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SPACE FORCE:
THE PROS AND CONS OF CREATING A NEW MILITARY BRANCH

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PARTICIPANTS:

MICHAEL O'HANLON, Moderator
Senior Fellow, Foreign Policy
The Brookings Institution

STEVE JACQUES
Managing Partner
Velos LLC

DEBORAH LEE JAMES
Former Secretary of the Air Force

FRANK ROSE
Senior Fellow, Foreign Policy
The Brookings Institution

BRIAN WEEDEN
Director of Program Planning
Secure World Foundation

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P R O C E E D I N G S

MR. O'HANLON: Well, good morning, everyone, and welcome to Brookings. I'm Mike O'Hanlon with the Foreign Policy program; Frank Rose, as well, who I'll introduce in a second along with the rest of the panel. And I would like to welcome you here and thank you for coming out on a Monday when the Nats season seems flat and the weather is bad and a lot of people want to go on vacation. And you came out to talk with us about a Space Force. We're delighted that you did so.

About a month ago or a little more, President Trump at a White House event turned to chairman of the Joint Chiefs Joe Dunford and said, general, I want a Space Force. Can you go make that happen?

And I want to give President Trump credit, it's a big idea. It's a good kind of idea for a president to have. It's a good debate to have. But as I think President Trump may have learned since that statement, he doesn't get to make this decision quite that fast by himself. And, in fact, we're here today to join some additional voices to this process.

The Congress has been considering the idea, has shown some interest in the idea, but reluctance to create a Space Force immediately I think it's safe to say. And we'll hear more about that in the course of the conversation.

Just another word or two of brief introduction from me and then I'll introduce the panelists. And we'll just have a few rounds of conversation amongst ourselves before going to you roughly halfway through for Q&A. So that's the basic format.

As you know, the United States has four military services within the Department of Defense plus one more, the Coast Guard, in the Department of Homeland Security. And so the idea of creating a Space Force would be to create a sixth military service and you can see the argument why. Space is a huge domain. In fact, if we think

of where all of our satellites are, just out to what's called geosynchronous orbit, where satellites stay at the same place above Earth continuously, that's already 22,000 miles above the Earth's surface. So the space just where satellites roam is far larger than the Earth itself or all the other domains of the Army, Navy, Air Force, and Marine Corps. So you can see the logic for this on just basic geographical grounds.

You can also see the logic for a separate Space Force on physics grounds. Objects in space move much differently than objects anywhere else. And even the atmosphere, which seems close to space in some sense, is governed by entirely different laws of movement for airplanes vis-à-vis satellites in orbit.

Also, space is becoming a very, very important area of military activity. Actually, that's been true for 60 years, so there's really nothing hugely different about that except now we plan to use space and we have been using space in a more tactical, real-time way for targeting. And we have competitors, namely Russia and China that have the capacity to do so almost as well, if not as well, as the United States in the near future. And therefore, space is becoming more competitive.

So there are a lot of reasons why one would see a case for giving more attention to space, and I think all of us would agree with that. But some people would then say this is an argument for a Space Force, a separate military service.

There are also arguments against. A Space Force would probably be by far the smallest military service. It's not clear why that would have bureaucratic and administrative and budgetary efficiencies for the Department of Defense. It's not clear why space can't do well within the Air Force, although we have two former Air Force officers here today, at least one of whom I think will cast some doubts as to whether the traditional Air Force is capable of properly highlighting and emphasizing space as a separate domain.

So these are some of the arguments you're going to hear a lot more

about. I'm going to moderate, as I say, and now get myself out of the substantive picture. But let me first say a brief word about each of our panelists.

Debbie Lee James just to my left was secretary of the Air Force in the Obama administration. And in that role not only was she responsible for many space assets, but she was the principal military space advisor, a dual-hatted position for the Secretary of the Air Force. Had a distinguished career before that with SAIC, with the House Armed Services Committee, and we're really delighted to have the Honorable Secretary James here with us today.

Just to her left is Brian Weeden, who began his career as an Air Force officer with ICBM and Minuteman silo work and spent about a decade in the Air Force. Now with the Secure World Foundation right next door, but also in other places around the country and the world. They work on military space issues and we're thrilled to have him, as well. He got his undergraduate degree in electrical engineering and his Ph.D. in science and public policy from George Washington University, so looks at this issue from multiple perspectives.

Frank Rose, my colleague at Brookings, was like Secretary James in the Obama administration, he had the important job of assistant secretary of state for arms control, verification, and compliance. The compliance part I think being an important and welcome addition roughly during Frank's tenure. Before he had that job he was a deputy assistant secretary focused directly on space issues at State. So he's been living and breathing these issues for a long time himself and we're thrilled to have him at Brookings.

And then finally, Steve Jacques to my far left with Velos, who had previously been in the Air Force, as I mentioned, as a longstanding space officer, and has many perspectives on how well different issues have been handled by the broader Air Force and Department of Defense with space not being its own military service.

Just one last final reminder. Some of you may recall for a while space

did have its own combatant command based out in Colorado. And this was true until 2002 because in 2002, we decided to create Northcom and at that point at least it was seen as a zero-sum game. If you added one combatant command, you had to subtract another. Northcom was seen as essential after the 9-11 attacks, so space command then reverted back to a subordinate command within other parts of the military service structure and combatant command structure.

So the question before the jury today is, should it now not only have a separate command perhaps, but, more to the point and what President Trump is proposing, should it be its own military service, again separate from Army, Air Force, Navy, Marines, Coast Guard?

So thank you for being here. Without further ado, I'm just going to pose a big, broad, simple question to each panelist and ask them to give their short answer first. And then we'll come back and get into some of the more nuanced responses and considerations subsequently.

But Secretary James, if you could begin us with your thoughts on whether there should be a separate Space Force.

SECRETARY JAMES: So in my very short response, Michael, and thank you very much for putting this panel on this event together, my very short response is no, I do not believe that we should have a separate Space Force. And I come down to a fundamental as to why I think this is so.

I always like to begin with asking what exactly is the problem that we are trying to solve? And then if a major reorganization is the answer, great, sometimes that's just the ticket. But other times it will mask what the true problems may be. So for me, having been Secretary of the Air Force for the three final years of the Obama administration there were four key areas that I would hear people talk about and sort of criticisms of the Air Force's management of space.

The first key criticism was money, that the Air Force was not devoting enough money, time, and attention to space, but it basically came down to money. And to that I say if money is your issue, Space Force is not your answer.

During my period of service we pumped \$5-1/5 billion more into the space enterprise and in the FY '19 budget alone there's at least \$7 billion more on top of that. So I would argue space is getting a lot of time and attention and money. I gave it a lot of time and attention. I know that Secretary Wilson and General Goldfein do the same. So if money is your issue, Congress needs to appropriate more, Space Force is not your answer.

The second key area that was frequently raised is that the acquisition system is too slow. And by the way, I agree, the acquisition system across the board in DOD is too slow. But if acquisition slowness is your problem, I would argue Space Force is not your answer.

Rather the answer is continue to do exactly what is being done. Drive down decision-making. Empower your program managers more. Use the authorities Congress has given to do more creative and quick things. These are the answers, quick prototyping, et cetera. Space Force is not your solution.

The third thing is more focus on the people of the space enterprise. That's another criticism I've heard. Once again I say, if people is your problem, Space Force is not your solution.

Rather better solutions to those people issues could be reform of DOPMA, the Defense Officer Personnel Management Act, which, by the way, is working its way through Congress, which will help not only the space enterprise, but other career fields, as well. There could be more done with the Secretary of the Air Force's instructions on promotion boards. They could redo requirements of the staffs across the Air Force to make room for more space personnel to be integrated with those staffs. So

once again I say, if people is your issue, the 10 to 35,000 people of the space enterprise I think would get totally lost in the bureaucracy of the Air Force with a brand new Space Force.

Finally, warfighting focus. That is the final thing. And by the way, I think that is the key thing that is driving the President with his announcement, a warfighting focus. By the way, I agree, we haven't, if you look back over the 20, 25 years, done enough. I think we've done a lot more in the last five. But if warfighting focus is your issue, Space Force is not your answer.

