

**General John W. "Jay" Raymond  
Chief of Space Operations, U.S. Space Force**

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**DWG:** -- other programs. Our biggest one is the Defense Writers Group, now 40 years old. And we do so thanks mainly to a grant from Carnegie Corporation of New York.

We're honored today to have General Jay Raymond, Chief of Space Operations of the United States Space Force as our guest to talk to us. General, thank you so much for being available today.

I'm going to start as I often do with kind of a softball question. How are things going? It must be about two years now, is it not? That --

**General Raymond:** No, sir. It's just over a year. We had our first birthday --

**DWG:** Right, you're entering your second year. I'm sorry.

**General Raymond:** Entering the second year.

**DWG:** And I gather you're just back from Ramstein, so in your answer could you tell us where you were and why and all about that. And could I also ask you in your answer to talk to us about what the advantage is, what the impact is of having a Space Force on the Joint Chiefs of Staff. And have you yet had contact with Biden administration officials like maybe the Secretary of Defense and gotten a sense of how they feel about Space Force and how that's going to work in the new administration. So fire when ready.

**General Raymond:** First of all, I'll try to weave all that into some opening comments just to prime the pump for questions. But David, as I said, I really do appreciate the opportunity to be here, and for all the defense writers that came up this morning, good morning and thanks for the opportunity to spend a little time with you.

As I think through our first year, it's clear that the United

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States is a spacefaring nation and it's clear that we also, we've long known that access to space and freedom to maneuver in space underpin all the instruments of our national power. We've also long understood that we are stronger as a nation with a stable and a secure space domain. And with the establishment of the Space Force we have elevated, and again as I mentioned, that was a year ago December, so December of '19, we elevated space to an independent service and over the past year the Space Force has stepped up to its elevated service level responsibilities. So let me just walk you through a few of the big kind of strategic pieces that will again touch on and answer some of the questions that you asked me to address as well.

First of all, we've elevated America's leadership in space further in global partnerships and alliances. So as you mentioned, I just came back from Ramstein, Germany. While I was there I had an opportunity to meet with Space Force Guardians that are assigned to that AOR.

The focus on this trip and the focus on our second year is integration. The first year we built the Space Force. This year we are focused on integrating that force. One of the key folks that we integrate with obviously are our allied partners.

The last time I sent to Europe was over a year ago, I think it was September-ish of 2019. We had just stood up U.S. Space Command, we were just about to stand up the Space Force, and I briefed the NATO Military Committee on Space. And shortly thereafter, not in response to my speech but shortly thereafter they declared space an operational domain and they just established a Space Office, if you will or Center, a Space Center in what they call NATO Air Command at Ramstein. So I had an opportunity to go visit that center and make sure we have the connections to that new center because there is strength in those partnerships.

What I said about elevating America's leadership, it's interesting to note that after we stood up the Space Force several countries have elevated their Space and their Department of Defense as well, including France, the UK, Japan, and there are others. There's a significant understanding of the importance of space and U.S. leadership in space is resonating across the globe.

The second strategic thing that we've done as an independent

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service, we've been a unifying force across the department and across the interagency. We've got great partnerships with the National Reconnaissance Office, with Civil, we've got a great partnership and signed an MOU with NASA for further cooperation, and increasingly so with commercial space.

A third big thing that I would highlight by having an independent service is we have contributed to enhancing all Joint Domain Command and Control. So JADC2. The Space Force is a critical part of that. We've built the data infrastructure that enables that Joint All Domain Command and Control. When you look at all domain, that includes Space and it provides us the ability to link sensors and shooters and give multiple dilemmas to competitors and potential adversaries.

Another thing that a service does, you develop your people and we have completely overhauled the force development of our people. From the time they get recruited, assessed, sworn into the service, go to first training, all the way through at the high end the War College. So every aspect of that development has been overhauled and purpose built to develop the Guardians that we need to operate in a contested domain.

I would also say we have furthered the conversation with our allied partners on norms of behavior. For the last year, and even before that, but this last year we have really sharpened the discussion on norms of behavior with our allied partners in Schriever Wargame, for example, or our Combined Space Operations Initiative that we have. And we do that furthering those norms of behavior.

