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Boom Supersonic
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Subcommittee on Aviation
The Leading Edge: Innovation in U.S. Aerospace
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Good morning, Chair Larsen, Ranking Member Graves, and Members of the Subcommittee. My name is Blake Scholl, Founder and CEO of Boom Supersonic. Thank you for having me here today to talk about innovation 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 more places more often, and we want our children to grow up in such a world. Today, the barriers of time and inconvenience limit us from experiencing more of what Earth has to offer. By building transportation that is faster, more affordable, more convenient, and more sustainable, we can unlock new possibilities for human connection and for business.

Boom is redefining what it means to travel long distances beginning with Overture, our first supersonic commercial airplane. We envision a future in which anyone can buy a ticket and enjoy the benefits of high-speed travel. Aboard Overture, London would be just 3.5 hours from New York, and Sydney becomes as accessible as Honolulu is today. With Overture, three-day business trips could be done in just one day—you could attend meetings across an ocean and be home in time to tuck your children into bed. Speed powers growth and transformation, and increasing the speed of travel would foster greater human connection. And Overture is about more than just speed—we are also raising the bar for safety and sustainability.

Traditional wisdom says that supersonic flights are expensive, uncomfortable, noisy, and unsustainable. Thanks to key breakthroughs at Boom and to innovations across the industry, supersonic flight can now be not just faster, but also more comfortable, more affordable, and sustainable. For example, our whole-lifecycle approach to sustainability will facilitate net-zero-carbon Overture flights. Overture will also fly at supersonic speeds only over water, so communities will not experience sonic booms. Overture is already a massive leap forward from Concorde—the only supersonic commercial airplane to see lasting service—but Overture is only our first airliner. Ultimately, we want the fastest flight to be the most accessible, too.

Why now is the time for a paradigm shift in travel

Until the middle of the twentieth century, people could expect continued innovation in travel speeds. Railroads, steamships, piston-powered airliners, and jets each represented a significant improvement in how we got around. But in 2021, we're flying no faster than we were in 1960. The world has gone more than sixty years without a meaningful improvement in travel speeds. Limited by 1960s technology, Concorde was loud, costly, and fuel hungry. Concorde was a technological marvel in its time, but it was neither economical nor sustainable.

Over the subsequent decades, aviation saw steady improvements in efficiency and safety. Fundamental advancements and key breakthroughs allow Boom to bring back supersonic travel—this time, economically and sustainably. Overture will be a brand-new airliner optimized to run on 100% sustainable aviation fuels, facilitating net-zero carbon flights. It will leverage state-of-the-art computational design methods, advanced composite materials, and modern turbofan engines to increase efficiency and reduce noise. 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—reducing ticket costs, fuel burn, and emissions. Overture, along with other emerging technologies represented on this panel including advanced air mobility and electric propulsion, will be key pillars of the future transportation ecosystem. Someday, you might take an electric air taxi to the airport, board a supersonic jet, and fly across the planet at twice today's speed. Together, these modes will enable easier, more seamless point-to-point travel and a more connected world.

Safety

At Boom, we have been working diligently to build both a strong safety culture and safety technology from day one. The U.S. aviation industry has an exceptional safety record, and we are committed to build on that legacy. However, we are also mindful of recent tragic accidents, and we have been proactively incorporating learnings and program governance best practices to ensure Overture is designed and built with safety in mind at every step. At Boom, we have involved pilots in the design and development of our airplane programs since the beginning.

Our piloted supersonic demonstrator, XB-1, is a critical element of our safety culture. Designing, building, and testing XB-1 has given us the opportunity to build a safety-first mindset from day one and start to develop our safety management system well ahead of Overture assembly. XB-1 has helped mitigate risk from the Overture program.

In addition, our goal is that Overture will be the first clean-sheet airliner to seek certification in the aftermath of the COVID-19 pandemic. The global health crisis has brought significant changes to how we go about our lives—and in the context of air travel, it has shown all of us that passenger and crew health is a critical component of safety. We plan to incorporate state-of-the-art air filtration systems and other health-promoting innovations, ensuring that flying aboard Overture is both safe and healthy.



Environment and Sustainability

Air travel offers many benefits to society—facilitating cross-cultural understanding, fostering new trading relationships, and supporting millions of jobs. But it also creates externalities, including community noise and climate effects, that the aviation industry is working diligently to minimize. As a new company designing a new airplane from a clean sheet of paper, Boom has the opportunity to optimize our products for sustainability. We have built this mentality into our culture from the beginning, and we are committed to making supersonic flight something communities welcome. Our team is working to maximize efficiency and minimize noise in Overture’s design, and we plan to engage with airports and communities well ahead of Overture’s entry into service to understand their concerns and help develop noise-reducing flight procedures. Key for airport communities, Overture will meet the same stringent noise levels set for subsonic jets. Because Overture will fly at supersonic speeds only over water, Overture will not create sonic booms over communities.

