



# SPACE FOUNDATION

Memorandum

United States Senate Committee on Armed Services

Nomination of Lieutenant General Bradley C. Saltzman to be General and Chief of Space Operations

September 13, 2022

## **Members Participating**

Senator Jack Reed (D-RI) *United States Committee on Armed Services Chair*

Senator James Inhofe (R-OK) *United States Committee on Armed Services Ranking Member*

Senator Jeanne Shaheen (D-NH)

Senator Kirsten E. Gillibrand (D-NY)

Senator Mazie K. Hirono (D-HI)

Senator Tim Kain (D-VA)

Senator Angus King (I-ME)

Senator Jacky Rosen (D-NV)

Senator Mark Kelly (D-AZ)

Senator Deb Fischer (R-NE)

Senator Tom Cotton (R-AR)

Senator Mike Rounds (R-SD)

Senator Joni Ernst (R-IA)

Senator Kevin Cramer (R-ND)

Senator Rick Scott (R-FL)

Senator Josh Hawley (R-MO)

Senator Tommy Tuberville (R-AL)

## **Summary**

Opportunity for members of the United States Senate Committee on Armed Services to question Lieutenant General Bradley C. Saltzman in lieu of his nomination to be General and Chief of Space Operations. Questions were raised to demonstrate his extensive knowledge of space operations, future plans if confirmed as CSO, as well as opinions on various international issues pertaining to space.

## Witnesses

Lieutenant General Bradley C. Saltzman, *Deputy Chief of Space Operations, USSF*



## Member Questions

**Senator Reed:** The senate version of the 2022 National Authorization Act deemed the Chief of Space Operations to be the force design architect, with certain exemptions. Do you think this is a workable designation and follows the intent of congress?

**Lt. Gen Saltzman:** Yes. The responsibilities given to General Raymond as the Chief of Space Operations is sufficient to accomplish the intent of Congress. If confirmed, I would continue to execute those same authorities and responsibilities.

**Senator Reed:** If confirmed, your responsibility will be to present training equipped forces to the U.S. Space Force, as well as support other commands. Is there any significant distinction in your opinion between your responsibilities and the different commands you will support?

**Lt. Gen Saltzman:** No, Senator. The responsibilities of the Chief of Space Operations are to make sure there are ready forces that have the flexibility to support all combatant commanders.

**Senator Reed:** Do you support the legislative proposal to create a full and part-time Space Force military personnel in lieu of a separate reserve?

**Lt. Gen Saltzman:** There are critical capabilities and expertise that currently reside in the Air Force reserves, as well as the Air National Guard. The primary responsibility to

ensure access to that expertise and capabilities. From a readiness perspective, it is high on my list that we have access to those capabilities.

**Senator Inhofe:** What worries you the most, and what do you intend to do about it? What will be the first challenge you go after?

**Lt. Gen Saltzman:** Most immediate threat is the pace that our strategic challengers, specifically the Chinese, are pursuing capabilities that can destroy our satellite capabilities. It is one of my earliest priorities to build and field effective capabilities and then train guardians to operate in a contested domain so we can counter this activity.

**Senator Shaheen:** How important is it to have the SPIR and STTR programs with our small businesses who are able to assume more of that risk and what your assessment is if those programs are discontinued?

**Lt. Gen Saltzman:** We are going to have to do things differently in order to protect space capabilities. Small businesses have a tremendous role that we can leverage to build a full- spectrum response to what our adversaries are trying to do. We need to make it easier for small businesses to offer their capabilities that we can use.

**Senator Shaheen:** What do you see in terms of policy changes that we should do to help us address the procurement issues that we have?

**Lt. Gen Saltzman:** Streamlining the requirements for Chief of Space Operations, being clear of exactly what we need, pulling in as many ideas as possible to solve those problems, will deliver operational capability faster.

**Senator Shaheen:** There are requirements that disqualify 70% of Americans from military service. Can you speak to what we ought to be thinking about to get more of those Americans into service?

**Lt. Gen Saltzman:** The Space Force is small, which allows us to pick exactly the right people with the right skill sets into the Force to optimize the Space Force capabilities. I don't think we need to put blanket restrictions on types of people, because we are able to look case-by-case on each person that comes into the Force.

**Senator Cotton:** What are your thoughts on the relationship between the Space Force and the National Reconnaissance Office? How should they relate?

**Lt. Gen Saltzman:** The collaboration between organizations is critical for success. We will need to look where our missions overlap and evaluate what current capabilities exist and what can fill the gaps. We can't afford to be overly redundant.