I always get asked what do you want your successors to have technology wise? I answer that question first, I want my successors to have norms of behavior. Some rules of the road on how to operate in that domain. I think that's really important.

I think we've also broadened the industrial base. If you look at the work that we've been doing out at Space and Missile Systems Center, soon to be the Space Systems Command, we've made great strides in broadening that industrial base which I think will be a huge benefit for all.

As I said, as we elevated to a service level, the law, the National Defense Authorization Act when it was assigned establishing the Space Force said that one year upon signing of

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that law, one year later the Space Force Chief would be a member of the Joint Chiefs of Staff. I will tell you from day one the Chairman and the former Secretary of Defense treated me as a member of the Joint Chiefs but formally, officially on 20 December this year, I became an official member by statute. I think what that allows you to do is have a seat at the table and have a very strong voice and a proponent and advocate for space as it relates to joint warfighting constructs and joint readiness, joint force modernization. All those things now we have elevated the voice of space and it's proved to be valuable even in this first year.

I think I have hit all of your questions as I weaved through that.

**DWG:** Except the Biden administration. How do they feel about space?

**General Raymond:** I have not had an opportunity to talk to President Biden about space. I have been in meetings with the Secretary of Defense along with the rest of the department where he's laid out his priorities and I look forward to having further conversations with him about space. But I have not had specific dialogues at this time.

**DWG:** Let's go to members now, their questions. As I've been doing since we've been on a COVID-related virtual format, I'm basically going to call on people in the order in which they signed up for the event. There has to be some order, so that's what I'm doing.

Sandra Irwin of Space News, if you're on. Sandra, do you have a question? You were first to sign up.

**DWG:** Good morning General Raymond. Thank you for taking my question.

Can you talk a little bit about what your plans are this coming year with joint initiatives with civil space, NASA specifically? You and Jim Bridenstine signed an agreement last year and he was very supportive. We still don't know who the new NASA leadership is going to be, but have you had any conversations? And what are your expectations for dual use projects, cooperation and things like that?

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**General Raymond:** We have a very close partnership with NASA. I think it's most visible at our launch ranges where we support NASA launches by operating the ranges. But we have a very close relationship.

We also here over the last year have really worked hard on some training opportunities. We have sent Space Force personnel to the headquarters at NASA to capitalize on some of the training courses that they have that we felt would be valuable in the domain that we operate in today. In fact some of their training tools that were developed for space flight and for success in their mission would be very valuable to our Guardians in the Space Force. We actually partner with them and they built a training tool, they modified a training tool that they had for our purposes. We've already started deploying that to operational centers for our Guardians to benefit.

The other area that we're working on is on norms of behavior.

First of all let me say one of the other areas we're working on is on partnerships. NASA has very strong partnerships in their programs and I'll tell you, the thing that I'm probably most proud of this first year of the Space Force is how we have elevated our game in international partnerships. And along with that international partnerships, as I said in the opening, we have worked very hard with our international partners to further the development of norms of behavior. And if you look at what NASA did, they have something called the Artemis Accords where they're looking for their partners in the Artemis program to sign up to norms, if you will. We think there's some leveraging of the work that they're doing with the work that we're doing as well.

So those are kind of the areas. We will continue to partner where it's operationally critical, like in launch. We'll continue to assess ways where we can enhance our training together. We'll continue to work on the international partnerships and leveraging the partners of both and we'll continue to work on norms of behavior which are so important to both of us.

Then you might have seen last December, just a month or so ago we also, an Air Force astronaut who is the commander of the SpaceX crew that just went up to space a few months ago, we transferred him into the Space Force. So just like all other services, we

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will have Space Force astronauts that will be assigned to NASA.

**DWG:** Do you agree with some of the concerns that military and civilians state that the lines are getting blurred between the two and that there should be more discussion on that? What is your assessment?

