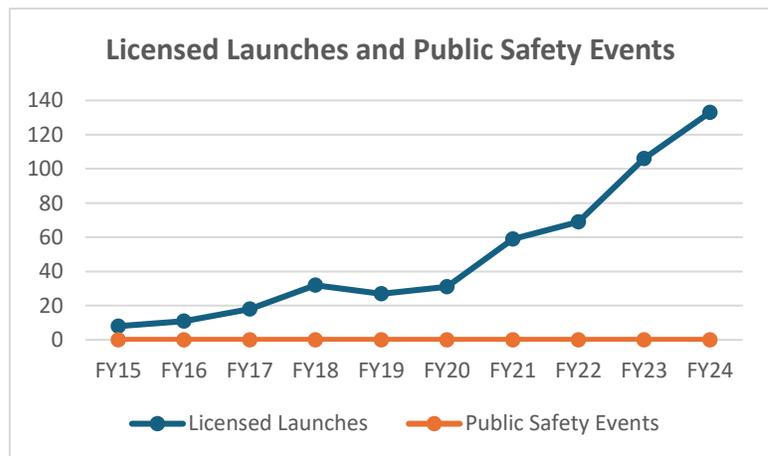


Testimony of Mike French
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before the
Subcommittee on Space and Aeronautics
Committee on Science, Space, and Technology
U.S. House of Representatives

Chairman Babin, Ranking Member Sorensen, and distinguished members of the Subcommittee, thank you for the opportunity to provide testimony today on the importance of encouraging commercial space innovation while maintaining public safety.

Growth and Safety

The U.S. launch sector has seen tremendous growth over the last decade. We have seen FAA-licensed launches increase from eight in FY 2015 to 133 in FY2024. We have seen over \$28 billion invested in the U.S. launch industry over the last decade,ⁱⁱ the establishment of several new U.S. launch companies, the development of multiple new U.S. launch vehicles, and the emergence of global, U.S.-based space tourism businesses. Throughout this growth period, the U.S. has maintained a 100% public safety record.



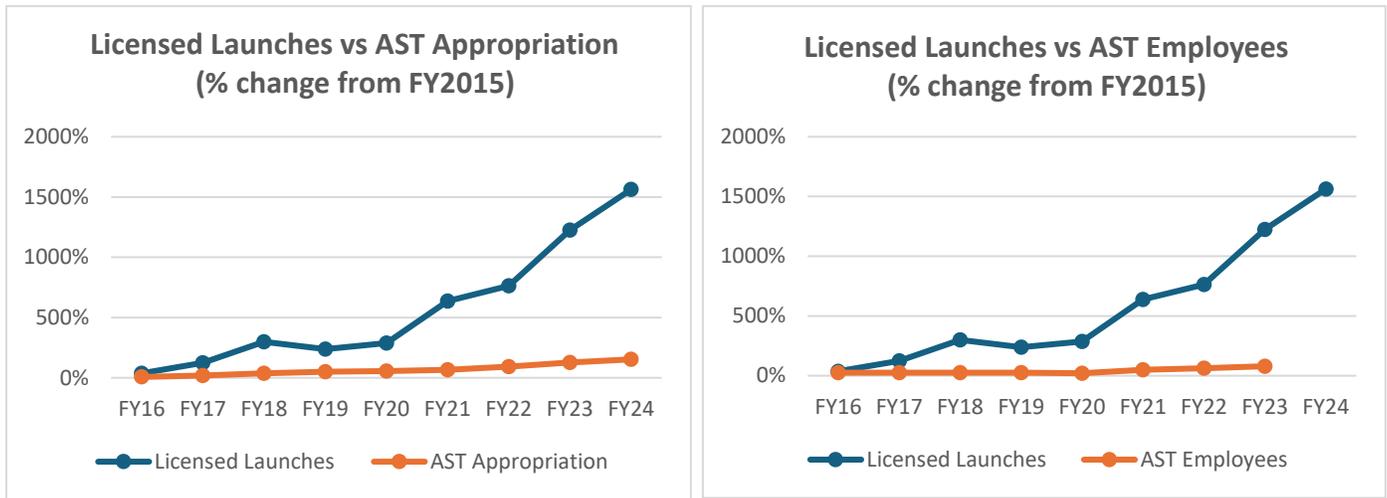
This growth, however, has stressed the licensing framework and provides Congress with two

