

July 2024

USAFA 64th Academy Assembly Banquet Keynote on NASA Transformation

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Recommended Citation

Walker, Madison and Garver, Lori (2024) "USAFA 64th Academy Assembly Banquet Keynote on NASA Transformation," *Space and Defense*: Vol. 15: No. 1, Article 11.

DOI: 10.32873/uno.dc.sd.15.01.1241

Available at: <https://digitalcommons.unomaha.edu/spaceanddefense/vol15/iss1/11>

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USAFA 64th Academy Assembly Banquet Keynote on NASA Transformation

**In October 2022, at the 64th annual Academy Assembly, focused on “Waging Peace on the Final Frontier,” the former deputy administrator of NASA the Honorable Lori Garver spoke at the Air Force Academy’s 64th Academy Assembly banquet keynote on the implications of NASA transformation for international security. She was introduced in a pre-recorded video by Susan Eisenhower, honorary founder of USAFA’s Eisenhower Center, and interviewed by USAFA Institute for Future Conflict Fellow Madison Walker.*

MS. WALKER: So, after all of that amazing introduction, I think we're going to go ahead and get started with the fireside chat. So, our first question, from that stunning introduction that we heard, you obviously had a big hand in commercializing NASA and one of the most public and important figures in that space is SpaceX. Now, they have involved themselves in the Russian-Ukrainian war without DoD involvement. So, the real question is, how does the government, in general, ensure compliance from these private companies that we have funded, empowered and, quite frankly, come to rely on?

LORI GARVER: Alright. Well, thank you for that. First of all, thank you for that introduction, both Susan [Eisenhower] and [Cadet] Chaudhary. It's wonderful to be with you all here. And Madison, just a great kickoff question because really, I think the vision, as you heard Susan Eisenhower say about her grandfather, is you got to start with the end state in mind. Strategic planning is really critical.

And when I was interested in getting a more competitive industry involved in space launch, it was for very obvious reasons. It seemed to me, you know, we all, no matter what we're going to do in space across [the] military, civil, and commercial world, need to be able to have access to space. I think of space as just another vantage similar to the oceans, when we first had the ability to cross them or the air when we first flew. Now, we will have new vehicles that have a more regular ability to be able to transport people and their stuff, satellites, spacecraft, etcetera, to space. And the obvious way to do that when you live in the United States is through competition with our private industry.

We had in the United States--between military and NASA--primarily been launching for over fifty years with government owned and operated systems, but of course we already had some privatized systems. So, all this is basically to tell you, don't blame me for Elon Musk, for goodness sakes!

And I do think that it was obvious in 2008, when I started in the Obama administration, that's my second tour of NASA, that to replace the shuttle, which was set to retire in two years, that this was the obvious path and SpaceX was likely to be the choice. SpaceX had already won an early competition to launch cargo, and so they were very likely to be a competitor and one with a good chance in commercial crew. Although the majority of people in the selection committee I think preferred the Boeing pitch, they would disavow that now, and having the private sector was never really as controversial as having the private sector that was owned by a very flamboyant billionaire. And this has brought in, frankly, a number of unforeseen issues.

The latest and perhaps most meaningful, certainly right now, is this issue of Starlink and Ukraine. And so, when you ask something like how does the government manage them, part of this is for all you young future leaders to consider these things at the beginning and work backwards. So, that's what strategic thinking is, sometimes we call it right to left thinking. In the end state, you want to set up the relationship so that you do still have some tentacles into their behavior. Frankly I think we—I use we as NASA—it's a very hard habit to break if you ever have the privilege of working somewhere like NASA. But we, NASA, did not think early on that it would be billionaire owned companies when we were doing commercial policy.

When we first began this in my first tour at NASA in the 1990s, Lockheed, Boeing, Northrop Grumman, they all had an interest in bringing down the launch costs, but then SpaceX, very quickly, you know they've only been around twenty years, moved into the lead, dropping the price by suing people to get payloads on their rockets...but really by delivering. Starlink was even less thought of by the government at the time. I think I didn't even hear about Starlink until after I left the administration in 2013.

Thousands of satellites launched and, you know, I do not know these current details. I haven't talked to Elon personally in a couple years, and yes, our last communication was a dust up on Twitter, but if these satellites are as useful as we are fearing, I'm confused about why the government isn't paying for them. In my view, you shouldn't have a private company just on their whim creating something [so critical to national security] that the government has no association with, and it would be I think in our best interest to be able to take this on.

This is an expense that is pretty minor in the big scheme of things. If it's of value, we want to have some ability to manage it. We want to be able to leverage commercial capabilities for our access, and this is a capability to do that. I feel like that is what policymakers should be saying.

MS. WALKER: Well, thank you for that. I think it will definitely be a topic for the rest of the conference and also in the years to come. But I definitely want to discuss one valuable takeaway from the first part of your answer in the context that the Space Force is coming up on its third-year anniversary. So, it doesn't quite have its bureaucratic culture formed, yet. It's not

starting from a blank slate, but it may not want to copy exactly the Air Force bureaucratic model. You had a large hand in changing bureaucratic culture at NASA, so do you have any lessons learned for Space Force going forward?