**General Raymond:** I'm not concerned with that at all. We're not NASA and they're not the Space Force, but we operate in the same domain and we think there are things that we can do to save the taxpayer dollars and to, again, make the domain safer for all to operate in. Again, I'm not in the civil space business and NASA is not in the military space business.

**DWG:** Meghann Myers, Military Times? I see you're on, do you have a question?

**DWG:** I do. I have a manpower question actually.

General Raymond, I wanted to ask what Space Force's current end strength is and what the recruiting goals are this year in terms of getting people in off the street but also transferring them from the other services. I see the Army has started doing some outreach about getting soldiers to come into the Space Force as well.

**General Raymond:** First let me just say we have, today - over the course of the last six months or so we have gone through and selected those that are going to come into the Space Force. On the active duty side that's approximately 6400 active duty airmen that are going to transfer into the Space Force. And we have already, over the least few months, transferred I would say approximately 2400 in. 1 February another batch came in. So every single day, in fact, when I was in Ramstein I met two Guardians, two specialists who had just come in the labor pool. So the numbers are going up each and every day.

But by the spring of this year we'll have about 6400 active duty Guardians in the force. We also have approximately 10,000 civilians that are assigned to the force. When the National Defense Authorization Act was signed it said the civilians will remain in the Air Force because they fall under the Department of the Air Force, but they are assigned to us.

We have built a human capital strategy which I'm really proud of

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and I think this is going to be an extremely forward-leaning tool to make sure that we have the human capital, both military and civilians, that we need.

Part of that strategy is interviewing every person that's going to come into the Space Force. And so last year, as an example, last year coming out of the Air Force Academy - two years ago coming out of the Air Force Academy we had 30 cadets that came to Space. Last year, the first year that the Space Force was in existence we had 86. This year we have 116 that are coming into the Space Force. Then we just completed doing all the interviews for all the cadets that are juniors this year and have - every general officer in the Space Force interviewed a selection of cadets and then made selections on people coming in. I personally got to interview ten cadets as well. I will tell you, the excitement is off the charts. People are really excited to come in. And we have more people applying - and this is one example on the Air Force Academy, we have more people applying than we have slots for. So we're going to be very, very selective and get the talent that we need to build this service, again, as a light, lean, innovative, bold service. And I couldn't be happier with where we are.

As you know, we also brought in, we've got Basic military trainees that have already graduated and more are in school as we speak. That pipeline is open. We have had some officers come in from ROTC and we've had three officers come in from OTS. So all of the assessment sources, both on the officer side and enlisted side, are up and running and delivering Guardians for our force.

**DWG:** As a follow-up, how many people are you looking to bring in from the other branches who are already serving but already work in like a space MOS?

**General Raymond:** Everybody that comes in, you can't order somebody to come in the Space Force. It's all voluntary. This first year we're working with the Army and the Navy to bring in, I'll get you the exact number but I think it's 34. Let me confirm that with you but I think it's 34 this first year and that's in the works. Then the following year that number goes up to several hundred. Again, I will follow up with you with the exact numbers but we're working that very closely with both the Army and the Navy.

**DWG:** Air Force Magazine, Rachel Cohen. Are you on and do you

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have a question?

**DWG:** I am here. Thanks for doing this.

Something that I don't think we've really gotten into over the last however many months of you doing these, I'm curious where you see the deployed part of Space Force going - terrestrially, not on the moon. Obviously there's units that are spread around the world and the bulk of Space Force does things from CONUS. But I'm curious what the people around the world are able to do and kind of what capability you would like them to have that they don't have right now. How do you see that evolving?

**General Raymond:** We have, as you said, we have - the vast majority of what we do is done from a non-deployed location. It's done either in CONUS or at radar sites or optical telescopes around the world. So for example we have airmen that are assigned to Thule, Greenland operating a radar site. We have Guardians assigned to Maui, on top of Mt. Haleakala who operate an optical telescope. We have Guardians at Diego Garcia.

Because Space is global, we have folks that are assigned all over the world to be able to do the missions that are assigned to the Space Force.

There are also capabilities that we do that are deployed, and those are smaller in number. But I would say those will continue and if anything, will grow.