opportunities to encourage commercial space innovation while maintaining public safety: (1) addressing resource constraints within FAA’s Office of Commercial Space Transportation (AST), the office responsible for licensing U.S. commercial launches, and (2) alleviating challenges with the implementation of a new set of licensing regulations, known as Part 450.

Resource and Workforce Constraints

The growth in licensing activity has far outpaced the growth in AST resources. From FY2015 to FY2024, licensed launch activity grew 1,563% compared to AST appropriations growth of 153% and AST employee growth of 77% (employee data only available to FY2023). This resource

constraint results in a workforce shortfall at AST, while also slowing process improvements, such as development of a tool to provide more transparent application tracking.



Source: Space Policy Group analysis from FAA and GAO data. FY24 employee data not available.

The Government Accountability Office (GAO) recently examined AST’s workforce and found workforce challenges are directly impacting licensing activity. The GAO found,

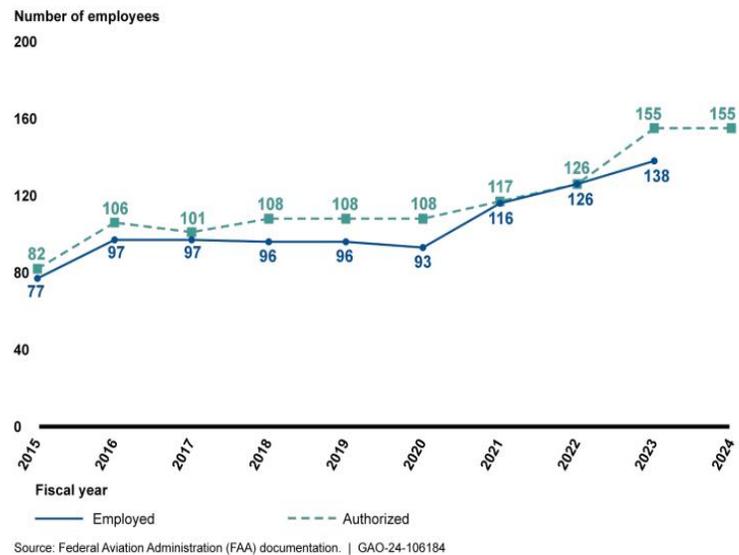
“... these ongoing staffing challenges have affected how AST carries out some of its licensing and post-licensing oversight responsibilities, including for operations with humans onboard. For example, as a result of limited staff, AST officials told us that the office has decreased the amount of assistance provided to operator consultations prior to license evaluation. AST officials also told us that the office prioritizes the highest risk operations for in-person inspections and conducts other inspections remotely or through reviewing post-activity reports from operators.”

The GAO further identified AST challenges in employing personnel up to its authorized hiring levels (see chart below).ⁱⁱⁱ GAO noted competition with private industry and training as two barriers to AST meeting its authorized staffing needs. AST faces competition with private industry both to hire new staff and to retain experienced staff. Moreover, new staff require on-the-job training from current experienced staff, aggravating near term staffing constraints. Continuing resolutions also impact the hiring process, as funding uncertainty and lack of availability of new funds prevent AST from starting the hiring process.

Related COMSTAC Activity

The FAA maintains an external advisory body known as the Commercial Space Transportation Advisory Committee (COMSTAC) to provide information, advice, and recommendations on issues concerning the U.S. commercial space transportation industry.^{iv} Members of the COMSTAC and space trade associations represented by members of the COMSTAC have consistently pressed for additional resources to support licensing activity at AST. This includes letters to Congress in support of AST’s budget request for additional licensing staff.^v

AST Authorized vs Employed Workforce



On the workforce front, COMSTAC is currently tasked with providing recommendations on strengthening AST’s hiring practices and maintaining current employees’ technical knowledge. The COMSTAC is considering:

- Programs and opportunities to facilitate greater FAA employee and industry interactions and knowledge sharing;
- Training and development activities for FAA employees; and
- Methods to increase the workforce pipeline through academic partnerships.

