

U.S. Senator Maria Cantwell

October 21, 2021

U.S. Senate Commerce Subcommittee on Space and Science hearing titled, “International Collaboration and Competition in Space: Oversight of NASA’s Role and Programs”

Witnesses: Former NASA Administrator and current Senior Advisor for Acorn Growth Companies, Jim Bridenstine; Former NASA Associate Administrator for Space Policy and Partnerships and current Executive Vice President for Civil Space and External Affairs, Redwire Space, Mike Gold; Chair of NASA Aerospace Safety Advisory Panel, Dr. Patricia Sanders; and Axiom Space Executive Vice President for Government Affairs, Mary Lynne Dittmar.

Transcript

Cantwell: Thank you, Chair Hickenlooper and thanks for holding this subcommittee hearing and to you and Senator Lummis for spending so much time to try to bring focus to the needs for authorization. And thank you to the witnesses.

I think I'll start with you, Mr. Bridenstine. Obviously, one of the past times you came before this committee, you spoke very fervently about the need for authorization. And yet, it's been since 2017, since we've actually had an authorizing bill. So I sometimes feel like NASA wants to have the money without the authorization; that it works not to resolve the conflicts that we have with members; that basically it just realizes as long as you can just get the dollars, it's okay. Well that's not okay. And so I just want to be clear with the panelists, if you could give me some feedback on some of these issues. Do you think that we need an authorization bill?

Bridenstine: Yes. 100%?

Dittmar: Yes.

Gold: An authorization bill is vital to send messages to our partners and rival nations for the unity purpose of Congress.

Sanders: Yes.

Cantwell: Okay. So do we need to have more testing and analysis of rocket launching and the capabilities that we're looking for in the next system?

Bridenstine: Do we need more testing and analysis? You can always have more testing, there's no doubt more analysis at some point. And I liked the way Patricia Sanders mentioned earlier that we have to manage risk. So it depends on what system we're talking about. And but certainly, there's value to more testing.

Cantwell: Dr. Dittmar?

Dittmar: So having been involved in the development of the space station, I would just echo what Jim said.

Cantwell: I'm just talking about rockets, I'll get to space stations in a minute.

Dittmar: What I was going to do is simply speak to engineering. Okay, so it's always useful to have test data. But there's also an appropriate use of test data and then a point at which just more and more testing simply adds cost and schedule.

Cantwell: And Mr. Gold.

Gold: Senator, this country hasn't had a human spaceflight program beyond low Earth orbit in a very, very long time, we are going to have to relearn some critical lessons, as well as developing new technologies and new systems along the way. So testing and making sure that we have a safe system that's robust and effectively competes with China and other nations is going to be critical, leveraging the wonderful private sector companies in your state, as well as those that Senator Hickenlooper mentioned...

Cantwell: Okay, Dr. Sanders?

Sanders: Strong proponent for adequate testing and an analysis. As Mr. Bridenstine had said, it's not possible ever to completely and fully -- totally eliminate risk and you want to manage it. But the way to manage it is through knowledge. And as much knowledge as we think we have about systems, we continue to learn things about parachutes, about compatibility with components.

Cantwell: Do you think NASA Houston needs to have more oversight over the Artemis program and its schedules and launches? Than is currently provided?

Bridenstine: I think -- oversight from the Congress?

Cantwell: No, from NASA Houston.

Bridenstine: Oh, from NASA Houston for the Artemis program? Yeah. Well, certainly there's a lot of different centers that are involved in the development of different components of the Artemis program. I think it's important that NASA has a robust capability to do the integration. And I think until recently that has been lacking, but my understanding is and I'm not there anymore, but my understanding is, they have really plussed-up the systems integration piece that has been missing for a while.

Cantwell: Dr. Dittmar?

Dittmar: With apologies, Senator, I am not as current with what management is distributed cross the centers.

Cantwell: I'm basically I'm bringing up topics that are part of the dispute between what the Senate and the House wants to do on a NASA authorization. So I'm just trying to get your viewpoints on that because part of the issue is we have to debunk, you know where we are. We can't do an adequate oversight job if we don't have an authorization

bill. We can't come back on the measurements if we don't have some input here about what kind of structure we need. But we're sitting here with obviously, a new -- as Mr. Gold was saying -- a pretty big new adventure, at least from the number of stops we're talking about. And then what we're talking about going beyond the moon. To say nothing of we really don't have any accurate dates, or cost estimates, or what we want out of each of these systems. What do we want out of the launch systems and the capabilities, what do we want out of the ISS and its capabilities, what do we want on the lander system? What do we want, you know, on the beyond lander....I'm sorry, beyond the moon?

So here we are having this discussion without reference and without oversight, really, because we don't have an authorization bill that is on a piece of paper: who's in charge; who's going to answer these questions; and how are we going to have this debate within Congress. So what's coming across is the amount of money that people want to keep going, but then it's always not enough. And then the choices that people make, don't necessarily adhere to redundancy and resiliency. So I think it's just imperative that we get an authorization bill and I'm trying to figure out from you all, what you think some of these stumbling blocks really, truly are between our colleagues. So Mr. Bridenstine?