I would also say we also deploy Guardians to work in Air Operation Centers around the globe. I was just in Ramstein. I visited the Air Operation Center and met Guardians that are integrating into that Air Operation Center to provide space capabilities to eh theater.

We've worked that very hard, largely since Desert Storm. As you know, it's the 30 year anniversary of Desert Storm. Desert Storm has been called by many that it's the first space war. I'd push back on that a little bit and say the Cold War was the first space war. But it's clearly the war where we took space for the first time and integrated that into theater operations. We've continued to do that. I think the establishment of the Space Force actually provides us an opportunity to do that even stronger than what we've done in the past. Again, that's one of those integrations of year two.

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Again, a mixture of folks either assigned to a capability that's global, that deploy with capabilities to bring Space into theater, or are assigned in Operation Centers to make sure that we have integrated Space throughout joint operations.

**DWG:** For my follow-up, I wanted to follow up on what you were saying about your trip to Europe.

What do you see as the challenges that remain for interoperability between U.S. assets and other countries' assets? What is in the works to get those to play together?

**General Raymond:** I think one of the big hurdles that we have, and I've talked about this in the past as well, is classification. I think we remain overly classified. We've made some progress. I'm putting a lot of emphasis on this issue. But I do think over-classification is an area that we've got to address. I think that will help.

I think part of the JADC2 effort of having open standards and open interfaces and being able to link sensors and shooters together, that has to be borne with our allied partners in mind as well, to be able to have those machine to machine interfaces, and we're working that. One of the things that we did with the Space Force, we actually stood up a coalition program office, if you will, to get after the command and control capabilities that we need for space which are inherently global.

So those I would say are kind of two big areas that we've been focusing on. I'll tell you, the partnerships that we have, I couldn't be more proud of what we've done. It wasn't many years ago when partnerships in national security and space were not that robust and like I said before, we really didn't need to have it. Space was a benign domain, it was peaceful, it wasn't a threat, you didn't have to worry about it. That's clearly not the case today. And I'll tell you, the partnerships that we have have transformed largely from one-way data sharing agreements where we would share data with our international partners; to now two-way partnerships where there's mutual benefit. And it's way more than just data sharing. We train together, we operate together, we wargame together, we exercise together, we man operational centers together. And for the first time we're developing capabilities together. I think that's going to help us as well.

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**DWG:** Michael Gordon, Wall Street Journal.

**DWG:** I'm on.

Sir, now that New START has been extended, the incoming administration has talked about 21<sup>st</sup> century arms control and avoiding an arms race with China and Russia. And included in that are the familiar buzzwords about transparency, stability and predictability.

My question is, what specific ideas do you have about how to avoid confrontation in space with China and Russia? What do you think the new administration might pursue usefully in this area now that it's bought some time with the New START extension? What should it do, what should it not do?

Lastly, do you plan on taking Jen Psaki up on her invitation to discuss the work of the Space Force in the White House briefing room? I don't know if she tendered that to you directly, but she tweeted it to the universe.

**General Raymond:** Thanks for a very thoughtful question.

As it relates to space, our first step, as I mentioned up front, is norms of behavior. And I think it actually goes beyond just norms of behavior but it's kind of maturing the warfighting domain of space. And things that are already in existence in other domains don't exist yet in space. Norms of behavior are one of those. We have made some significant progress with our partners on how to do that.

One of the things that we do is we demonstrate norms of behavior by how we operate each and every day. So we are operating in a very transparent way and operating and demonstrating the way we think responsible nations should operate.

I think there's a deterrence part of this as well. People ask me a lot about space deterrence. I say there's no such thing as space deterrence, it's just deterrence. Yes, we want to deter - and our primary role is to deter conflict from either beginning or extending into space. The reason why we do that is not just about space. We want to be able to deter that so then it will deter conflict from spilling over into other domains. So it's the same calculus, denying benefits and imposing cost.