The COMSTAC is currently gathering inputs on these topics to develop recommendations for AST at its upcoming September public meeting.

Part 450 Implementation Challenges

The Part 450 rules were intended to streamline the licensing process by allowing launch operators to provide their own means of compliance for certain requirements (“performance-based rules”) and by allowing multiple launches and reentries to occur under a single license. Challenges have emerged in the implementation of the Part 450 rules, exacerbated by the resource challenges discussed above. A requirement that launch vehicles operating under the legacy regulatory structure must transition to Part 450 by 2026 is creating additional strain on the system. These strains have visibly manifested across several aspects of the licensing process.

Pre-application Process

The Part 450 regulatory process includes a period of “pre-application,” where AST determines whether the application is providing adequate means of compliance to move forward into a 180-day time-limited evaluation process. Operators have expressed concern about the lack of a set timeline for the preapplication process and transparency into the status of an application during this period. Moreover, operators note a lack of clarity on what exactly is required to be deemed “complete enough” to proceed into the application process. Operators have also noted circumstances where a change in the AST employee during the pre-application process can lead to a conflicting set of comments from examiners on the same matter, further extending the process.

Advisory Circulars and Performance-Based Determinations

Part 450 is intended to create a performance-based framework in which an operator can meet requirements using its own means of compliance. This framework is buttressed by “Advisory Circulars” (“ACs”), FAA-produced documents that provide *one* means of compliance for a particular regulatory requirement. Operators have expressed concern that ACs have become *the* means of compliance, leading operators to work toward the AC and away from performance-based determinations. This dynamic has increased the importance of having ACs that address all key areas of the new regulations. From some operators’ perspectives, having a way to meet the regulations via an AC is preferable to a “trial and error” approach, even if that is counter to the intent of Part 450 and may be a suboptimal approach overall.

Limited Approvers

Some aspects of the Part 450 regulations require operators to provide additional or different analyses than were regularly accepted under the legacy regulations. From some operators’ perspectives, approval of these additional or different analyses requires determinations from a small set of senior AST experts, creating a natural bottleneck. Moreover, these same experts are often required to make important determinations on the substance of key ACs, further stretching their availability.

Interagency Decision-making

In certain steps of the licensing process, AST and the launch range entity, for example the Space Force or NASA at certain federal ranges, will have a role in conducting their own safety analyses. The Part 450 regulations set up a framework for the use and approval of these other agencies’ assessments to meet regulatory requirements. Despite this framework, operators have raised concerns about multiple or duplicative safety analyses being required across these agencies. Concerns have also been raised about AST requiring extended timelines for the acceptance of another agencies’ findings.

Environmental Requirements

FAA launch licensing is considered a federal action under the National Environmental Policy Act (“NEPA”) requiring environmental impacts of launch and reentry activities to be considered before a license can be issued. AST has historically used existing NEPA findings to support launch and reentry licenses. According to a recent GAO analysis, 19 of the 22 NEPA reviews FAA prepared in support of launch and reentry were based on previous environmental assessments or environmental impact statements.^{vi} The increased growth of spaceflight in number of launches, location of launches, and variety of launch vehicles raises the potential for additional stakeholder concerns in NEPA determinations, which could add significant time and resource constraints to the licensing process if space activities were to receive NEPA challenges typical in other sectors.