A military service trains, organizes, and equips, it doesn't war fight. The combatant commands do the war fight. And so just as you heard Michael O'Hanlon said, I would support a full-up, unified command, so it would be the equivalent of a Stratcom. I would certainly support that going forward to focus solely on space. The NDAA has a sub-unified command, which is kind of the next level down. I am much more in favor of that approach because I think that would really be the ticket for solving the problem that everyone is mostly focused on.

So in conclusion, we're going to get a glimpse of where the Pentagon is going. In the next week they're going to come out with their first report on this matter. None of them are in favor of a Space Force. I say none of the top leaders, but they're stuck. The President has said it and it'll be interesting to see how they now deal with it.

MR. O'HANLON: Thank you. Very concise and pithy and a great start.

Brian, over to you.

MR. WEEDEN: Thank you, Mike. So I'm just reorganizing my thoughts because she already captured a couple things I was going to mention. Excellent points, by the way.

I would say overall I very much understand the challenges that are driving the interest in a Space Force and I do think we have changed. But I am I wouldn't

say cautious, maybe skeptical that the Space Force is the answer to solve those problems.

You know, I would highlight what's going on in the space domain as three big trends: globalization, commercialization, and militarization. We're seeing a lot more countries get involved in space. They're doing lots of different things in space. Some are doing the full spectrum that the U.S. is; some are doing just a piece of civil or commercial or national security.

We're also seeing the commercial space sector finally take off and is probably going to eclipse the government activities in space for the first time and then continue to outstrip them.

And then finally, militarizing, we're seeing space go from a largely strategic domain to, as Mike suggested or pointed out, basically being integrated at all levels of warfare and being in the central component of pretty much every military operation here on Earth in the near future.

And all of those are driving changes. So the question is, is the current makeup, which has the Air Force be the lead for the military component to space, is that still the right method to go forward?

So to build on something that Deborah talked about, I would highlight a couple of other things. I mean, at the moment I really don't know what the Space Force is. It doesn't have a lot of definition to it. And at this point, that kind of means it means everything to everybody. It can be whatever you want it to be.

Some people are talking about it's going to be this warfighting element. Well, as was pointed out, that's actually not what an operate, train, and equip service does. They build things and they recruit people and they train people to go operate them, and then turn them over to a warfighting command that goes off and does the mission. At the moment that's Stratcom. The Congress is currently proposing to shift that to a new

sub-unified command for space. I agree, I think that is an important step forward, so that's going to take care of the warfighting part, so the warfighting and all that indicates.

Other people have talked about this Space Force is going to do all these new things that are currently not being done. And I've heard crazy ideas, everything from riding shotgun on commercial lunar mining missions to space-based solar power to everything else, ideas that have been around for a long time that the traditional military has often said no to. Well, in my mind does that take the focus off of what the real mission should be, which is support to military operations and activities here on Earth?

And then finally I'll just say I'm cautious that we're going to spend all this time on what is really a major reorganization instead of spending time actually fixing the problem. There has been a growing concern, all these trends and increased concerns about adversaries in space, adversary actions from Russia and China and the need to do something about that. I'm not convinced spending the next year or two years or three years or more with a lot of time and effort doing a big reorganization to then be able to tackle making the changes to address those problems is really the best way forward as opposed to actually addressing them.

And finally I'll just say there are other options. This is a debate that's gone on for a long time. A Space Force is sort of on the most independent side of the spectrum; little bit less independent, you know, the notions of a Space Corps, which would still be related to the Air Force for some administrative functions, but would have some independence, like the Marine Corps does. There are other crazy ideas out there, too, like a Space Guard, which is something like a Coast Guard for space where it would have a peacetime role and then it would transition to a military role.

It's not clear to me that the argument has been made that the Space Force is the answer to address all these challenges. And I'll stop there.

MR. O'HANLON: Thank you. Before I go to Frank, thought, just one

quick factual matter I just want to make. And Steve or others or Frank may want to comment on this when they get the mic in a second, but just to get a sense of what we're talking about here, the Space Force, do you agree with Secretary James, would be pretty small? So, for example, if I can just remind people of the numbers here, the active duty Army is roughly 500,000 soldiers and another slightly more than 500,000 reservists and guardsmen/guardswomen, so more than a million people in uniform. The Air Force and Navy are each a little over 300,000 active duty uniform; the Marine Corps a little bit less than 200,000. So that's the pecking order in terms of size. And the Coast Guard is 40,000-ish.

So a Space Force would be similar in size to a Coast Guard more than to any other military service. Is that a fair agreement we would all have across the board? Great.

MR. WEEDEN: I think Air Force Space Command bills itself as roughly 40,000, which includes military as well as contractors. And the Coast Guard's also around 10- or \$11 billion budget, which is roughly around where the Air Force budget for space is, at least the unclassified budget. So yeah, it's on the same order of magnitude.

MR. O'HANLON: Great, thank you. Frank, over to you.

MR. ROSE: Well, thanks very much, Michael. It's great to be here today. Let me start by saying I'm undecided with regards to whether the idea of a Space Force is a good idea or not. I don't discount the possibility that Trump was watching *Star Wars*, saw the Death Star, and said I need to get me one of those. (Laughter)

But in reality, this is a very serious issue and it is primarily driven by the development of anti-satellite capabilities by Russia, China, and others. And this is something that President Obama himself was very focused on in the last two years of the administration. So it's a serious issue.

I think Brian and Debbie did a nice job talking about the concerns. The

pro I would say is fundamentally about is this the right way to deal with the ASAT threat? And that's really what we need to be focused on.

Now, I do have some concerns about the Space Force, specifically how it was rolled out. It's very clear that there was almost no consultation whatsoever with the Department of Defense, and this was a decision by the President which was made on the fly. We cannot make serious national security decisions on the fly. We need to think them through.

The second concern that I have is about integration. When I was in government, I really focused on these strategic capabilities issues: space, cyber, nuclear, conventional strike. And what I came away with from my time in government is that we have seen increasing integration across these strategic capabilities. And this is something that Secretary Mattis, I know, is concerned about. Let me read a quote.

This is from a letter that he wrote to Congress last year with regards to the proposal to create a Space Corps. He said, "A Space Corps would likely present a narrower and even parochial approach to space operations versus an integrated path that we're on." So that's a big concern.

If we were to do a Space Force, how would we ensure the integration across domains? I think really in many ways that's the fundamental question in the strategic capabilities area. I'm not sure if a Space Force solves that problem.

And finally, let me say this. I don't think there's a strictly military solution to the challenges we face in space. I think military is part of the response, but we also need a role for diplomacy with the establishment of rules of the road or norms of responsible behavior, number one.

And number two, we need to make sure we are engaging the Russians and the Chinese diplomatically. I know it feels good to hit the Russians and the Chinese over the head with a 2-by-4 and tell them how bad they are. There's a lot of -- they're

doing a lot of bad things. But we also need to find a way to engage them diplomatically, especially on things like minimizing the creation of debris in outer space. And one of my strong recommendations to the Trump administration is they restart the bilateral dialogues we had with both Russia and China on space security. Thanks.

MR. O'HANLON: Thank you very much, Frank. And Steve, over to you, my friend.

MR. JACQUES: Thanks, Mike. I'm a little surprised. I thought today's debate was to talk about whether Bryce Harper's going to be traded or not. (Laughter) You said something about Nationals up front, I felt like we were okay. Son of a gun, now we're here --

MR. O'HANLON: Well, what's your view on that?

MR. JACQUES: Oo, am I on the record?

MR. O'HANLON: Yes, you are.

MR. JACQUES: I could see him go and I could see him stay.

MR. O'HANLON: Okay, very good. (Laughter)

MR. JACQUES: I'm Harper both ways. I'm Harper both ways.

(Laughter) Forty million a year, forget about it.

MR. O'HANLON: You're sort of like Frank on the Space Force.

MR. JACQUES: That's right, Harper for both ways.

MR. O'HANLON: But I'm pretty sure on the Space Force you have less ambiguous views, right? So let's hear them.

MR. JACQUES: Well, happy to do that and thanks again for bringing this together. This is an important event. It's an important time in our nation's history. I will echo Secretary Heather Wilson's views that whether it's popular or not, this is an important to have this debate. We've had this off and on over time. It's good that we're having it today and it's being done at the top level, so that's good.