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That's how I'd answer the first question. Norms of behavior. Responsible, professional behavior. And just maturing this warfighting domain of space. Being transparent. I think we're the most transparent in the world. We share data broadly with everybody. We act as the space traffic control for the world. And on deterrence I think space has a role in amplifying the deterrence message.

On the question on the tweet from the press secretary, I'm very proud of the Guardians in the Space Force. I see the value of this force each and every day and I'm happy to talk to anybody about the great work that they're doing and I would welcome the opportunity.

**DWG:** Lauren Williams of FCW. Are you on and do you have a question?

**DWG:** I do. Thank you for doing this, sir.

I have a cyber personnel and priorities question. I'm interested in where the Space Force is in terms of bringing on the cyber warrior [set]. It was announced that [inaudible] to do last year and what the key cyber priorities are now in the wake of the SolarWinds hack.

**General Raymond:** First of all, let me say that if you look at the Space Force, the makeup of the Space Force, the people that make up the Space Force fall into the following categories. One are engineers, acquisition, intelligence, space operators, some software coders, and cyber. So all the other career fields, the support group of like security forces and medical and lawyers and logisticians and civil engineers, they remain in the Air Force and they will be assigned to support us but they are not on the books of the Space Force.

So of those - I mentioned earlier the 6400 folks that we have sought to come into the Space Force, a portion of those are cyber professionals. I don't have the exact number off the top of my head but we can get that to you, on how many we've selected. Those folks started transitioning into the Space Force the first of February, just a couple of days ago. And we're excited to have them on our team.

There's a spectrum of threats that are out there. Everything

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from reversible jamming of satellites and GPS satellites, communication satellites, GPS satellites. There's lasers that can damage, blind satellites. There's on-orbit activities like I talked about in the past with the Russian satellite that maneuvered in close proximity to one of our satellites, a weapon system designed to kinetically destroy U.S. satellites in low earth orbit. There's direct ascent missiles that can launch from the ground and destroy satellites in low earth orbit. Both Russia and China have those. And there's cyber threats.

So why it's so important for us to have those cyber professionals on the Space Force team, organic to our team, is that they will be part of our crew force, they'll understand the cyber terrain of space, and will help us protect this critical domain from that threat.

**DWG:** Sean Naylor of Yahoo News. Are you there and do you have a question?

How about Courtney Albon of Inside Defense?

**DWG:** Yes. General Raymond, back in November General J.C. Thompson was speaking at the Schriever Base Speakers Forum and he talked about how we would see in the FY22 budget kind of a reflection of DoD putting space as a top strategic focus and that we would see an increase in the Space Force budget across the next five years.

I'm curious, now that we have a new administration evaluating that budget if you expect to see that growth sustained as they reassess the request and also if you can talk a little bit about what the Space Force's top budget priorities are right now.

**General Raymond:** I can't speculate. I haven't been in conversations yet on the budget with the new administration so I won't speculate on what they may or may not do.

I think it's clear that space is really important to our national security. I think you've seen over the last few years an increasing budget on space. But we have to compete with everybody else for dollars in the department. If we compete well we'll get the funding that we need and if there's higher priorities we won't, but I think space is important to our nation, but I won't speculate on a budget process that hasn't played out yet, and in fact the DoD budget hasn't even been

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submitted.

I can tell you priority wise, generically, we want to make sure that our nation, the average American and our warfighters have the capabilities that they need to fuel their way of life and fuel our way of war. We want to make sure that access to space is assured and I will tell you today in the strategic environment that we face that is not a given. We need to be able to protect and defend those capabilities. Then we're also looking at the development of technology that allows smaller satellites to be more operationally relevant. Are there other missions that should go to space that make sense to do so from a mission perspective and a cost perspective?

**General Raymond:** As a follow-up, you've talked before about the process of working with the other services to determine what capabilities would shift into the Space Force and we've reached a pretty good agreement on that. Is the plan that we would see that, the result of that, as part of the FY22 request? I understand you're saying that's not kind of set in stone yet but at least in terms of planning. Would we see those capabilities shifted in the FY22 budget?