Related COMSTAC Activity

COMSTAC has engaged in substantive efforts over the last two years to provide feedback to AST on the implementation of Part 450. In July 2023, COMSTAC provided a comprehensive document on “Part 450 – Challenges and Recommendations.”^{vii} The COMSTAC provided feedback on specific Part 450 regulations covering: (1) the importance of Advisory Circulars (ACs); (2) the timeframes for reviewing application materials and providing timely feedback; (3) the use of pre-defined versus performance-based means of compliance; (4) the need for clarity on reentry requirements versus launch requirements; (5) transparency into the software and analysis tools that are acceptable for use; and (6) the need to account for changing technical standards during an ongoing licensing effort.

In April 2024, the COMSTAC provided a series of additional recommendations related to Part 450.^{viii} These additional recommendations included: (1) the FAA should engage meaningfully and consistently with FAA applicants and interested parties to define clear goals for regulatory reform; (2) the FAA should reinvigorate its efforts to publish Advisory Circulars (ACs) that address aspects of the Part 450 regulations; (3) the FAA should evaluate a change to its policy and regulations to address the significant challenges with its Means of Compliance review and methodologies for Flight Safety Analyses; and (4) the FAA should expeditiously move forward with the Part 450 Space Advisory Rulemaking Committee (SpARC).

Congressional Action

Congress can address the resource constraints outlined above and has avenues to alleviate the challenges of Part 450 implementation.

- *Resources* – Congress has already taken commendable action in the House and Senate Appropriations Committees with marks supporting AST’s request for a 36% budget increase to \$57 million. This request includes \$7.9 million to hire additional licensing staff.
- *Workforce* – In addition to supporting AST’s requested funding, Congress could examine additional hiring flexibilities and pay and retention bonus authorities to attract and retain key licensing staff. To increase AST employees’ knowledge of industry practices, Congress could also consider the development of an AST / industry workforce sharing program akin to the Department of Defense’s Public-Private Talent Exchange program.
- *Application Timelines* – The Part 450 preapplication process has minimized the purpose of the 180-day review timeline, and Congress should consider alternative means of maintaining a time-limited and transparent licensing process. Congress should consider whether to track metrics at the beginning of the pre-application process and track time based on whether the application is in AST or the applicant’s possession. This “chess clock” versus “shot clock” approach, coupled with tools such as AST’s planned License Electronic Application Portal (LEAP) tool, should provide better transparency to applicants, AST, and Congress.
- *Legacy Means of Compliance* – Congress should consider whether operators should be allowed to meet the legacy regulatory requirements instead of Part 450 requirements while key advisory circulars are still being developed. This change could be particularly impactful before AST resources are further constrained as legacy licensees transition to Part 450.
- *Interagency Decision-making* – Congress should consider additional direction and requirements to minimize duplication of safety analyses across AST and federal range agencies and allow operators to use available range analyses that meet requirements.
- *Environmental Requirements* – Congress is actively reviewing the overall federal environmental regulatory framework as it applies to renewable energy development. Congress can consider whether some of these efforts are applicable to the launch licensing framework.

Thank you for the opportunity to present this testimony and for the Subcommittee’s enduring commitment to the growth and safety of the U.S. space industry.

ⁱ This testimony is provided in my personal capacity and does not represent any company or clients’ views.

ⁱⁱ Space Capital dashboard available at spacecapital.com.

ⁱⁱⁱ *Commercial Space Transportation, FAA's Oversight of Human Spaceflight*, Government Accountability Office, February 2024, available at <https://www.gao.gov/assets/gao-24-106184.pdf>.

^{iv} COMSTAC members and information on COMSTAC meetings available at https://www.faa.gov/space/additional_information/comstac.

^v See, e.g., AIA/CSF letter available at <https://www.aia-aerospace.org/publications/aia-csf-fy23-thud-letter/>.

^{vi} *Commercial Space Transportation, How FAA Considers Environmental and Airspace Effects*, Government Accountability Office, April 2024, available at <https://www.gao.gov/assets/gao-24-106193.pdf>.

^{vii} COMSTAC *Part 450 – Challenges and Recommendations* document available at <https://www.faa.gov/media/68016>.

^{viii} COMSTAC document available at <https://www.faa.gov/media/78751>.