



Testimony before the
House of Representatives Committee on Small Business
Subcommittee on Innovation, Entrepreneurship, and Workforce Development
*Moving Upwards and Onwards:
The Workforce and Innovation Needs of the Aviation and Aerospace Industry*

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Introduction

Good morning, Chair Crow, Ranking Member Kim, and Members of the Subcommittee.

My name is Blake Scholl, Founder and CEO of Boom Supersonic. Thank you for inviting me to testify before you on entrepreneurship; the importance of innovation and workforce development in U.S. aerospace; and our efforts to ensure the safe, sustainable reintroduction of commercial supersonic air travel.

At Boom, we believe in a world where more people can go to more places more often. Today, the barriers of time and inconvenience limit us from experiencing much of what the world has to offer. By building transportation that is faster, more convenient, and more sustainable, we can unlock new possibilities to connect with one another.

Boom is redefining long-distance travel beginning with Overture, our supersonic commercial airplane. We are developing Overture to satisfy three top-line objectives: speed, safety, and sustainability. Aboard Overture, London would be just 3.5 hours from New York, and Sydney becomes as accessible as Honolulu is today. Ultimately, we envision a future in which anyone can buy a ticket and enjoy the benefits of high-speed travel. Speed powers growth and transformation, and increasing the speed of travel would foster greater human connection.

Until the middle of the twentieth century, people could expect continued improvements in travel speeds. Railroads, steamships, piston-powered airliners, and jets each represented a step change in how we got around. In the 1960s, at the dawn of the jet age, it seemed that supersonic aviation was right around the corner—Concorde took flight only ten years after Pan Am took delivery of the first 707. But while a technological marvel in its time, Concorde was loud, costly, and fuel hungry.

The idea of supersonic commercial travel was perhaps ahead of its time in the 1960s, as the technology for economically and environmentally sustainable supersonic flight



did not yet exist. And as a result, we are flying no faster in 2022 than we were in 1960. The world has now gone more than sixty years without a meaningful improvement in the speed of long-distance travel. But today, thanks to fundamental advancements in the aviation industry and key breakthroughs at Boom, supersonic flight will be more comfortable, more affordable, more sustainable, and safe.

We are seeing interest in faster travel across the globe. In the context of global airline customers, we see this as a positive, because we want everybody to have access to speed. But in the manufacturing context—on the question of which country gets to claim leadership in next-generation passenger aircraft—we need to be more wary. It is important to note that the United States is not the only country pursuing new supersonic aircraft development—China and Russia are also very publicly investing in this field. The promise of this sizable commercial market and potential military advantages will spur international competition, and the United States must remain in the lead.

Innovation

Powering these advancements is a revolution in energy, which is unlocking a host of amazing new products—electric cars, air taxis, supersonic jets. In history, every revolution in energy has brought along diverse benefits, including in the speed of travel. In the nineteenth century, coal powered the transition from sail to steam and horse to railroad. In the first half of the twentieth century, oil powered the transition to airplanes. And this decade, alternative fuels will power the transition to sustainable supersonic flight.

We are entering a new era of sustainable energy production, and Overture is a new supersonic airliner built for this future. Overture will be capable of running on 100% sustainable aviation fuels, facilitating net-zero carbon flights. Sustainable aviation fuel will ensure enduring U.S. energy independence—and we need continued leadership from Congress and the White House to adopt policies and incentives that allow domestic producers to meet our aviation sector's demand using our waste materials, agricultural waste, or carbon dioxide from the air.

Beyond net-zero carbon fuels, Overture will leverage state-of-the-art computational design methods, advanced composite materials, innovative clean and quiet propulsion concepts, and modern turbofan engines. These technologies represent sixty years of advancement, but supersonic commercial aviation is still in its early days. Over time, we expect continued investment and innovation to lead to supersonic airliners that are even more efficient and less expensive to operate. This progress will lower ticket prices, reduce fuel burn and emissions, and ultimately make high speed flight available to all passengers.



While incremental innovation happens continuously in this industry, it takes new entrants like Boom to change the fundamental paradigm of travel—both in terms of speed and sustainability. Boom has built a culture that values step-change innovation, and we have assembled leaders and engineering talent from across the aviation sector. Combining this foundation with our mission-aligned customers, suppliers, partners, and investors helps us innovate faster than the incumbents.

Speed, Safety & Sustainability

At Boom, we are guided by three pillars: speed, safety, and sustainability. It is only thanks to continued innovation—the focus of this hearing—that we are able to develop a new supersonic airliner that satisfies all three imperatives.

Safety

At Boom, we have worked diligently since day one to build a strong safety culture and incorporate safety technology systems. The U.S. aviation industry has an exceptional safety record, and commercial aviation is by far the safest mode of transportation. We are committed to build on that legacy. We have been proactively developing a safety management system and incorporating lessons learned and best practices to ensure Overture is designed and built with multi-layered safety in mind at every step.