And all kidding aside, from the likes of like, you know, Stephen Colbert and Seth Meyers, a Space Force is not a simple and it's not a joke. It's something that's really important to talk about.

To answer your question, I will say this. I am a single bellybutton kind of person. I think a focal point is needed. I think indeed we need a new, focused, empowered, properly resourced Space Force, Space Corps, Space Agency. We must have a focused, empowered person on top inside the national security establishment. That is my strong view.

How you do that, how you carve it up as a force or a corps or an agency, I think that's sort of debatable and there are pros and cons there. But we don't have that. We simply do not have that. People have been preaching this for a long time. It's not there.

So in my view, something has to happen along those lines and it needs to be done now.

I say this as an Air Force brat since birth. My dad was enlisted 26 years in the Air Force as an aircraft maintenance guy. I say this as a retired Air Force officer myself and the totality of my career I spent in this specific domain out in Los Angeles, in the NRO, across the Pentagon, working Hill legislation, et cetera. I've been lucky to be wrapped around or be supporting just brilliant people that I was a young guy tied with, senior folks, seeing a lot of things happening at the high levels. And as an Air Force officer I find it difficult to be critical of my former employer in the service.

But as a lot of you folks know, you know, when you're in the acquisition business and you're dealing with let's say an upcoming major competition with industry, you're pulling together a source selection team. Whether it's a big acquisition or a small acquisition there are a lot of criteria you put out in these competitions: technical, schedule, performance, cost. What's one of these key criteria? Past performance.

Past performance is believed by the government to be an excellent predictor of the future. And you want to pick someone who you know is going to be able to ensure that the government gets success in the future.

So with that said, my feeling is that 40+ years of past performance across the government over the years is currently on a path that is a losing proposition. Something has to change. My feeling is a new, focused, properly empowered, properly resourced Space Force is a good answer.

We all know, as we've said, every succeeding year our military services, our co-COMs are increasingly reliant upon space systems to ensure our national security. We don't need to dwell upon the missions. But we also know, as we've said before, that other nations are becoming more militarized in space.

We are still the world's space-faring nation. But compared to our adversaries, not as much. Why? Why are they gaining? Because they get it. They understand space is critical to their nation's security.

And secondly, our own U.S. leadership, as the years have come and gone, notwithstanding individual decisions that seemed to have made sense at the time, the cumulative effect seems to be that over time some of our nation's leaders have just assumed in a passive way that the space systems will always be there. The lack [sic] of a focal point in my opinion is really necessary.

So what's the resulting math of that? Are the other adversaries gaining on us or not? You can come to that conclusion yourself, if you'd like.

We can spend a lot of time talking about commission after commission's views on this. Oftentimes they were good studies. They were summarily ignored by the administrations coming in behind them. But again, it's about the incremental decisions over the past, cumulatively and unintended at the time, I think have contributed to where we are today.

In general, and I'll conclude on this, I think it's in two separate categories, but they are intimately related. And that is focus and empowered leadership, as I said, and the workforce, the professional cadre of space professionals over the years has dramatically been diluted.

MR. O'HANLON: Fantastic opening round. I just want to play a very small role here and tee up one additional question, then just let people go down, embellish and develop any of their original arguments, respond to anything else they've heard.

But I want to add one more question to the mix as we do that, which is as we think about the evolution of the Air Force, a service that's only been around since 1947, we think of an Air Force that in the early decades we associate with Curtis LeMay and strategic bombing and nuclear deterrence and then the use of big bombers in Vietnam, as well as, obviously, shorter-range systems. And in my very imperfect understanding of the evolution of the Air Force that was one big period. And in more recent decades critics will sometimes say the Air Force is basically now run by the fighter Mafia, so to speak, and that it's been hard for the bomber community, the unmanned community, and the space community to have an equal voice or an adequate voice.

So I guess I'm asking that question partly just to request any kind of clarification of whether I'm right. And if I am right, for the proponents of keeping space within the Air Force, how do we elevate the voice? How do we, Secretary James, and I'll turn it over to you now, how do we continue the momentum that you tried to create and develop of having space get a greater voice in a service that still is largely dominated by short-range combat aircrafts specialists?

SECRETARY JAMES: All right. Well, first of all, I will tell you, and I was in OSD in the 1990s in addition to my time in the '80s on the House Armed Services Committee, where I was only five years when I started because I always date myself

when I talk about this long career of mine. (Laughter) But I will say certainly there are tribes within the Pentagon. There are tribes within the Air Force and so are there tribes within the Navy and the Army and right on down the line. So I would say it is way better and much more integrated now than it was the Pentagon of the 1990s, the military services of the 1990s. The jointness is better than it's ever been. And I'm sure in the years to come it will continue to improve.

But tribes are sort of a fact of life and creating a Space Force won't reduce those tribes. It will simply create another entity which I have no doubt would do its best to organize, train, and equip, and advocate and whatnot. But you heard me already say I'm not in favor. It would be too small. I think it would get lost in the shuffle of the three big -- four big services that currently are the Department of Defense. Remember, Coast Guard is under a separate department of government. And frequently, if the Coast Guard commandant were here would probably tell you the Coast Guard struggles within that department.

I would also say that using the logic of space is terribly important, which it is, therefore, we need to separate it out to be its own separate military service, if that logic persuades you, then I would argue you would also have to be in favor of a nuclear force. You would have to pull the nuclear forces out of the Air Force and the Navy, set them up. And I have heard it said, and believe me I think it's true, nuclear over time didn't get enough attention. I certainly tried to change that. A lot of changes were put in place, but we didn't create a whole separate force for just the nuclear enterprise of the Air Force and the Navy.

Similarly, I could argue there's no single bellybutton for air. We have aircraft in the Air Force, we have them in Army, we have them in Navy. Shall we pull all of those out and create a separate force for air and air alone so that it's fully integrated?

My point is this: You can organize and reorganize in any way you could

think of, but the real question is, is the juice worth the squeeze? Because you go through a major reorganization, for anybody who's ever been through it, you will spend years. You heard Brian say one, two, three. I'll bet it's 5 to 10. Look at DHS, the thrashing that has gone on.

Eventually, it'll settle out, but you will go through years of thrashing. And is that thrashing going to slow your momentum or is it going to help you achieve your goals and address the real challenges that we have on our plate? And again, I come down to I don't think so. I don't. I wouldn't vote in favor of it.

And the last thing I want to say is, you know, and I did this, too, as public officials we always very openly talk about our challenges. And we are honest when we testify before the Congress and there are challenges in the space enterprise. And what you've heard about our adversaries catching up to us, getting closer to us technologically, being able to threaten certain assets, all of this is true. But I don't want to leave any doubt in anyone's mind, we are the number one country in space and in every other domain. So don't let all of this discussion of challenges and whatnot ever confuse that point in your mind.

Do we need to do more so that we continue to stay ahead? You bet we do. But we are already ahead. Every other country looks at us with envy. So please don't ever forget that as you hear us debate these possibilities.

MR. O'HANLON: Thank you. Brian, over to you.

MR. WEEDEN: Excellent. And a quick plug, if you want to learn more about what those threats are, we published an open source report on global counterspace capabilities a few weeks ago that looks at what Russia, China, U.S., Iran, North Korea, and others are doing to develop those capabilities.

MR. ROSE: It's really good.

MR. O'HANLON: SecureWorldFoundation.org?

MR. WEEDEN: Yeah, swfound.org. I just want to pick up on this integration question, highlight a couple aspects. I think it's really important to this debate. And the two aspects of it are integration of what's going on in space with what's going on on the Earth, and then the acquisitions piece.

On integrating space activities to Earth activities, one of my concerns with having a separate space entity is that they're going to start doing space for space reasons. And when I was in the Air Force doing space stuff we were told that's not what we did. We did our stuff in space and it was all connected and had to be driven back to a mission of how do we support forces on Earth and how do we enhance our priorities and national security here on Earth. And so one of the concerns is that you, and I say this as a space geek myself, you take the space geeks and you put them off by themselves and they're going to be off doing things and focusing on things to satisfy what they want to do in space that is not necessarily connected back to what the U.S. needs on Earth.

And the second piece is on the acquisitions front. Focusing on building better satellites, more resilient satellites, more capable satellites is all great, but that's only part of the equation. The satellites are only as good as how well they can be used. And so what often gets missed is their end-user segment.