LORI GARVER: Oh my gosh, yes. I think one of the reasons there are...so there is a lot of excitement, enthusiasm for Space Force...is because it is new and it is at the beginning where you can really establish your culture. And I don't think that NASA as a bureaucracy is too changed by what we did. I mean NASA has been in my view very flexible over the years. You think of an organization that was established in the Cold War to beat the Soviet Union. In 1990 (*sic.*), with Susan Eisenhower's help, we, and I was at NASA at that time leading the policy office, welcomed the [former] Soviet Union to the space station. We merged our human spaceflight programs. And if you think about that change of culture, to me that was huge.

And I'm often asked, why would you have imagined NASA could embrace the private sector the way they have? And I said, my goodness, they embraced the [former] Soviet Union. You know, we're a capitalist society. This [with the private sector], I didn't think was going to be that big a deal; they embraced it—as can be seen [by] anyone who watched and continues to see the now fifth commercial crew flight to the International Space Station.

Even I—when I watched that first launch in 2020—when the *Tesla's pulled up*, I said I don't think I would have allowed that. That's really out there. But how far we have come isn't really overcoming bureaucracy as much as culture. And so, I think the Space Force has the opportunity to set both.

First, NASA is carrying around, as are all the services other than the Space Force, the huge infrastructure with it. [A] large standing army and costs and things like that for NASA [have] held it back. We geared up for Apollo—a program from zero—and in ten years performed. But from there, we were left with this infrastructure, which then you had to pay for...for programs that aren't as large. Our budget has never reached quite half what it was during Apollo. It is about half today. So, even programs like the Space Launch System today, one of the reasons it is so expensive is because we are carrying those continued costs.

Space Force doesn't have that. And most people do view the heyday of NASA in those early years. It's hard not to if you think not even just about human spaceflight because we launched, you know, the Mariner program and we had the Voyagers, *and* the human spaceflight program: Mercury, Gemini, and Apollo. Within the first decade of human spaceflight, something like thirty-five people went to space and twelve of them walked on the moon. I mean, incredible. So, we're not going to live up to that. But we're certainly not if we don't turn the page.

And that's harder sometimes. I say in the book [*Escaping Gravity* (2022)], if you think about renovating a house versus building a new one, there are times when renovating is harder—it's more expensive. Space Force can take advantage of all the new technology. Does everything have to be brick and mortar anymore? These are things that are very different choices, and I

think there's a lot of excitement around the Space Force because people are aware of that. And it would be a mistake—that it does not appear to me from the outside you are making—to not try and build that. They can then be a vision for the rest of us, for government programs, for, you know, major acquisitions, programs for things that we need to develop. You can partner to gain capabilities and, again, not develop an infrastructure that is so lasting [so permanent] that it outlasts its usefulness.

MS. WALKER: Thank you so much for that. But you also mentioned Apollo; and I think you always have to have an Apollo question in a space talk; and that's because Apollo was a miracle, right? It's not just because we got to the moon by the end of the 1960s, but also it was through a government bureaucracy. It was a feat of technology and also a projection of power. Now, we live in a very different world. Is it still important for the United States to project power by doing U.S. missions under the flag through the DoD and NASA?

LORI GARVER: Well, I would say yes, it is. It's still important. And again, I was touched by Susan's remarks. Getting to know her many years ago was very special, and I think that [President] Eisenhower really did set a standard—by allowing the Russians to go first with Sputnik. And a lot of people have not appreciated this. So, I'm so glad it's come out. I talked about it in the book, and I was breathing a little sigh of relief, there, that her research tracks with what I wrote.

I feel like Apollo was born of the Cold War, but it was not a military mission. It was a civilian challenge. It was something that the United States wanted to do, to show that democracies were the best at advancing science and technology, specifically over the Soviet Union and communism. And it did that. We did that in partnership with the private sector.

We even had other countries involved. We don't talk about it much, but we did, and today that is as important as ever. I don't necessarily think they are the same types of challenges. To me it's really about setting a meaningful goal that does seem unbelievable, and then achieving it. We haven't done that in a while.

I know the space station is an amazing thing. Human spaceflight is a wonderful, meaningful thing, and you have to be around any astronauts to see people, not just young people, light up around them. There is something intrinsically felt about these explorers, but we have a lot of new challenges today.

One of the things about *Escaping Gravity*, and the reason I named my memoir that, is it took a lot of people with a single goal. They knew: to overcome gravity was a big deal in the beginning, and a lot of people had to work on it together. But their vision was aligned. Right now, I think, our challenge is to have a vision aligned around and setting that right goal.

For me the answer is something like being able to meaningfully address climate change and address the harm it is doing to people on this planet. We have a unique opportunity from the vantage of space and in the atmosphere to help with this. I am a fan of Artemis. I think returning to the moon with a diverse group of people in a way that is sustainable, where we can go with other nations, and then go beyond that, is meaningful.

It's really a question to me of how do you do it? You must do it in a way that the world sees it as leaving something positive for the rest of us. And, somehow, Apollo was able to do that, but we do live in a different time. So, that is one answer. But to me the short answer would be yes. It is important that we do great things. We are a great nation. How do we get to be a great nation? You do great things.