Sustainability

Sustainability is embedded into every facet of Boom's aircraft program, and Boom is transforming aviation by accelerating the advancement of these technologies—we believe the fastest flight should also be sustainable.

Aviation faces two primary environmental challenges—noise and emissions—and the team at Boom is diligently working to optimize efficiency and sound levels in the aircraft design. Overture will meet the same stringent noise levels set for subsonic jets through the use of innovative new technologies. Overture will blend into existing soundscapes, and because of the benefit of speed, airlines may be able to reduce operations during sensitive nighttime hours. Because Overture will fly at supersonic speeds only over water, the aircraft will not create sonic booms over communities. To address communities' concerns about Overture's impact, we plan to engage with airports and stakeholders well ahead of Overture's entry into service to understand and address their concerns. We also want to highlight the societal and economic benefits that Overture will bring to communities and have our neighbors share our excitement to bring back supersonic commercial air service.

Regarding emissions, net zero carbon operation is at the core of our commitment to preserving the earth's climate. Beginning in 2021, Boom achieved a major milestone on this mission by achieving carbon neutrality across our company. Looking forward, Overture will operate on up to 100% sustainable aviation fuels (SAF), a key strategy



for sustainable long-haul aviation. We have committed to achieving net zero carbon emissions by 2025—in just three years—well ahead of industry and government targets.

U.S. global leadership in aviation

The U.S. has long been the global leader in aerospace, and at Boom we are determined to see the U.S. be the first to introduce sustainable supersonic travel. U.S. airlines have shown early interest in Overture. Last year, Boom and United Airlines announced a commercial agreement for United to purchase fifteen Overture airliners, with an option for an additional thirty-five more. The United agreement brings Overture's orders and pre-orders to seventy aircraft—by comparison, only fourteen Concorde ever saw commercial service.

To ensure that U.S. leadership endures and we remain ahead of our competitors, the federal government must continue to nurture innovation and encourage those companies and innovators building the next generation of aerospace technology.

Benefits to the U.S. Military and Defense Industrial Base

New supersonic aircraft technology developed at Boom and in the supply base will not only have broad commercial benefits—it will also provide valuable new strategic options to the U.S. military. Overture would give the US military the ability to move people and cargo anywhere in the world in half the time. We cannot underestimate the political and military advantages that accompany this speedup.

Recent geopolitical events have shown that our security concerns can escalate at any moment. There is a major conflict at the gates of NATO, and the U.S. must continue to strengthen its homegrown industrial capacity. Fostering an industry around high-speed aircraft manufacturing would be transformative for the U.S. government and armed forces.

For the United States government, supersonic travel represents a significant expansion in people movement capabilities: conveying leaders across the world in half the time to resolve crises and build international connections; evacuating wounded soldiers to medical care in time to save lives.

In addition, transporting critical cargo is another compelling use case for large supersonic aircraft. A derivative of Overture could offer the Air Force a future strategic capability in rapid global transport and logistics—such as rapidly carrying life saving emergency supplies and communications equipment where they are needed.



Small Business Innovation Research (SBIR)

The Small Business Innovation Research (SBIR) is an important program for new entrants such as Boom, enabling cooperation with the government at the beginning of the process to accommodate potential military needs and advance aviation technology before these technologies are ready to be a program of record. Without SBIR and early investment by DOD, some of these technologies would never mature.

Boom is proud to have two Small Business Innovation Research (SBIR) contracts with the Air Force. Our first SBIR contract was awarded in 2020—we received a \$2M contract to explore how Overture’s interior could be adapted for military purposes. Our most recent SBIR (Strategic Funding Increase) contract is a three-year strategic cost-share partnership between the Air Force and Boom to accelerate research and development on Overture. Nominally, this partnership is a \$30 million/\$30 million match between the Air Force and Boom, but the Air Force is in fact leveraging the much larger amount of private capital that Boom has raised.

This lever is a critical benefit of programs like SBIR and STRATFI—in our case, this partnership allows the Air Force to leverage our private funds by 10 to 1, reducing the development costs for defense applications of supersonic technology. We are proud that the Air Force is interested in the advantages Overture offers, leveraging our R&D investments.

Through STRATFI, Boom is working directly with the Program Executive Officer, who is generally focused on growing capabilities, beyond R&D. The Air Force’s interest in our work sends a powerful signal to our investors and partners, enhancing the commercial viability of our aircraft and helping propel a flywheel of progress.

Recognizing that a strong U.S. defense industrial base is critical for our country in any conflict, a key benefit of this partnership is to expand and diversify the industrial base—fostering competition, improving resilience, and increasing optionality for defense procurement. Through SBIR, the Air Force established [AFWERX](#), an innovation arm that supports programs such as STRATFI. This important program lets the Air Force leverage capital-intensive technology projects focused on advanced capabilities like supersonic aviation.