One of the concerns about having all the space acquisitions firewalled off is what happens to the connection with let's say, take for example, GPS? GPS is only greatly used because we have GPS receivers built in every bomb, every tank, every airplane, every ship that can make use of that. Same as satellite communications. So how does this totally separate, firewalled off space acquisitions process integrate itself with the end-user terminals and end user segment acquisition processes? That's a concern for me if we're going to go off and make this totally separate.

MR. O'HANLON: Thank you. Frank?

MR. ROSE: Let me just build on the point that Deb and Brian made

about integration. I think integration is key. We need to make sure that space is connected and fully integrated with the other domains.

And at this point let me give a shout out to Deb. When she was Secretary of the Air Force, she put for the first time ever a space operator, General Jay Raymond, who's now the head of Air Force Space Command, as the Deputy Chief of Staff of the Air Force, which was traditionally a fighter pilot position. That's the types of things we need to see.

You know, my personal opinion, I would like to see perhaps the next Chief of Staff of the Air Force be a space operator or come from the non-fighter community. Because at the end of the day, when you look at where our military is going overall, that integration is going to be the key to our success.

MR. O'HANLON: And Steve?

MR. JACQUES: All good points. I think one thing I would like to point out is that through all these ups and downs and goodness and slipping, if you will, from a leadership perspective, the endgame product I would certainly agree with the other speakers, and that is on the operational side we as a nation have become stronger and stronger. Notwithstanding the divorce, if you will, of the NRO from the Air Force some 12, 13 years ago, there is voluntary cooperation that's taking place between the military services and the NRO. I'm pleased to see that.

Having said that, I think the leadership element still is absolutely essential. And I really believe at the end of the day that position needs to be legislated because the legislation then at least puts something in place to where certainly as the administrations come and go, they can choose to play with it, they can choose to take it seriously, they can choose to not take it that seriously. But throughout all this time in our nation's history we've not had a legislative person in charge of space. And the director of the NRO all the way up until today has always been an assigned position, not a

confirmed position. The director of the NRO for 50 years was dual-hatted with the Air Force position.

You take people like John McLucas, Jim Plummer, Hans Mark, Bob Hermann, Pete Aldridge, Marty Faga, Keith Hall, Jeff Harris, and those folks, those folks were always in either undersecretary of the Air Force positions, Secretary of the Air Force positions, and then later, unfortunately, as assistant secretaries of the Air Force, which I think was one of these steps down. But still, that position was the confirmed position in which the director of the NRO worked. That person was dual-hatted.

That doesn't exist anymore. Under the Rumsfeld administration they chose to divorce those two positions. Why would they do that? Another incremental decision that has had cascading impacts from an authority standpoint, from a focal point standpoint, and from a properly empowered person standpoint. I think that's been a big problem. It is a contributor to where we are today.

MR. O'HANLON: Quick point from Frank.

MR. ROSE: Yeah, Mike, can I just build on that and really ask a question to Debbie? You know, Steve, you talked about that there's no one in charge of space in the Pentagon. Debbie, in addition to being Secretary of the Air Force, you were also the Secretary of Defense's senior advisor on space. And the question I have for you is, in that role as principal advisor for space did you feel like you had the necessary authorities to make decisions?

SECRETARY JAMES: Well, it would have been great to have even more authorities, but the biggest authority that I had, that I tried to exercise well and forcefully was I had the power of the mouth and the power of advocacy and the power of sitting at the table to include the White House and the interagency and certainly within the Pentagon, the various budgetary discussions and so on that would go down.

I would say the single bellybutton for space is the single bellybutton for

many things and that is either the deputy secretary or the secretary because the expectation is that we will collaborate with one another, that we won't simply dictate, but rather that we will coordinate and try to work things out because we are mutually supportive. We the military services are supposed to be mutually supportive of one another. So the process always was if there were disagreements, you would go to a body that was usually headed up by the deputy secretary of defense, who would then hear the arguments and would ultimately make a judgment call, and then all of us would march in lockstep.

So, again, when it came to a space issue -- and even I went against my own services at times. I would write issue papers and we would bring issues up to say, hey, we really think there should be more going to space in this category or that category. And if it was a debate, and, again, I would yield to my undersecretary to represent the Air Force in this case, we would take it to Bob Work, the then deputy, who would decide. And I'm trying to search my mind whether I ever lost one.

In other words, when I would use that power of the mouth, that power of advocacy, he was very much on board for doubling down on space. And this is how, at least from a money perspective, we did \$5-1/2 billion more, I would remind you at a time when we were just out of sequestration and money was very tight. And now that money is less tight, they're pumping even more money into space.

The JICSpOC, which has been renamed as the Space Defense Center, I believe is the new name that was created during this period that I'm speaking about. A new training plan was put down for our space personnel so that they would graduate from simply being able to operate satellites to being able to figure out how to maneuver and play the chess game that you play in a war fight scenario of how would you actually defend the constellation. We're now doing more war gaming that relates to space.

So all of these changes, again, I'm referring back to my tenure, there's

been even more since, we're moving absolutely in the right direction, I believe. And again, a Space Force and the thrashing and a major reorg could really slow us down.

MR. O'HANLON: Just one more factual clarification for me for you all to speak to, and then I want to ask my final question before we go to the audience. Roughly what percent of overall full-time space specialists would be in the Air Force?

So I realize -- and this is a point Brian really harped on, which is important, that's really not a great way to ask the question because you want to think about people who are doing space, but integrating it to whatever else their service is doing. So I don't want to oversimplify the question except I do sort of want a feel for whether the Air Force accounts for half, two-thirds, 90 percent of all the full-time people. I realize some of these numbers may be verging on classification questions, as well, so I'm not looking for an overly precise answer. But can anybody help us with a rough ballpark?

MR. WEEDEN: I can take a stab at it. As I said, space analysts, roughly 40,000 people on a website. That includes both military and civilians. The number I've heard is that the actual full-time space professionals working on acquisitions or on flying satellites is somewhere on the order of several thousand that are in Air Force Space Command.

The Army probably has the biggest chunk. They've got a curricula called the FA-40s, which are sort of their space integration people. Those number several thousand, as well.

And then the next biggest chunk is probably at the NRO where they don't talk about total numbers, but you can probably imagine several hundred, maybe a few thousand there.

MR. O'HANLON: Any dissent from that or is that a good framework?

MR. JACQUES: I think it's reasonable. The only thing I would add to it is there is a belief out there that the Air Force owns 90 percent of the topline budget.

That's not correct. If you take a look at the entire budget across the national security domain, the Air Force component of that is under 50 percent.

MR. O'HANLON: So my last question, and we'll again work down the panel if we could, is what happens next? Or if you will and you prefer, what should happen next? Not so much in the substantive outcome, we've all spoken to that, but in terms of process.

So we know that Congress has been seriously considering President Trump's serious idea. I think it's actually, you know, in a time when Washington has got its challenges, the debate's not so bad that we're having. And the fact that we have a little bit of a hiccup for President Trump's vision may not be so bad either, but I know the debate's not over.

So what should happen next or what do you expect will happen next in this debate as we consider whether to create a Space Force or a Space Agency or a Space Corps or a Space Command or what have you? Secretary James.

SECRETARY JAMES: So I will say first we have the NDAA, which is working its way through Congress and is on the verge of being approved, so I think it will be approved and that NDAA does direct a sub-unified command for space under Stratcom. So what this would do in practical terms, it would empower the current Air Force Space Command commander, who is General Raymond, it would give him more sort of power over jointness within the space community. That is to say those Army and, to a degree, Navy personnel who are involved with space. He would have a greater say on those personnel and the whole warfighting aspect. So that's pretty much I'll call it a done deal.

There is also requirements that this command, this new sub-unified command, develop warfighting policy, strategy, new report to Congress, et cetera. I'll also mention there's a done deal that there are DOPMA reforms, which I think will

address some of the personnel issues that critics have talked about within the space enterprise, as well as across the board in other communities, as well. So I consider that to be a very positive step.

On the Executive Branch side, the next step is what will the Department of Defense say? They've been working on a report. I understand that the report was let's say 90 percent written and then when the President made his pronouncement, they literally had to throw it out and start over.