Because Overture is a new airplane, Boom is able to take a whole-lifecycle approach to sustainability. This includes designing for clean manufacturing at our future final assembly line, where we plan to incorporate waste-minimizing production practices and leverage on- and off-site renewable energy, and it also includes planning for end-of-life recycling.

At the core of this whole-lifecycle approach is facilitating net-zero-carbon Overture flights. In the development phase, we are reducing tailpipe CO₂ emissions through airframe and engine design optimization. This step aligns economic and environmental goals. Next, we are ensuring that Overture can operate on up to 100% sustainable aviation fuels (SAF), a key strategy for more sustainable long-haul aviation, which will continue to rely on carbon-based fuels for some

time. Current-generation SAF enables up to 80% reductions in life-cycle carbon emissions when compared with conventional petroleum-based jet fuels, and emerging SAF technologies could offer even greater reductions in net CO₂. We believe the fastest and most comfortable flight should also be sustainable—and our goal is a net zero carbon future.

Beyond the carbon reduction benefits, SAF also reduces emissions of particulate matter, helping mitigate the non-CO₂ climate effects of aviation. SAF is currently only permitted to comprise up to 50% of a blend with petroleum-based fuels, but the clean-sheet nature of Overture allows Boom and our suppliers to design the airplane to use 100% SAF, capturing the fuel's full potential to reduce CO₂ and non-CO₂ effects. In the coming years, we will continue to engage with SAF producers to ensure adequate supply for Overture operations, and we expect to power Overture's engine test, certification, production test, and delivery flights using SAF. Lastly, we support and plan to use high-quality carbon offsets, including new-generation carbon removal technologies, where necessary to meet our net-zero pledges. Sustainability is at the core of Boom's mission to make the world dramatically more accessible.

U.S. global leadership in aviation

Boom is proud that Overture will be designed *and* assembled in the United States, leveraging the formidable talent, entrepreneurial spirit, and tradition of innovation in our workforce. And we are fortunate to draw on the expertise of a variety of partners—including Collins Aerospace, Amazon Web Services, Rolls-Royce, and others. We are a growing team, and over the next several years, we will continue to create well-paying engineering and manufacturing jobs to support the Overture program.

Beyond the immediate economic impacts of Boom and its partners, commercial supersonic manufacturing will have a sizable global economic impact. Leading investment bank UBS recently estimated the commercial supersonic market could be worth \$255 billion by 2040.¹ Undoubtedly, the promise of this market will spur international competition, and the United States must lead the charge.

The benefits of Overture go beyond commercial applications—for the United States government, supersonic travel represents a significant expansion in 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; and rapidly carrying life-saving emergency supplies where they are needed. Boom is excited to be working with the United States Air Force to adapt Overture for executive transport. Overture could offer the Air Force a unique combination of passenger capacity, speed, cabin space, and power to accommodate requirements of multiple missions, enabling accelerated diplomacy and greater responsiveness to crises. Beyond USAF missions, Overture could also become part of the Civil Reserve Air Fleet and enable humanitarian and other critical airlifts in half the time.

¹ [“The need for speed — How will supersonic jets transform the travel industry?”](#) UBS Q-Series, 01 December 2020.

The United States has long been a global leader in aviation. To ensure that this leadership endures, the federal government must continue to encourage innovation and facilitate the integration of new entrants into the National Airspace System. I would be remiss if I did not thank this Committee and Congress for your leadership in passing the bipartisan FAA Reauthorization Act of 2018, which helped drive important regulatory work to support new innovation. We are grateful for the direction Congress provided to the Federal Aviation Administration, which has exercised global leadership in developing economically reasonable, technologically feasible, and environmentally beneficial standards for supersonic aircraft—helping ensure that U.S. industry remains the leader in this field.

Regulatory certainty is critical to our success in 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. The FAA has set up an office to deal with new entrants such as advanced air mobility vehicles. These processes will be extremely helpful to facilitate the introduction of supersonic aircraft—and to wider U.S. efforts to support emerging technology in aviation. I ask that Congress continue to provide resources to support this important work.

Government also plays a key role providing policy incentives and resources for common infrastructure. We are grateful for the leadership role that this Committee has played in authorizing the FAA's Continuous Lower Energy, Emissions and Noise (CLEEN) program. CLEEN has been a successful public-private partnership to help advance sustainable technologies and we support expanding the program to include technologies applicable to new entrants. The technology behind SAF is well understood, but policy incentives will play a critical role in accelerating production and adoption. Boom supports measures such as blender tax credits to accelerate production of SAF, and we are working with a broad coalition of fuel producers, operators, airports, and manufacturers to advance this key policy.

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