The SBIR program is also consistent with the Department of Defense February 2022 report on the [State of Competition within the Defense Industrial Base](#). Competition is vital to the defense industrial base. DoD made 5 recommendations including:

- *Increasing New Entrants* to “counteract the trend of overall shrinking of the DIB” and;
- *Increasing Opportunities for Small Businesses* “in defense procurement, with an emphasis on increasing competition in priority industrial base sectors.



Workforce

One critical lesson we learned through the pandemic is the importance of domestic manufacturing and our supply chain. Boom is proud to be a part of a renaissance in U.S. manufacturing. We are proud that the supersonic future will be built here in the United States, leveraging the formidable talent, entrepreneurial spirit, and tradition of innovation in our workforce. Through this decade as we bring Overture to market, we will create thousands of manufacturing jobs—jobs that will enable more families to realize the promises of life in our country.

As commercial aviation enters this new era of faster travel, Boom is committed to investing in the next generation of engineering and manufacturing workers. America's aerospace workforce is unmatched in capability and quality, and we intend to inspire future generations to continue this progress.

Colorado: HQ, Engineering

Since 2014, Boom has been headquartered in the Denver Metro area of Colorado, and we have benefited immensely from the local talent ecosystem. We currently have 195 full-time employees. We continue to grow our Colorado workforce, which we expect to surpass 500 employees in the next 2–3 years.

North Carolina: Manufacturing

Recently, Boom also announced a significant expansion in Greensboro, North Carolina, where we will build our LEED certified Overture Superfactory to manufacture our first commercial airliner. We chose North Carolina after an extensive, nation-wide search for a strong talent pool, network of four-year colleges and technical schools, and proximity to the ocean for supersonic flight testing.

COVID impacts

While the pandemic significantly disrupted the aviation industry—and commercial travel has not yet fully rebounded—Boom has continued to progress through our development program. Since March 2020, the start of the pandemic, we have hired seventy full-time employees, and we were able to continue company expansion without relying on any federal financial assistance (e.g., Payroll Support Program). Because our company continued to operate and grow during this difficult time, we were able to maintain business relationships in the supply chain, providing some certainty to our aviation suppliers.

Talent

Since the beginning of the 21st century, innovation in aviation has dramatically increased bringing about drones, advanced air mobility, commercial space access and the return of supersonic travel. Advancements in technology, increasing interest from investors, and expanded government partnerships have all enabled such a positive



growth trajectory. In order to continue such growth, we have to continue to develop and attract the next generation of skilled, qualified workers. We are especially concerned with developing the right skills in future engineers and technicians who are entering the job market.

Boom has encountered challenges attracting and retaining high-quality talent, and we recognize this issue will grow as our company scales. In North Carolina, we plan to create over 2400 jobs over the next decade. In order to prepare the local workforce for this opportunity, we are performing outreach to technical colleges and 4-year programs to develop programs teaching the requisite skills for jobs in supersonic manufacturing.

Beginning in 2023, as part of our Emerging Talent program, we will launch an internship and apprenticeship program at our production facility in North Carolina—specifically for students who attend university, community college, and/or technical school in North Carolina. We are designing experiential learning programs that include custom onboarding, lunch-and-learn sessions, and a performance feedback system. Over the next ten years, we plan to create more than 200 of these opportunities.

How Congress Can Continue to Assist Small, Innovative Aviation Companies

The government plays an important role in ensuring that small businesses have the opportunity to compete and thrive. Government public-private partnerships like SBIR help small businesses grow, spurring economic growth, fostering competition and expanding the defense industrial base.

Investments in Sustainable Energy

Another successful mechanism that is advancing sustainable aviation innovation is the Federal Aviation Administration's (FAA) Continuous Lower Energy, Emissions and Noise (CLEEN) cost-share program. CLEEN has been a successful public-private partnership to help advance sustainable technologies and fuels. We would like to see this program awarded to more new entrants, helping small businesses innovate on critical technologies.

In order to fly in an increasingly more sustainable way, investments to commercialize SAF are critical. The SAF industry remains nascent, and is largely composed of small and medium enterprises. This burgeoning industry is critical to decarbonizing aviation. A number of government policy incentives would greatly benefit these emerging companies, including a SAF blenders tax credit and grants or loans for building the infrastructure required to scale SAF production.



Regulatory Certainty

Timely and effective regulation is critical to our success in certification and consequently bringing Overture to market. The FAA has also shown great leadership both domestically and at the International Civil Aviation Organization promoting the global standards necessary to develop, certify, and operate supersonic aircraft. Congressional support is essential to ensure this leadership continues.

SBIR

And finally, programs such as the Small Business Innovation Research (SBIR) are an excellent example of how the government can assist small businesses and how new companies like Boom can contribute to defense priorities while accelerating technological progress. As this powerful new sector emerges, maintaining a lead in supersonic aviation is vital for the future competitiveness of the U.S. military. Our supersonic program, starting with the Overture aircraft, will have second-order impacts in strengthening the U.S. defense industrial base. Through the SBIR program, the government can engage early to leverage and support continued U.S. innovation.

Conclusion

Thank you for having me here today, and I am happy to answer any questions.