So what will this report say? It is due later this week, so will it come out on time or not or roughly on time? That's a question. But I suspect one possibility that they're going to do is they're going to lay out different options. And I think the care that must be taken there is that if all of these options are adopted, you could create inadvertently a Frankenstein's monster because these options don't necessarily work together with one another smoothly.

So the options could be everything from either the sub-unified command and a full-up combatant command. It could be having a Space Agency, which would be kind of a new acquisition arm. It could be a Space Corps, which would be more designed to focus on people and organize, train, and equip. And there could be a SOCOM-like model, which could be like a sub-unified command or approaching a combatant command.

I think you're going to see all of these things talked about in this report. But as always, it'll be the first report. So it'll be, you know, the 10,000-foot level and there will be tons of questions, and how in the world would you implement all of this, which would be then the follow-on work.

MR. O'HANLON: Fantastic. Brian?

MR. WEEDEN: So, you know, when the announcement was made, I think those of us that kind of know how the process on this works and the need for

legislative stuff imagined FY '20 would really be the first time we saw anything real happening in terms of movement towards a Space Force, and that's just because of the planning process.

So as was mentioned, the Shanahan report, which was directed by Congress, is due to wrap up this month. The next step then is going to be for the administration to figure out what it wants to put in its Fiscal Year '20 budget request to Congress. That usually comes out around February. And so then that leads into the debate next year in the spring and into this time next year about what's going to happen.

On the side of Congress, Chairman Rogers, who's the chair of the House Armed Services Committee, has really been one of the people pushing this issue within Congress. He's the one that's led several hearings, really led for language in a previous NDAA that led to the Shanahan study that's going on right now. It was reported by Politico late last week that he said he plans to introduce Space Force legislation around the January timeframe, so that then it could be discussed and possibly integrated into the FY '20 discussion.

So that's really my understanding of when we're going to see this take shape, if any, is the findings from the Shanahan report are going to then influence the Trump administration's FY '20 budget request, which will then go to Congress, and we'll be having this debate for real starting next spring.

MR. O'HANLON: Super. Frank?

MR. ROSE: Let me say that ultimately it will be the Congress who makes the decision whether to create a Space Force or not. And I think it's going to be very, very important that Congress have a very solid and in-depth debate on the pros and cons of this.

My concern is this. Because the proposal is so readily identifiable with President Trump, after the November elections there will be a "reflexive" anti-Trump

sentiment and we will become engaged in a partisan debate. That is not the right way to go.

In my view we need to have a serious debate on the pros and cons of the Space Force. Yes, it does come from President Trump. He has embraced it. But a lot of Democrats have embraced the idea of a Space Force, including Congressman Cooper, the ranking Democrat on the House Armed Services Subcommittee for Strategic Forces.

So let's have a serious discussion led by Congress that seeks to come up with a bipartisan solution. Because as I noted a little bit earlier, President Obama himself was very, very concerned about the threat to our space systems. And I spent a lot of my time during the last two years of the Obama administration sitting in the White House Situation Room with Debbie going through all the things that we needed to do with regards to responding to this threat. And I would hate to see this debate overcome by partisan considerations.

MR. O'HANLON: Thank you, Frank. Important point. Steve?

MR. JACQUES: Good points made by all. You know, really, as has been suggested, this really is not -- this is an apolitical issue. This is an apolitical issue. We have a Republican Congress beating up on a Republican administration. I mean, it just happens to be these are the people that are involved today.

I really believe, as Debbie has said, that there's a lot going on inside the administration working to answer the queries coming from the Hill. There is a '20 (inaudible) package being contemplated right now. The Space Council now chaired by the Vice President is now a new entity we've not really touched upon, but it is an element that we would consider to be a positive element. So there's focus in the White House on this.

And as we've mentioned, it's apolitical on the Hill. I mean, Ranking

Cooper is just as actively involved as Mike Rogers is, as is Mac Thornberry. They're silent on the Senate side for the most part, but they've not shown opposition to speak of.

So the cycle is going to -- this is not going to go away. I believe Chairman Rogers will be resolved to boarding some kind of legislation in the '20 cycle.

MR. O'HANLON: Fantastic.

MR. JACQUES: I'd put my money on that.

MR. O'HANLON: Thank you. Let's go to you. Please wait for a microphone once I call on you. And please identify yourself. We'll take about three questions per round. We'll start up here in the front two rows and then the gentleman in the white shirt in the sixth row for our first round.

MR. H. ROSE: Thank you. Herb Rose. I look at the panel here and I see no faces that look as old as mine does, but maybe you have some historical information about the development of the Air Force. I was born before World War II and remember that when we went from a corps, the Army Air Corps, to the Air Force. I'm wondering whether you see any -- the situation was different then than we have today, but were there any considerations then that might be applicable today in making this decision or transition?

MR. O'HANLON: Thank you. Right here behind you.

MS. IRWIN: Thank you. Sandra Irwin with Space News. Thanks all for having this panel today.

I wanted to pick up on Secretary James' point about momentum and the Air Force presumably has some momentum going and some things they want to do in space. So based on your experience, all of you, when you look at potentially a two-year process to reorganize DOD or the Air Force, how likely is it to disrupt or slow down or potentially roll back some of the momentum in the Air Force? And how difficult will it be for them to stay focused on doing some of the things they're doing in space? Thanks.

MR. O'HANLON: Okay, thank you. And then one more here the sixth row, gentleman in the white shirt.

MR. SQUITIERI: Thank you. Good morning. My name's Tom Squitieri with Talk Media News. My question follows up a little bit on the first gentleman's.

The Air Force, 70 years ago was the brilliant airlift and it sort of gave credence to the creation of the Air Force. It proved, as the advocates said, that we needed a separate entity for the Air Force. Will it take something like a Berlin Airlift challenge to spur forward any kind of development of a Space Force, Space Corps, whatever you want to call it? Thank you.

MR. O'HANLON: So to answer, why don't we give the floor first to Secretary James? Because she had a question directed to her. And then I want to ask Steve to start with the other questions, which have a more historical flavor because, like me, he's one of the older guys on the panel. So we'll do it that way.

Secretary James, over to you, please, first.

SECRETARY JAMES: I think it is a virtual certainty that if a Space Force is legislated and if it, in fact, goes through, it is a virtual certainty that it will be a huge undertaking. It will consume a lot of time, effort, thinking. Absolutely it will be call it a distraction.

Now, again, ultimately it could be the best thing since sliced bread, but it will be a huge distraction while they're going through it. And it can't help, therefore, I believe, slow the momentum. Because right now all the focus is on getting things done and suddenly it will shift to who's going to report to who and how do we get these directives written and all of the many things that go into creating a brand-new bureaucracy. And I don't even mean bureaucracy in a bad sense. I mean a military department would be a new bureaucracy that would have to be created.

Again, let's just take a small example: the reorganization of the

undersecretary for acquisition, technology, and logistics. That's taken two years already. It's only now sort of finalizing out the plan. They've announced they're going to be reducing headcount. I can tell you that's going to either cause riffs, the people will have the opportunity to go to other jobs perhaps. There's going to be a lot of shuffling around. So that's a small example of a bureaucratic reorganization, and it's caused a lot of tumultuous activity.

Now, it will settle out. And to Ellen Lord's credit, she has done all the right things in my judgment. She's pushed a lot of these authorities down. She's taken a lot of the checkers checking the checkers out of the equation, which is the right type of move. Whether the reorg had ever happened or not, she's making the right types of moves to speed things up and to focus on innovation.

But again, I think it's a virtual certainty that it will distract people and that the momentum will be challenged.

MR. O'HANLON: Steve, over to you and then we'll go to Frank and Brain.

MR. JACQUES: Sure, thanks. You know, the Rumsfeld Commission said be careful, there could be another Pearl Harbor coming up in space. Pearl Harbor was very visible. We saw it, we felt it, we were impacted by it. Space is invisible; you can't see it. We know there are threats on our systems out there, and there are increasing threats to our systems. How do we handle that? That's a key element that concerns me.

Is it worth the trouble to pull together a new organization? I believe it is. I believe it's the return you'll get on your investment over time will actually pay off. I worry about the tribalism concerns that Debbie's mentioned because people will tend to hold back, hold back on dollars, hold back on people.