Bridenstine: Ma'am, I think I think that's all, I agree with everything you just said. I think that's exactly right. And I would also say that one of the biggest values of having an authorization bill, yes, oversight is a big piece of it. But for NASA to have continuity of purpose over time, requires an apolitical bipartisan consensus on how we're moving forward. And if we can put that in an authorization bill, it sends a signal to everybody globally that we have resolved to accomplish these objectives. And then, as this hearing is titled, we have the opportunity to go get international partners. If we don't have that resolve, if the international partners don't trust that we're actually going to accomplish what we're saying we're gonna accomplish, the first thing they're going to do is they're going to go to China, which already has, you know, what they call the Chinese International Space Station. And now they've entered into an agreement with Russia for going to the moon and establishing a lunar base. Our international partners have a history of partnering with other nations when we don't have that continuity. So the authorization is important for that purpose, too.

Senator Cantwell: Okay, Mr. Gold.

Gold: Senator Cantwell, when Administrator Bridenstine sent me overseas to negotiate the Gateway commitments, it was because of statements that you made that we were able to complete that negotiation. I was told outright by an international partner, "Why should I believe anything that you're saying relative to gateway Artemis and NASA's plans?" And it was only by arguing the bipartisan support that Artemis had, that we were able to bring them and their collaboration to the table and prevent them from going over to China. Without an authorization bill, those doubts will continue to fester.

Cantwell: Well, one of the reasons why NASA's authorization is on the USICA, America's competitiveness bill, is because we've passed this twice now out of the Senate to have no results in the House. So we're very adamant here in a bipartisan fashion, what needs to be done. And I'm just trying to use today as a way to figure out what is this stalemate that we have with our House colleagues truly about. Now I don't know if anybody wants to talk about the nature of a public lander, that issue. But obviously that is one of the stumbling blocks as well, is that people would like to have a process and go back and look at a public lander. Although I think some people are saying, you know, "The IP would belong to the government" and all sorts. So how do we get a resolution of this issue? Do we have other members waiting? Sorry.

Hickenlooper: I think you're on such an important point.

Cantwell: Okay, okay, thank you. I don't know if we have colleagues here. So I don't want to hold up somebody if they're on.

Hickenlooper: There was no one in the queue. They're all voting.

Cantwell: Too bad for the witnesses. Yeah, go ahead, Mr. Bridenstine.

Bridenstine: So when we think about a human landing system for the moon, I think we need to look back at the Commercial Resupply Program and the Commercial Crew Program. Both of those have proven to be very resilient. Even when one partner had a challenge, the other one would step forward and continue to move forward. We saw that, go back to 2014 on commercial resupply of the International Space Station. We saw, you know at the time it was orbital ATK they had a problem resupplying the International Space Station, a rocket failure, a lot of cargo blew up. And then in 2015, SpaceX had a rocket blow up with the international docking adapter and other cargo. But we had a resilient program where we could we had dissimilar redundancy and we were able to use an Atlas rocket with the Cygnus cargo capability and basically resupply the International Space Station. And we had international partners on that, Japan, that helped, you know, support the resupply and even Russia supported the resupply. So the answer is, we need dissimilar redundancy. Having a single provider for a human landing system, I think imposes risk. That risk is budgetary, that risk is scheduled, that risk is oversight, that risk is transparency. And I think if we have competition, multiple providers that are competing on cost, on innovation, on safety, and those providers operating commercially are getting customers that are not necessarily the government, I think that's a good thing for the program. I think that was the original intent. I think that's why when, you know, Congress initially funded the Artemis program, there was an anticipation there would be to at least two in the in the competition. I was fully supportive of that. And that's what we were pushing for.

Cantwell: I'm more trying to get, our colleague, the chair of the House Committee wants a public lander. And so I was trying to get comments about that.

Bridenstine: I think I'm gonna say things I've said before and it's gonna maybe get me in trouble with members of the House. I don't know. But I will tell you that I think anytime you introduce a competition between the government and the private sector, the government wins and the private sector loses. I think that's a challenge. I think we have enough commercial capability now to have two commercial human landing systems. And I think if we had adequate funding, you know, whether it's coming from the Executive Branch that's not providing it or Congress, I think adequate funding for two commercial human landing systems, at least maybe even more, that would be the right solution.

Gold: Senator, I think the private sector has proven itself. It has delivered cargo to the International Space Station. It has now delivered crew to the International Space Station. The private sector can and will be able to meet that mission. What we're missing now is, as you mentioned, dissimilar redundancy, and direction and funds. And those are two things that we certainly hope Congress will be providing via an authorization bill. And certainly we're advocating for the House to move and move quickly.