**Senator Cotton:** Are there any changes to the law that needs to happen to ensure the Space Force can do that?

**Lt. Gen Saltzman:** I am not tracking any changes that need to occur now, but if confirmed I am open to reevaluate any changes.

**Senator Cotton:** Do you think space could become a war-fighting domain, and do the principles of war would apply in space?

**Lt. Gen Saltzman:** I do, and I agree.

**Senator Cotton:** What would offensive operations in space look like?

**Lt. Gen Saltzman:** Deterrence. Preventing a war from extending into space by having a resilient capability and creating a credible force.

**Senator Gillbrand:** Given the highly technical nature of the Space Force's work, should Congress consider integrating Space Force cadets into the cyber academy and using a potential cyber digital services and space academy as the service academy commissioning source of Space Force officers and civilians?

**Lt. Gen Saltzman:** There is no way the Space Force can be operational without capable cyber professionals. I would be open to any institutions that can supply these essential professionals. If confirmed as CSO this would be one of my priorities.

**Senator Gillbrand:** What do you think some of the recruiting challenges will be for Space Force, and have you been able to recruit and retain the technical workforce that you need, and what are some of your current shortfalls?

**Lt. Gen Saltzman:** With being a smaller organization, our recruiting numbers are lower. We have to train our work force to complete very specific tasks, and therefore it is important that we retain these employees so that we can continue to benefit on the gathered experience. It is going to be more difficult when they see more opportunities in the private sector. We have to make the culture of the Space Force engaging enough to make them want to stay.

**Senator Gillbrand:** How will you ensure that Air National Guard units are able to fully execute missions?

**Lt. Gen Saltzman:** I would like to work with the committee, and work with the other stakeholders to evaluate all of those nuances to optimize structure.

**Senator Gillbrand:** What specific operational billets are needed to commission cyber professionals, and how has the process gone so far?

**Lt. Gen Saltzman:** To get mid-grade officers takes 15 years. If we can pull expertise from the private sector, we want to give them credit so they can lead organizations and not start at the bottom of the organization. The pilot program is successful so far.

**Senator Tuberville:** Do you believe our national security launches should remain on U.S. soil?

**Lt. Gen Saltzman:** I am open to using various launch providers and locations to ensure missions continue.

**Senator Tuberville:** If confirmed, what would you do to protect the DoD from intellectual property theft?

**Lt. Gen Saltzman:** I would commit to tools and experience needed to make sure they are the most capable force for defending our intellectual property and networks.

**Senator Tuberville:** Given Chinese developments, do you believe we should explore establishing new requirements for launches?

**Lt. Gen Saltzman:** I would be committed to working with stakeholders to make the balance between emerging and established providers. It is about getting the requirements just right.

**Senator Hirono:** Will you consider increases to the Space Force's manpower levels to ensure every unit is able to keep pace with mission requirements?

**Lt. Gen Saltzman:** Space Force has consolidated military satellite communications under a single service. This increases readiness of units so they can provide capabilities. If confirmed, I would take readiness of units very seriously and manpower is of concern.

**Senator Hirono:** How will you ensure National Guard units are adequately resourced and have access to training for space missions?

**Lt. Gen Saltzman:** Readiness is primary concern, and I would be in deliberations to ensure units are ready. I commit to collaborating with the National Guard on a host of issues, this being one.

**Senator Rounds:** Can you provide your assessment on Russia and China's space capabilities compared to ours?

**Lt. Gen Saltzman:** The Space Forces capabilities are extremely capable, and I still put us at the head of the table. Russia and China are investing heavily in the space industry that is concerning

**Senator Rounds:** If Russia has good capabilities in space, how do we account for their repeated failures to provide relevant information to strike Ukrainian forces on the ground?

**Lt. Gen Saltzman:** We see how important it is to defend our cyber networks. I see important lessons we should take to building our Space Force design.

**Senator Rounds:** Do I have your commitment that if confirmed you will assure that the joint requirements oversight council validated requirements for this system are met so our troops on the ground are provided capabilities to win on the battlefield?

**Lt. Gen Saltzman:** You have my commitment that I will account for all requirement stakeholders.

**Senator Kain:** In your view, how important is leveraging innovative, commercial technologies to preserve U.S. space dominance?

**Lt. Gen Saltzman:** It is critically important.

**Senator Kain:** What could the potential relationship be between the Space Force and space launch facilities in the future?

**Lt. Gen Saltzman:** Having agility and flexibility is essential. We need to maximize launch providers and locations around the nation. Right now, it meets governmental needs.