I remember talking recently to a tech sergeant over in the NRO, an Air

Force tech sergeant who's been doing space operations his whole career. He's in his late twenties. He was concerned about what would happen to him. He's talking to his friends, his colleagues, his fellow folks in the Air Force. You know, it's going to take a few years for this to happen, if it happens at all. Am I going to get a choice to stay? Am I going to get a choice to opt-out? All these things are rippling down to the actual workforce.

And so these are things to be concerned about. And with proper leadership and authority, which is easy to say, governance is hard to do, I personally think it's worth the effort.

MR. O'HANLON: Frank?

MR. ROSE: You had mentioned a Berlin Airlift moment. I would argue we've already had that and that was China's 2007 ASAT test. I think the key question now is, how do we respond to this threat?

Believe me, this issue has senior government attention from the President on down. From my perspective, we need to be deliberative and we need to get this right. We cannot make rash judgments because I think if we make rash judgments on the fly, we could actually hurt our ability to respond effectively to the threat.

MR. WEEDEN: So I'll just pick up on that theme real quick and use another example, one that I'm intimately familiar with, that's the creation of the JSpOC, the Joint Space Operations Center. 2006, I was an Air Force captain working in Cheyenne Mountain for the unit, the 1st Space Control Squadron that did space surveillance and tracking. And around that time period they made the decision to create a new operational center for space out of Vandenberg Air Force Base that integrated what we did along with the people that did command and control of all space assets and threat monitoring, as well as integration with the warfighter.

And so they stood up this new unit out of the JSpOC. They put a lot of

effort into it. It was a very traumatic experience for those in involved. My squadron commander at the time said it was like changing the engine of an airplane while you're flying because you can't stop doing the mission to go ahead and make this big change.

Ten years later, we've basically undone that change. They've devolved the SSA mission back to now the 18th Base Control Squadron. They've devolved the Battle Management Command and Control mission down to the National Space Defense Center. And they've renamed the JSpOC as the Combined Space Operations Center to mainly focus on the space integration of the warfighter, which is a very important mission.

So I just mention that as even a relatively small change, like the creation of an AOC for space, can take many years. It's extremely difficult to do, particularly if it has to keep doing the mission. And the creation of a Space Force is going to be orders of magnitude more complicated than that one change.

MR. O'HANLON: Super. Let's go to a second round of questions. We'll start here in the second row and then we'll take the gentleman on the aisles here in the fourth and fifth rows.

MS. MACIAS: Hi, thank you. Amanda Macias with CNBC. How expensive could the creation of a Space Force look like? And are you tracking new military academy, new ranks, equipment, uniforms, those types of logistical questions?

MR. O'HANLON: Great question. Back here.

MR. CHECCO: Larry Checco, Checco Communications. I'm just wondering is there enough focus on space? This is an administration that's kind of withdrawn from trade, climate, made withdrawals from a lot of the globalization stuff that's going out there. This is one of the few areas that they're pushing forward. Is there enough focus right now on space and are we worried at all? And I think has been kind of talked about in tangent, but is there enough focus so that we don't have to worry about somebody else, to Steve's point, filling that void that we may be leaving if we don't focus

enough on space?

MR. O'HANLON: Thank you.

MR. FUDASHICK: My name is Ryan Fudashick. I'm a senior at American University and the intern at the Aerospace Security Program at CSIS with Todd Harrison. And my question is, if there is a unified space group, whether that be a force or a unified command or a corps, to what degree should we incorporate intelligence assets, like maybe the NRO or the National Geospatial Intelligence Agency or maybe grab the SBIRS constellation, et cetera? And I'm not asking you to name, you know, specific programs, but can you comment maybe more on the blending between Title 10 and Title 50 and the degree to which intelligence assets in the military are integrated in the space environment, what that should look like?

MR. O'HANLON: So this time we'll go reverse order starting with Brian, who I think volunteered to tackle the budget question, as well. But I want to ask somebody in the course of this to clarify one thing, too, which is when we talk about a Space Corps, I'm assuming the model there is the Marine Corps, which is a separate service, but within a Department of the Navy in that case. So the Space Corps, presumably, would be a separate service, still under the Secretary of the Air Force. I'm just guessing, but somebody can perhaps clarify. Okay.

MR. WEEDEN: So I'll just tweak, I mean, all those things about the new uniforms Twitter thread was one of the best things in the last few months that I saw, the new space uniforms. I mean, all those little decisions, right, about do you have a separate academy? How do you do promotion schedules and what does a career path look like and uniforms? That is all the bureaucratic minutiae that Debbie has highlighted as the thing you've got to figure out that is a distraction from actually doing the mission and answering the big questions, but they're the thing that invariably is going to happen when you create a new organization. The first thing you do is what is the logo? What is

the mission statement? What is the vision statement? And what do our uniforms look like?

And just quickly to your point whether there's enough attention, I would answer that yes and no. I would say I think there is a lot of attention. As Frank mentioned, towards the end of the Obama administration there was presidential level attention on the national security space issue and how to deal with the threats. I think we've made a lot of progress in the national security side, particularly in the military. But what I have not seen is a lot of focus on the diplomatic side is what Frank has talked about.

You know, there's thousands and thousands of people and billions and billions of dollars focused on the military equipment/hardware side. What are we putting into the diplomatic discussions, you know, the other piece of -- you know, in the military we talk about national strategy has four elements, DIME: diplomatic, information, military, economic. We can't just focus on the military. What is the rest of that?

I do think the Space Council is helping. And they have somebody like Scott Pace, the executive secretary, who knows his way around all this. And that integration function across all the different departments and agencies can help, but that's got to be backed up with resources. And for right now, almost all the resources are going on the military side, not necessarily on the other piece of the equation.

MR. O'HANLON: Frank?

MR. ROSE: Let me just build on the point that Brian just made. I actually think that the Trump administration has done a good job on focusing attention with regards to outer space. I think reestablishing the National Space Council with Scott Pace as the executive director and the Vice President as the chair has done a good job at integrating national security, civil, and commercial space.

Additionally, with regards to their overarching national security

documents -- the Nuclear Posture Review, the National Security Strategy, the National Defense Strategy -- they have incorporated space in all of those reviews.

My biggest concern about this administration's approach to space has really been the lack of diplomatic engagement. Not to toot my own horn, but when I was assistant secretary and deputy assistant secretary, we had numerous engagements with allies and friends on space security issues. My understanding is that those dialogues have been largely dormant over the last 18 months.

Secondly, we also engage Russia and China. Now, while I am 100 percent behind the idea that we need to develop capabilities to defend our systems, we also need to talk to Russia and China. During the Obama administration we established space security talks with China and a bilateral space security dialogue with the Russians. We actually made some decent progress, especially on the debris issue.

So overall, I think the Trump administration has done a decent job on providing focus on space, but the weak point is the lack of focus at senior levels at the State Department to advance the space diplomacy initiatives.

MR. O'HANLON: Thank you. Steve?

MR. JACQUES: I agree with everything you just said, Frank. And I think within that, once again, not to keep beating the same drum, a single, focused, authorized, empowered person in the national security space is essential to help prosecute that kind of campaign. The bigger body politic today doesn't have that expertise focused on under certain leadership. And I think it's in the nation's best interest to take that on and, in many cases, bring it back. Because for 40 years we were confined, we were combined where the leadership was focused. The policy crowd ought to be a part of that inside the national security apparatus.

So I think, I hate to keep saying the same thing over and over again, but getting back what we used to have, we don't have today, and that's a large reason why

we're talking about it right now. And so I'm really hopeful that whatever happens next year and the '20 cycle that someone's going to do an up or down vote.

MR. O'HANLON: Super. Madam Secretary, over to you.

SECRETARY JAMES: Yeah. I would just say I don't know how much it would cost to set up a separate military service or a separate military corps, but if anybody thinks you're going to do it on the cheap, I will tell you I've never seen anything like this done on the cheap. So number one, it'll cost more than whatever they predict, even if they try to do it judiciously. And again, if they do it judiciously, you say, well, that sounds good from a business perspective, but it will put that new entity at a disadvantage bureaucratically. And these are just facts of life.