Cantwell: Well, we're trying to resolve these issues. So the point you should take away, and NASA really if they're listening, should take away is we need an authorization bill. We're not going to continue to have this game where you just get appropriations. It is not going to serve the Artemis program or NASA well. But we have to resolve this issue. And frankly, you know, **it's frustrating to me to see the spirit of NASA turned into you know, the cheering of billionaires or competition with each other. Because I'm pretty sure that that's not what our mission of Artemis is about.** And so somehow we've gotten away from our focus, you know, on what we're trying to do from a technology perspective. And **I believe in NASA's innovation and technology. I want them to apply the same spirit they had in fixing the problems on the Apollo project to fixing and getting this authorization done.** But if we have to address this public issue, and get our House colleagues in the room and figure out what is the sticking point here, we should do better than just dismissing it and saying that the private sector can do better. We just had this debate with the FAA and oversight of the aviation sector. We clearly saw where there were pitfalls. So we have to figure this out and resolve our differences so we can get legislation. So Congress can do its oversight job so that Senator Hickenlooper can continue to play a great role here in pushing this. And then we can get to the international aspect of this. But right now, we're you know, it's been since 2017, since we've had a bill. And so you ask yourselves, why are we in the situation where the dates that are on a piece of paper right now make no sense... . But everybody knows that. So how is that a good strategy? So let's resolve these issues. Dr. Sanders, do you have any suggestions about how to resolve this issue about a public lander versus commercial landers? Do you have any input Dr. Dittmar?

Sanders: I think that, yes, the commercial industry is capable, increasingly capable. But NASA always still has to be accountable for what, for the success and safety of the

mission. So it's important for them to be able to have enough influence and interaction in order to have that and ensure that accountability. And also NASA has a great deal of experience, a great deal of talent that they've acquired over decades. And so there's a time for collaboration as this is going on. And we saw that in commercial crew. There were times when SpaceX and there's times when Boeing had problems to solve. And NASA has been able to help them solve those because of the experience they have. So I don't think it's a clear straight, turn it over to commercial. Nor is that a clear straight that NASA developed everything by itself.

Cantwell: Well, that's why I predicated my question earlier on that list and wanted to know what you thought about giving NASA Houston a larger role on that oversight. Look, we've seen where the same mistake was made by the FAA and deferring too much to aviation manufacturers when it came to the oversight. And we have huge technological advances. And so there's a lot to know and be tested. So we need to have this structure. I want a very strong NASA oversight of these companies. Very strong. I'm not supportive of NASA stepping away and turning it over to the commercial side. But we have to figure out what that looks like from an authorizing perspective and put that in a piece of paper. Mr. Gold or Dr. Dittmar?

Dittmar: I would just add quickly with regard to the lander, I don't know what the particular rationale is underlying the various positions. But one thing that might be pointed out is if NASA is engendering, and I'm in agreement with Jim, I think we need at least, one, or two would be good. We definitely need redundant capability. If we're going to take this approach, if you need a dual path basically if you're going to do that. You know, one thing the government can always do is assert what amounts to eminent domain right at first use. So that if, and I'm speculating, if the issue having to do with a public lander has to do with whether or not the government could count on being able to use it, as it saw fit in the same way that it can with regard to a government loaned asset. And there's been a great deal of discussion. I'm one of the people having that discussion over the last several years having to do with what's the appropriate role of government in signaling particular to international allies, as Mike's sort of pointed out, and adversaries? What's the full faith and measure of the US Congress mean? And what's the difference between how it is that you see a government owned asset sort of a public asset, versus how you see a privately owned asset? Maybe one way to have the discussion is to talk about what rights the government has to assert in the case where it needs to use, okay. And in fact, basically say to private companies, "Sorry, we understand you have other customers, we understand you have business agendas, but we have to set those aside under these circumstances." I don't know if that's a path forward, but it's just an idea.

Cantwell: Well, I think oversight is a question here. My sense is there's a feeling of loss of oversight with these commercial realizations. And as I said, we've dealt very deeply with this as it relates to the FAA and to the manufacturers. And you had a lot of people even within the organization at the FAA stepping away saying, "Oh, they know better let

them go ahead.” Yeah. And we need a very strong NASA and very strong NASA oversight.

Dittmar: I believe to do that you also need to have, and when you think about authorization, is very a clear statement of objectives. What are the objectives? Okay, insofar as how the government sees them, and how Congress sees them? Because without that, it's very difficult to even be able to begin to do oversight, because you know what objectives you're trying to meet.

Cantwell: You couldn't have said it better. Thank you.

Gold: And Senator, perhaps you have the solution already, in terms of the compromise with the House relative to oversight. I believe the question of government versus commercial is a false dichotomy, that we're stronger when we're working together. As you know Mary Lynne mentioned, Dr. Dittmar, that NASA has got so much incredible experience in the private sector's innovation dollars and affordability, and we need to combine that effectively, and hopefully going to the House, bolstering oversight and insight of the programs and having two entities moving forward. I hope could address the issues that you're raising.

Senator Cantwell: You're raising an interesting point, but I think no one's against companies going out there and doing commercial space travel. Okay, go for it. But we're talking about how we're now going to conduct our next Artemis mission. Mr. Chairman, you've been so lenient, and I see my colleague has returned. So I'm sure there are more questions by my other colleagues. Thank you so much to the witnesses. And thank you for your diligence on trying to get this authorization over the goal line. Thank you.