**Senator Kain:** Are you concerned about how the proliferation of commercial interests could complicate international needs?

**Lt. Gen Saltzman:** I am not concerned about the traffic at this point, but I am always concerned about debris. I am committed to lead and model responsible behaviors in space to help reduce the amount of debris related to launches and other operations.

**Senator Cramer:** Can you elaborate on the idea of small, commercial space organizations, SDA and its autonomy, and the role of cyber in all of that?

**Lt. Gen Saltzman:** Small businesses give addition to ideas which put solid, innovative ideas on the plate. SDA's innovative business model has been successful in missile tracking. We need to stay at the technical forefront of cyber.

**Senator Cramer:** What is your vision for RADAR?

**Lt. Gen Saltzman:** The more data we can collect is better for space domain awareness.

**Senator King:** What is your point of view on the militarization of space?

**Lt. Gen Saltzman:** It is one of my primary objectives to ensure war does not enter space. Having a credible force will create doubt in adversaries' minds about bringing war to space.

**Senator King:** Do you believe the Space Force and NRO should remain separate?

**Lt. Gen Saltzman:** Because they are two organizations focused on different requirements, it is important to collaborate to avoid redundancy.

**Senator King:** How many Air Force graduates want to join the Space Force?

**Lt. Gen Saltzman:** More than we have room for.

**Senator King:** Does the Space Force have the capability to react without GPS in space?

**Lt. Gen Saltzman:** Our job is to prepare for the worst-case scenario. We need to plan for when things go wrong.

**Senator Ernst:** How does the concept of integrated deterrence account for cross domain deterrence?

**Lt. Gen Saltzman:** Integrated deterrence leverages a government approach to imposing cost and denying benefits if an adversary were to think about taking actions detrimental to U.S. interests.

**Senator Ernst:** Would you support revealing some of our space capabilities for deterrence, demonstrating to our adversaries that we can respond to their attacks?

**Lt. Gen Saltzman:** If you don't know the capabilities are there it's hard to deter an adversary. The problem is if we reveal vulnerable capabilities, we could jeopardize them.

**Senator Ernst:** Do you believe the self-imposed restriction on anti-satellite tests will inhibit or stop Russia and China from conducting anti-satellite tests?

**Lt. Gen Saltzman:** Anti-satellite missile tests are currently the most dangerous thing to U.S. space capabilities in the form of what Russia and China are doing. This demonstrates there are better and more responsible ways to test capabilities.

**Senator Ernst:** How can the U.S. promote or model the norms of conduct for space, and encourage other countries to do the same and if they don't how can we impose penalties?

**Lt. Gen Saltzman:** By building a coalition of like minded nations in space will create peer pressure for the international community to deem actions to be responsible or irresponsible.

**Senator Kelly:** What type of growth do you foresee in the Space Force in the next 5 to 10 years?

**Lt. Gen Saltzman:** There is substantial capabilities in test infrastructure we need to invest in. There are some capabilities that need to be improved to fulfill critical mission tasks. We need to provide training and experience to our operators.

**Senator Kelly:** Is there any other infrastructure capacity you feel you need?

**Lt. Gen Saltzman:** There will be transition from our legacy capabilities to new architecture type in the future

**Senator Kelly:** In the enlisted ranks, how is the recruiting there?

**Lt. Gen Saltzman:** It is going really well.

**Senator Kelly:** Do you find a need to do marketing for the Space Force?

**Lt. Gen Saltzman:** Lots of people are doing marketing for us. We are very active in going to universities that are underrepresented to bring in a background of skills that we need.

**Senator Fischer:** Do you see Phase 3 of the National Security Space Launch Program as more of an evolution of Phase 2, or a revolution in terms of its structure and capabilities?

**Lt. Gen Saltzman:** I haven't dug into the details of what that strategy details, but I will offer that lessons have been learned from Phase 2 that will be brought into Phase 3.

**Senator Fischer:** Regarding launch providers, when you said you want to include all stakeholders, what are some examples? And how do you balance the risk?

**Lt. Gen Saltzman:** We need to pull opinions from all launch service providers to establish the strategy going forward. Balancing the risk is a challenge, because we have to put the payloads we need to be put into orbit. We need flexibility, and the best way to do it is to have deliberate debates to make it as perfect as we can.

**Senator Fischer:** How has the Space Force has made changes to deliver capabilities faster to be more responsive to the needs we face, such as the restructuring of space systems command, and how you plan to build on these steps to ensure we are responsive to threats and technological changes?

**Lt. Gen Saltzman:** With the help of Congress, we established the force design architect, and the joint requirements committee gave us responsibility as the DoD integrator, which allows us to streamline the requirements development, setting us on the right path.