**General Raymond:** I think that would be more likely to be in FY23. But as I mentioned to you, we work very closely with the Army and the Navy. We have come up to a vast agreement on what should transfer over. As we've talked about before, we don't want to break the Air Force. We don't want to break the Army. We don't want to break the Navy as we stand up the Space Force. We actually want to enhance our warfighting capability. We think there are things that will transfer over that will do just that, and there are other things that will remain in those services to further the maritime mission or the ground mission.

On the budget part of that, those decisions are being finalized now. The FY22 budget has largely been baked, so I would say that it will be addressed in the next budget.

**DWG:** Ton Capaccio of Bloomberg. Are you on and do you have a question?

How about Dmitry Kirsanov of TASS?

**DWG:** Good morning, everyone. General, thank you so much for doing this.

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I wanted to ask you to talk a little more about potential engagement with the Russians and the Chinese maybe. The new NSA, Jake Sullivan, was speaking on Friday about how the Biden administration would like to make a strategic stability [inaudible] a new important part of discussions with the Russians. So I wanted to ask you to talk about this, if space will become a part of the discussion on strategic stability.

And personally, are you arguing for creating an international mechanism adopting a treaty maybe for non-deployment of weapons in space? What is your personal opinion?

**General Raymond:** Let me just say, I do think, and I think one of the things that the elevation of space into an independent service, again, in helping, strengthening our voice and by discussing very publicly about what Russia placed in orbit next to one of our satellites, allowed us then to have conversations with the Russians for the first time in a long time. So I think those were good conversations and I have not, I don't want to characterize this, but I've talked to the administration about this, but I do think I would like to see further discussions with both Russia and China on norms of behavior in space.

**DWG:** And non-deployment of weapons What do you personally think about that? Would you like to see anything like that or you'd rather not as a senior military leader?

**General Raymond:** On norms of behavior and safe professional behavior, and I would like to see others follow those rules like us and our close partners are doing.

**DWG:** Nathan Stroud of C4ISR.net. Do you have a question?

**DWG:** I do, thanks.

My question is about tactical geo intelligence, special imagery used for beyond line of sight targeting. The Space Development Agency is sort of building that capability into their current constellation. The Army seems very desperate to have that capability. How much is that a capability that you see as the Space Force's responsibility moving forward, and how are you approaching building that?

**General Raymond:** Historically, that mission has not been part of

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the Air Force, when space was in the Air Force. That's largely been more on the intelligence community side. We have had some, we had operational responsive space satellite, trying to do that on smaller scales. I do think as technology has allowed for smaller satellites to be more operationally relevant and we can do so at a price point that is cheaper, that there is a role for operational level tactical satellites as you described and that the Space Force would have a role in that. That's something that we're thinking through as we speak. I've got a group of folks doing some work on what that design might look like. Again, it's early in the study efforts, if you will, and whatever we do we'll make sure that we do in close partnership with our intelligence partners because what we don't want to do is duplicate efforts. We want to save dollars and reduce taxpayer dollars, not duplicate.

**DWG:** Frank Wolf, Defense Daily. Do you have a question?

**DWG:** Good morning, General. I appreciate you taking the question,.

I just wondered, there has been some criticism, you probably know, in terms of the Space Force just basically making contractors, just making things easier for contractors to sell space systems to the government. I'm just wondering. There has been concern, as you know, about the accountability going forward in terms of a portfolio approach toward buying space systems and whether there will be sufficient congressional oversight if the Space Force can basically just shift block funds from one system to another without any oversight. So I wondered if you could address those concerns.

**General Raymond:** I want to make sure I got your question right, so let me take a stab at answering it and then if I misinterpreted what you're saying, correct me.

I couldn't be more proud of the folks at the Space and Missile Systems Center for how they've expanded the industrial base, working with more non-traditional partners along with our traditional partners. I think that expanded Defense Industrial Base is a huge national advantage that's going to provide us an advantage. So I think we've made lots of great progress there.

I think what you might be talking about are some of the things that we have put in an alternate acquisition report that allowed

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for more flexibility to be able to do what we think we need to do, to move at speed in acquiring capabilities.

