretion? Congress may wish to define the fee or methodology in order to determine that the amount is in line with their

[145] Jeff Foust, "'Pending Regulatory Approval': Launch Companies Struggle with Licensing," *Space Review*, September 23, 2024, https://www.thespacereview.com/article/4861/1.

[146] Lloyd Lee, "Elon Musk Has Beef with the FAA. The Agency Still Puts in a Lot of Work for Him," *Business Insider*, September 15, 2024, https://www.businessinsider.com/elon-musk-spacex-faa-overtime-regulations-2024-9.

[147] Sen. Ted Cruz, "Chairman Cruz Releases Budget Reconciliation Text," June 5, 2025, https://www.commerce.senate.gov/2025/6/chairman-cruz-releases-budget-reconciliation-text.

[148] Section 630 of the FAA Reauthorization of 2018 (P.L. 118-63) requires that the FAA administrator carry out a project to expedite the development, acquisition, and deployment of technologies and capabilities to aid in space launch and reentry integration into the national airspace, with a date of operational readiness not later than December 31, 2026.

intentions; however, setting amounts in law may make it difficult to adjust fees should technological advancement happen unexpectedly or should the market conditions of the industry change. Congress could allow the FAA to determine the amount through a rulemaking process, which would allow the agency to contribute its technical expertise and the public, including industry, to comment on the proposed methodology. Congress could also require that DOT, the FAA, or AST raise in fees what it costs them to review, allowing each agency to set the fees on the basis of its existing and future needs.

## Proposals to Reorganize AST

AST has been established within the FAA administratively. Congress may consider proposals to move AST out of the FAA and reorganize it as a unit reporting directly to the Secretary. Some Members of Congress and stakeholders within the commercial space industry have proposed reestablishing AST as a modal administration reporting directly to the Secretary of Transportation.[149] Others have proposed placing AST within the Office of the Secretary of Transportation.[150] In either case, they assert, removing AST from the FAA would emphasize the importance of the space industry and may improve the resourcing of the office. Others disagree, noting that moving AST out of the FAA might introduce new challenges in coordinating with relevant FAA offices, such as ATO, and that such a move might not necessarily translate to increased resources or prioritization in rulemaking.[151]

Existing modal administrations have been established by statute,[152] and Congress may consider legislation to reorganize AST as a modal administration. Such legislation has been introduced. For instance, Senators John Cornyn, Ben Ray Luján, Rick Scott, and Scott Kelly introduced the LAUNCH Act (S. 1961), which would, if enacted, establish a Commercial Space Transportation Administration that would report directly to the Secretary of Transportation and be responsible for commercial space launch and reentry activities.

Existing units within the Office of the Secretary of Transportation have been established statutorily and administratively.[153] Legislation to move AST out of the FAA and reestablish it as a unit with the Office of the Secretary or elsewhere within the department has not been introduced in the 119th Congress.

Should Congress elect to develop legislation to move and reorganize AST, possible considerations include the following:

- What costs and benefits might accrue from elevating AST out of the FAA?
- How might a proposed reorganization impact congressional oversight and AST's relationships with stakeholders?

[149] DOT is composed of nine *modal administrations*, or agencies responsible for different aspects of their respective modes of transportation.

[150] GAO, *Federal Aviation Administration: Stakeholders' Perspectives on Potentially Moving the Office of Commercial Space Transportation*, GAO-18-96, October 2017, https://www.gao.gov/assets/gao-18-96.pdf.

[151] GAO, *Federal Aviation Administration: Stakeholder's Perspectives on Potentially Moving the Office of Commercial Space Transportation*, GAO-18-96, October 2017, https://www.gao.gov/assets/gao-18-96.pdf.

[152] 49 U.S.C. Chapter 1.

[153] See, for example, 49 U.S.C. §102(i), which establishes a chief travel and tourism officer within the Office of the Secretary.

- To what extent, if at all, does AST utilize authorities specific to the FAA? If it does, should those authorities be given to AST as well or exercised through FAA?
- How should the office be led—for example, by a career civil servant or a political appointee? What process would be used to select and appoint the head of the newly elevated office?
- The FAA provides AST with physical office space and with legal, human resources, regulatory, and administrative support. What might be the costs of replacing the FAA's support if AST is elevated? Might DOT provide similar support? Alternately, would AST be responsible for procuring office space and for providing its own support capabilities?
- What processes and procedures should AST use for coordination and communication with the FAA and with other federal agencies?

Alternatively, Congress may determine that the location of AST is appropriate or may defer to the Secretary of Transportation or the Administrator of the FAA on matters of agency organization.

Certain reorganizations may not require congressional direction. AST was established by and has since been reorganized by order of the Secretary of Transportation. In 1984, the Secretary of Transportation created AST within the Office of the Secretary to fulfill the responsibilities outlined in an executive order issued by President Ronald Reagan designating DOT as "the lead agency within the Federal government for encouraging and facilitating" commercial space launch.[154] In 1995, the Secretary of Transportation transferred this office to the FAA.[155] The Secretary of Transportation could choose to move AST administratively.

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[154] DOT, "Organization and Delegation of Powers and Duties; Commercial Space Launch Act," 50 *Federal Register* 9036, March 6, 1985, https://archives.federalregister.gov/issue_slice/1985/3/6/9035-9038.pdf; Executive Order 12465 of February 24, 1984, "Commercial Expendable Launch Vehicle Activities," 49 *Federal Register* 7211, February 28, 1984, https://archives.federalregister.gov/issue_slice/1984/2/28/7211-7212.pdf.

[155] DOT, "Organization and Delegation of Powers and Duties; Transfer of Delegations from the Director of Commercial Space Transportation to the Administrator of the Federal Aviation Administration," 60 *Federal Register* 62762, December 7, 1995, https://www.govinfo.gov/content/pkg/FR-1995-12-07/pdf/95-29867.pdf.

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