**Senator Fischer:** When you look at reforms, what benchmarks do you use to measure success?

**Lt. Gen Saltzman:** Delivering a full set of capability, that gives us agility and sustainability over time. I am looking at being able to always provide capability and readiness of the Force to meet the broad spectrum of anticipated threats.

**Senator Rosen:** How are you going to work to keep our space-based assets, such as satellites, safe from cyber-attacks, and what other agencies do you need to coordinate with, and how are you using emerging technologies in all of this?

**Lt. Gen Saltzman:** This is a critical issue, as seen with Ukraine. Delta 6 is dedicated to cyber operations and specifically cyber defense of Space Force systems. We also leverage the authorities that the U.S. Cyber Command has to monitor and if necessary defend capabilities. We are training cyber operators on mission unique, cyber terrain to monitor for malicious actions and updating defenses to make sure they are as secure as possible. I want to give them the tools to do their job better.

**Senator Rosen:** How are you going to do the STEM to space initiative to be sure you are reaching out to young folks know what an exciting career field this is?

**Lt. Gen Saltzman:** We do outreach starting at grade school, talking about the importance of space. We have established a university partner program, and partnerships for research.

**Senator Scott:** Can you describe the role you have been nominated for and in terms of how the Space Force enhances the U.S. ability to deter and defeat adversaries, especially Communist China and Russia?

**Lt. Gen Saltzman:** The Space Force addresses emerging threats. They are dedicated to protecting our vital interests in space, as well as joint force from the adversaries designs of space enabled targeting. We are committed to developing operational concepts, technology and training that ensure we can protect that capability.

**Senator Scott:** Communist China and Russia are out to defeat us. Their governments do not like our way of life, why doesn't the public know that, and what can you do in your role to get people to understand that you are trying to prevent bad acts?

**Lt. Gen Saltzman:** It is a matter of scale. There is recognition that the world is not safe, and that they are trying to deny us our interests. Some don't make the connection of how targeting our satellites prevent us from doing XYZ. It's education and us connecting with the public, which is part of my role.

**Senator Scott:** How will the department use the most of any readily available commercial technology or products so you can be more efficient and accomplish more?

**Lt. Gen Saltzman:** We have an important leadership role to meet requirements based on capabilities available to us. If we have the chance to exploit existing capabilities that is great, and we can build only what we must. If confirmed as CSO, it is a top priority to get the most out of the commercial-private sector.

**Senator Scott:** Do you think you are doing enough in Florida? Do you think you can do almost everything in Florida?

**Lt. Gen Saltzman:** Florida remains an important asset to the Space Force capabilities.

**Senator Scott:** How is the Space Force working with the National Guard?

**Lt. Gen Saltzman:** We are working with the Guard very closely when it makes sense.

**Senator Hawley:** Do agree with the designations from the secretary with China as the departments pacing threat, Paycom as the priority theatre, and the Taiwan Contingency as the pacing contingency? Is the potential threat of China invading Taiwan is something we need to be concerned about this decade? Would Space Force be ready?

**Lt. Gen Saltzman:** Yes. There is a clear indication of China moving in that direction very rapidly. There is a high priority to meet all of those contingencies.

**Senator Hawley:** What kind of space capabilities do you think would need to be prioritized to deter a potential Chinese invasion of Taiwan?

**Lt. Gen Saltzman:** We must protect the capabilities that are enabling our joint force today. To be deterrent, we must be resilient and have the offensive and defensive capabilities to do so.

**Senator Hawley:** Are we resilient in space against China and Russia?

**Lt. Gen Saltzman:** The attacks we are seeing are not sufficient to taking out our capabilities today. We need to change to a more defendable architecture in the future.

**Senator Hawley:** Does the U.S. have the anti-satellite weapons we need if deterrence fails?

**Lt. Gen Saltzman:** I think we currently have suitable capabilities.

**Senator Hawley:** If confirmed, what steps would you take to ensure we are doing everything we've got to do to improve space capabilities.

**Lt. Gen Saltzman:** I will lean on the force design architecture role. Force design analysis will show optimal configurations.

**Senator Reed:** What are the critical hardware and software gaps you see on the ground or in the air to effectively inhibit your mission?

**Lt. Gen Saltzman:** The analysis is ongoing, but initial thoughts in terms of building an architecture on the ground that is resilient to attacks from Russia and China. We now see more need to build these capabilities on the ground more than ever before. Gaps include space domain awareness, and tools to take data in and turn it into information.