I think one of the things we have as our advantage is our size and although every single dollar is precious taxpayer dollars, the dollars that we're talking about in space compared to the overall defense budget are relatively small, although every dollar's important.

I really believe because of the way we're sized and because of the dollars that we're talking about, we actually have an ability to provide Congress even more oversight and that's what I'm committed to doing. I'm not looking to reduce at all congressional responsibility for oversight. In fact I'm looking forward to giving them even more strengthened ways to do so, and that's what we'll explore with them in the department in the months ahead.

**DWG:** There was a RAND report released this month that notes the limited success of past efforts to forge the norms of behavior that you've talked about. I'm sure you know the UN General Assembly Resolution that was adopted on December 7<sup>th</sup>, it was sponsored by the United Kingdom and advocated by the United States, that encourages information sharing about space policies and space activities, that those nations find responsible, irresponsible or threatening and any ideas on norms of behavior.

So I'm just wondering how you think this might help. It's my understanding that there are no "prohibited" systems per se in this. That it's more of, again, behavior oriented. So I'm just wondering your thoughts on that, whether we should prevent things like the Russian, the 2543, the co-orbital vehicle or direct descent ASAT or whether you think this behavior regime is better and how you verify that.

**General Raymond:** I would just say, as I mentioned up front, one of the things we've been working very hard on are these norms of behavior. That's been our focus area and we have done this collaboratively with our international partners. Specifically the 5 Eyes partners plus France, Germany and Japan. We've wargamed this, we've had multiple discussions on this with our international partners.

I think they would agree we've made some good progress. I think the dialogues have been good and what the UK has put forward I'm

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support of. It's really been informed together as we've worked this together over the last couple of years.

**DWG:** Amanda Macias of CNBC? Do you have a question?

**DWG:** I do. Good morning, General Raymond.

I think it would be safe to assume that you pay attention what private sector companies are doing, even if it's not specifically military related. I wanted to get your reaction to SpaceX and the first civilian mission. Are you excited about that? And just as a fun aside.

**General Raymond:** There's a ton of excitement across America on space, in all sectors. Whether it's the national security sector which I'm focusing on with the establishment of the Space Force and U.S. Space Command. I've talked about people knocking on our door, wanting to come into the Space Force in numbers greater than what we have slots to fill. I've talked in the past about how universities are seeing more students apply for space STEM degrees which I think is going to be great for our nation. If you look at what's going on in the civil sector with the launch of U.S. astronauts and this last launch, a Japanese astronaut from U.S. soil on a commercial launch vehicle. There's a ton of excitement there. Then if you look at commercial industry and you look at what's going on across commercial industry and the innovations that are happening both on launch vehicles, on operational concepts like autonomous launch. If you look at what's going on in commercial satellite programs. I'm excited about it all. I think it's going to provide America - as I said up front in my opening comments, the U.S. has long understood that we are stronger with a secure and stable space domain and all of those sectors play into that. So I'm excited about all of it, what we're doing here in national security, what's going on in commercial industry that we can leverage to our advantage, and then our partners in civil space, again, that we partner with very, very closely.

**DWG:** Ellen Mitchell, I'm not sure if you're on or not. If you are you must be on the telephone. Ellen Mitchell of The Hill. Are you on?

Let's go to [Riota Day] of [Gigi] Press.

**DWG:** Good morning. Thank you for doing this.

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My question is Japan is considering to join the American Satellite Constellation Initiative for missile defense. How important is it for the Space Force to cooperate with Japan and other allies in this area? What kind of cooperation do you envision, or what kind of contribution do you expect from Japan on this [inaudible]?

**General Raymond:** I had the opportunity to be stationed in Japan back in 2011 and I was there during Operation Tomodachi and was privileged to do a small part in being able to support your country in the recovery from that terrible earthquake and tsunami and nuclear reactor disaster. And as a space operator assigned, stationed overseas in Japan I got to see really for the first time the strength of partnerships and I saw the value of those partnerships as we did Operation Tomodachi.