Whatever happens, though, and you heard my opinion, I don't think a Space Force should take place, I think there's other ways, particularly the combatant command, the sub-unified command to address the most pressing issue here. But if there is to be a new military service called the Space Force, I hope it will be done comprehensively. That is to say I hope it will not only just carve out a piece of the Air Force and call it the Space Force, I hope they'll fold in the NRO, I hope they'll fold in the Army assets, the Navy piece. I hope it will be a comprehensive move.

And by the way, I suspect the leaders of the Army, Navy, and NRO are really trying to fly under the radar on this one because they're trying to hold on. That'll be another bureaucratic mess. But if you're going to do it, do it right, do it comprehensively.

I would say the same thing if it's a corps. Whether it's a force a corps, do it comprehensively is essentially advice.

And the last point, I don't think we need a whole separate call it Space Defense Agency, which would be like a new acquisition organization à la the MDA, let's say, the Missile Defense Agency. I hope we don't do that because, again, if the idea is innovation and speed it up, with all due respect, MDA over time doesn't have a pillar, you

know, a huge track record of speed. They're not considered to be -- you know, again, I mean no disrespect, but they're not exactly the poster child of speed and agility.

So the way to do it on acquisition, I think there's other ways and they're on the right track. Let them do it and don't lose the momentum.

MR. O'HANLON: Another round. Let's see, so we'll go to the woman in about the tenth row on the aisle and then we'll come back here with eighth and fourth rows.

MS. ALBON: Hi. Yes, Courtney Albion with *Inside the Air Force*. I wanted to ask just for you to flesh out some of the ideas on disruption and distraction. I understand that any major organizational reform will have an inherent disruption, but why -- or does there have to be an inherent distraction that comes along with that? And if you would say yes to that, could you break down how you actually see that playing out? How is the mission going to be -- how will they be distracted from the mission? How will this affect the ongoing efforts to improve acquisition, et cetera?

And then if you don't think there's an inherent distraction, what are some of ways that you think -- I guess how do you see that playing out, as well? How do you think the focus can be improved for the process itself? Thanks.

MR. O'HANLON: Great. And we had a question a couple rows up.

SPEAKER: Thank you. While discussing a Space Force it occurred to me --

MR. O'HANLON: What's your name?

SPEAKER: Sorry, Charles. My name is Charles. I'm a student with the Johns Hopkins Advanced Academic Program. When discussing a Space Force it occurred to me that we hadn't really discussed what would be the purpose? Would it be ultimately a deterrent to other nations disrupting communication assets in space? Would there be an offensive asset involving counter KillSats or even space-to-ground weapons?

What would be the ultimate purpose of such a force? Thank you.

MR. O'HANLON: Super. And then we have one more question here in the third row before going back to the panel.

MR. RAPPAPORT: Stanley Rappaport. The first question I'd like to ask is, what is the nature of a space war? And should one have the same prohibitions, treaty prohibitions against starting a space war as you do with regard to nuclear war? Because you need a Space Force. Those are the two questions.

MR. O'HANLON: So, okay, maybe this time we can just start with Debbie and work down.

SECRETARY JAMES: So when it comes to disruption and distraction I know the human beings who are charged with leading are going to do their absolute best to not have it be a huge disruption and distraction. But I continue to believe it will be no matter how hard they try and no matter how much they try to mitigate that disruption and distraction.

First of all, you know, here we are worried about enough money for the space enterprise. We're worried about enough money for the military in general on readiness and modernization issues. Creating a new bureaucracy is certainly going to take money. And you already heard me say anybody who thinks this can be done on the cheap, I think they're wrong. I think it will sap resources away that could otherwise go to capabilities.

I think there will be a ton of workforce issues. You heard Steve talk about what one technical sergeant, what was on his mind. I can tell you the day after the President's announcement that there shall be a Space Force, the top leaders of the Air Force put out an all-hands memo to the entire force basically to try to reassure people, to say, hey, this will be done deliberately, we're going to take our time, we're going to do it right. Because immediately the workforce, the people, the uniformed and the civilians,

says, oh, my gosh, what does that mean for me? Can I stay? Can I go? Will I get laid off? Will I have the same opportunities? What if I want to transfer? A million questions come up in the minds of the human beings who are really doing the real work and that's a distraction.

And then finally I will say these myriad of details, which people joke about, the academies, the uniforms, and whatnot. Those may seem trivial, but they are details that need to be worked out. And then there are other much more important details that would need to be worked out, directives will have to be written and coordinated. These things take time and they will, by nature, just become a distraction and a certain amount of disruption.

I will also say I think this is a deadly serious topic, as we've said. Everybody has said that. And it would be a shame if something so important as a new military service focused on space were somehow born out of ridicule. I think that would be just a tremendous shame.

Finally, what is the nature of the Space Force? Beats the heck out of me. Let's hope one of my panelists here can take that one on.

MR. O'HANLON: Thank you. Brian?

MR. WEEDEN: Yeah, and that question what is the mission of the Space Force, what is it set up to do, that should be question number one that needs to be answered. And I haven't heard anybody actually provide a concrete example of that, you know, from Congress or from the administration.

I'll pick up the last question about, you know, what is space war? Because I think that's something that there's not a lot of good information out there about that. Unfortunately, most of our thinking of that comes from *Star Wars* and other Hollywood versions, which is not the reality, obviously.

In this case I'll echo General Hyten, who's the commander of the U.S.

Strategic Command, in that there is not going to be a war in space, there's going to be space as an extension of conflict on Earth. What does he mean by that? Well, as we mentioned earlier in this discussion, space capabilities provide things and services and data that are used for military operations on Earth. And so what we're going to see is a growing incentive for countries to disrupt, deny, destroy maybe even those space capabilities as part of conflicts on Earth.

I'll give you an example. In our report we talk about some of the open source reporting on Russian GPS jammers that have been deployed operationally to Eastern Ukraine. And they're being used to disrupt GPS and satellite communication services that are being used by the Ukrainians. That is an anti-satellite capability. It's not destroying the satellite, but it's disrupting the ability to use that space service in that military operation. Now, of course, you could also go further away and destroy the satellite.

As far as the legal context, just quickly I'll say the U.N. Charter holds in space, all right. The U.N. Charter prohibits use of force and aggression except when it's considered in self-defense. That is true on Earth as it is in space. And so the big question is how that applies to military activities in space, as well as the rest of the law of armed conflict.

There's actually a project underway, two projects actually, that I'm involved with to figure out basically a manual for how international law applies to militaries in space, one being run by McGill University in Canada, one being run by the University of Adelaide in Australia and University of Exeter in the UK. And those two projects are set to try and figure out what does self-defense mean in the case of a satellite? What is proportionality? What is protection of neutrals and third parties? All these questions that we've resolved in the air domain, in the maritime domain, in the land domain, or at least mostly have good ideas on, what do those mean in the space

context? And that is yet another big question that is still unanswered.

MR. O'HANLON: Okay, thanks. Frank?

MR. ROSE: Yeah, let me address the last point, and that's what's the legal regime for outer space? Now, Brian is absolutely correct, the U.N. Charter, well, at least from the U.S. perspective, the U.N. Charter applies to outer space. But there's also the Outer Space Treaty.

Now, the only thing the Outer Space Treaty says about militarization or weaponization is that you can't place nuclear weapons or other WMD in outer space. And there's also the Limited Test Ban Treaty of 1963, which prohibits nations from detonating nuclear weapons in outer space.

Now, there have been proposals, specifically by Russia and China, for a legally binding arms control regime in outer space. In 2008, the Russians and the Chinese introduced the Prevention of Placement of Weapons in Outer Space Treaty, known by the term PPWT. Now, the United States and most of our allies have had serious concerns about this treaty for three reasons.

One, it doesn't define what a weapon in outer space is. For example, during the 1980s, the Soviets made the case that the mechanical arm on the Space Shuttle, built by Canada I would note, was a weapon in outer space. Secondly, it is totally silent on terrestrial-based anti-satellite weapons, like the ones China tested in 2007 to destroy one of its satellites. And finally, it's not effectively verifiable. And even the Russians and the Chinese have agreed that with current technologies they could not verify the PPWT. In my view, the response is not a legally binding treaty for a variety of reasons.

Where I think the international community should focus its time and efforts is developing norms of behavior. And I think this is an area where we've seen a lot of progress. For example, we had the U.N. Debris Mitigation Guidelines back in 2007.

There was a group of government experts sponsored by the U.N., I served as the U.S. rep, which came up with a number of recommendations about how to enhance security and stability in outer space. And I think the United States has done some really good work with China, especially towards the end of the Obama administration, on the issue of destroying objects in outer space that create lots of debris.

So I would agree that we're in a fundamentally different space environment than we were 50 years ago. Because of the changes in the space environment, the Outer Space Treaty needs some help. And my recommendation to the Trump administration is that they devote some considerable effort in developing norms. It doesn't necessarily need to be a big multilateral enterprise. You can establish norms unilaterally, bilaterally, and multilaterally.

I think the key objective is find things that work. And because, as Deb said, you know, we are the leading space-faring nation, we can lead by example in many ways. Now, I think we also need to bring other powers on board and that is critical. And that's one of the reasons why, again, I think it's really important to engage Russia and China. And despite our differences with Russia and China -- and believe me, we've got a lot of differences -- we are able when we have mutual interests to get things done, especially on issues like debris generation in the United States.

MR. O'HANLON: Thank you, Frank. And Steve?

MR. JACQUES: Agree, agree, agree again. Indeed, if the rule comes out that the department needs to establish a new agency or department and whatnot, the team will get together, they will do their level best. They will go after -- put together a Space Force, a Space Corps, you name it. And you should all be assured that if something like that were to happen, our operation forces solvent. They will be just fine. They will continue to work closely, they will work cooperatively with one another as they are doing today.

And this all ties, again, to the need from an international standpoint that this all starts at the White House. The White House has got to stay proactive. The reliance that every country is increasingly becoming dependent upon outer space continues to go up higher. Not every country totally is aware I guess of some of the ramifications. So like nuclear, there should be a deterrence consideration of this whole things, norms of behavior that start at the top and flow down throughout the leadership structure to ensure that we are properly organized, trained, and equipped to make it happen.

MR. O'HANLON: I think we have time for many one last question from the very back of the room. I see actually two hands. We'll do it that way and then very brief final answers and concluding thoughts. The woman with the red hair and then the woman all the way back on the aisle, please.

MS. CUMMINGS: Hi, Laura Cummings with the National Academies. But I was wondering in relations to the Presidential Space Policy Directive 2 and 3, where they charge the Department of Commerce with creating space situational and space traffic management capabilities. I've heard Department of Commerce higher ups talk about the fact that Space Force could then be used for enforcement abilities for space traffic management and kind of the leverage behind the creation of that. And I was wondering if you could speak to that and whether or not you think that's necessary or that's something that could fall into the Air Force capabilities. Thanks.

MR. O'HANLON: Great, thank you. And then finally, last question.

MS. DiMASCIO: Hi, Jen DiMascio from *Aviation Week*. One of the major complaints I've heard from folks on the Hill about the Air Force is that, you know, space acquisitions, there are too many people involved in making decisions and that has slowed the process down. Do you agree with that complaint and what would be the way to address it?

MR. O'HANLON: Super. So we'll begin with Steve and give the Secretary the last word and any brief answers and any very brief concluding thoughts. We've got about four minutes left.

MR. JACQUES: I'll keep it short. Thank you. As far as the Commerce question, my personal view is I think it's a very good start. There will be a great amount of growth taking place over in Commerce to shepherd this, a great amount of interagency activity going on with the Department of Defense, and I think that's a healthy way to go.

Secondly, as far as the acquisition business is concerned, there are demonstrated activities in the past that have cycles of indefinite AOAs, for example, where non-decisions were made and whatnot. That's always something that can be freshened up on. And I continue to believe that a properly empowered leader will be making those kind of decisions earlier.

MR. O'HANLON: Thank you.

MR. ROSE: Let me just say I think transitioning the SSA, or Space Situational Awareness, mission from the Department of Defense to Commerce was the right move. However, I think Commerce will need a lot of support from DOD, NASA, and the State Department to ensure that that's done effectively.

Let me just conclude with a couple of remarks. One, there is no doubt we face some real challenges in the space domain, especially the Russian and Chinese ASAT developments. But I think it's important to note that this problem cannot be solved by military means alone. Diplomatic engagement with both our allies, but also potential adversaries with like Russia and China is going to be key. We're also going to need to develop norms of behavior to regulate this environment.

And finally, with regards to the internal DOD reorganization, some type of reorganization will eventually take place. A premium needs to be placed on ensuring that space is integrated with other strategic capabilities, especially cyber and nuclear.

MR. O'HANLON: Thank you.

MR. WEEDEN: So I wrote a whole dissertation on the space traffic management question, so I could on for hours, but I'll simply say I agree, it's a good move. It's not done yet, though, because it requires changes to the authorities that only Congress can make. The House has largely backed (inaudible) plan, but the Senate just came out with the Space Frontier Act, which did not back this change of authorities to the Commerce Department. So it's still TBD as to whether it's actually going to happen or not.

As far as on the DOD helping enforce that, I'm not quite sure what it meant by that. If they meant it in a regulatory role, currently the Air Force doesn't have a regulatory role to play. They just play an informational role in providing information of what's going on in space. If the intent was that the Space Force might have a regulatory function, well, that's more like the Coast Guard where in the peacetime the Coast Guard actually has law enforcement and safety functions to do in addition to their military role. I'm not sure where the Space Force is going to go or not, TBD.

They could have also meant enforcement in the terms of the way the U.S. Navy enforces lines of communication, open seas, and that's an enforcement by armed force, threat of armed force. That I would probably have some concerns about.

MR. O'HANLON: And Madam Secretary, you for the last word.

SECRETARY JAMES: And I will say this last point that Brian just made is a perfect example of a particular which will take enormous amount of time for a certain number of people across the interagency to debate for however long. That's one example of, and it's a small example, of a distraction. Now, again, I say all of these reorgs will ultimately settle out and they ultimately really can be worth it. But you have to say what is the question, you know, what is the issue you're trying to solve?

In this case, the proposed transfer of the space traffic management role

was very well coordinated. People were largely on board with it. And the idea of it was to take it off of the shoulders of the warfighter, so that they could focus on the warfighting mission. So that's an example of I'll say a modest reorg, which, as you heard, even a modest reorg has a million questions associated with it and it's not a done deal yet, but it's just one example. But at least it was specifically designed to solve a specific problem. I come back to the Space Force in and of itself won't solve any of the problems that different people have said that they need to take on.

And finally, the question about does the Space and Missile Command have too many people involved? Are they, as I said, the pillar speed and innovation? No, they have not been historically. They're slow and methodical, and with good reason. They're building, you know, billion-dollar systems. They want to get it right. They, like all other parts of government, are reacting to the period of time in the past when there were either scandals or disasters. And of course, what do we do when there are scandals or disasters? We tighten things up. And so there's been a gradual I'll say loosening that's been going on.

General Thompson was sent in, who does not come from the space community, but he was sent in specifically to be a change agent. He had been very successful in other areas in the Air Force as an acquisition leader and he was sent in to be a change agent. And I think he is making some changes, some important changes. I don't know if it involves reducing the number of people or not, but certainly he was sent in there to speed things up and to focus on speed and innovation.

MR. O'HANLON: Two very quick things from me before I ask you to join with me in thanking the panelists. First, I want to underscore something that Frank said. There's no military solution to all problems in space. I'm not even sure there's a combined military-diplomatic solution in the sense that the satellites will be inherently more vulnerable in the future than they've been in the past. We can try to defend them.

We can try to diversify, make them more redundant.

So I'm not suggesting we give up on the idea of using satellites, but I think any discussion needs to bear in mind that space is going to be a contested environment, and there are a lot of advantages to the side attacking when satellites travel a well-predictable trajectory. That's just going to be an inherent challenge I think for future space. It doesn't really weigh in for or against either argument about whether or not a Space Force is desirable, but it certainly will have to be integrated, all satellites and their operations, integrated with air-breathing platforms and other ways of gaining intelligence and communicating, because I think we're going to have to accept a greater degree of uncertainty in which of our satellites are available to us in any given moment. That's my own personal editorial view.

And secondly, as you thank the panel, please also thank my colleague, Ian Livingston, who's been with us at Brookings for more than a decade, helping with a lot of these sorts of things and my research and many other activities at Brookings. But please join me now in thanking the panel. (Applause)

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