When I came back home and continued to have jobs with increasing levels of responsibility in the space domain, working in the space mission area, I realized that we needed those partnerships in space as well. So that's been one of my key driving factors here over the last several years, to build these partnerships.

With Japan specifically, over the last year, and in fact we just signed the MOU with Japan just a few months ago where we are going to put a hosted payload on a Japanese satellite called the QZSS satellite to provide space situational awareness, space domain awareness capability.

Japan has also stood up a space unit and we look forward to linking into that space unit. We have opened up more courses to train our international partners in kind of Space 101 and the domain awareness areas and further training. We have a Japanese, a member of the Japanese Air Self Defense Force that is assigned out at Vandenberg Base with the MultiSpace Collaboration Cell as part of the Combined Force Space Component Command.

So we have invited Japan and they accepted and they've been participating in our Schriever Wargame series.

Like in all other domains, partnerships are important and we are working with Japan and others, but to answer your question specifically the areas that we're focusing on, partnerships with Japan. But we're doing that broadly with partnerships around the globe.

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**DWG:** Have you actually started discussing with your Japanese counterparts about how Japan can join the American Satellite Constellation?

**General Raymond:** One of the things we are doing, one of the critical pieces of work that Space Force is doing in this year is to develop a force design for space. That's service business. That's what services do in the [NSA]. We build the force design, if you will, for the forces that we're responsible for.

We're doing that in space, and what I've told our team is to build that force design with coalition partners in mind from the beginning.

So once we get that force design built, where there are areas to partner with international partners we would welcome that opportunity.

**DWG:** Oriana Pawlyk of Military.com.

**DWG:** Thank you so much.

I know you've just been in existence for a year and there have been a lot of milestones but there have been a few articles of late, especially with the new administration coming in, about does the Space Force have a PR problem? And I'm curious from where you sit, do you believe that the Space Force does have a PR problem? And how do you take it to have a conversation about America's Space Force versus the moniker of Trump Space Force, because that's what most people assume. Thank you.

**General Raymond:** I think we in the space business have had a saying for the longest time that space doesn't have a mother. You can't reach out and hug a satellite. You can't see it, you can't touch it. It's hard to have that connection. It's 22,300 nautical miles above your head. It's invisible largely. But there is a very, very, very strong connection between those capabilities and our way of life. It's hard to understand.

I tell a story that my own mother called me a couple of months ago after watching a television segment about GPS and she said hey, Jay, do you know that the Air Force - it talked about Air Force. The Air Force and Space Force does things with GPS? I'm like mom, that's kind of what I do. So it's just hard to

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understand.

I think it's also hard to understand because it has been severely classified what the threats are out there. I think we've been doing a lot of work to be able to talk about those threats and to talk about the value of space to every single American. We will obviously have to continue to do that.

I think our communication strategy, though, internal to the force, has been spectacular, and I talk about the excitement in the folks that are wanting to join and the folks that are in the service, how excited they are for the work that they're doing. I think we're communicating really well with our allied partners and if you look at the partnerships that we've had and if you look at how space has been elevated across the globe I think that communication is working really well.

I think our competitors, our adversaries are also, we're communicating very well with them as well, and being very clear on what we think is safe and professional behavior in the domain. I think we're communicating very well with our commercial industry partners and in fact are doing so as I talked about with an increase in the defense industrial base. We've made strides in being able to, the department has put some policies in place to allow them access to more classified materials, allow them to be more effective in their work.

So I really believe we are communicating really well in a number of areas. But I think there still is a challenge. It's hard to understand that connection to space. We'll keep working at it. I appreciate you and all the others that are up here today giving us this opportunity to communicate.

**DWG:** Robert Ackerman of Signal Magazine. Do you have a question?

**DWG:** I do. Good morning, General. Thank you for agreeing to meet with us.

Earlier you mentioned the work you're doing with the JADC2. The other services are also doing work on JADC2 but they're taking different courses, different tracks to do what they feel they need to do to bring it together. Many of them have C2 assets that are space-based. How difficult is it for you to work with them or perhaps how well are you working with them given that

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they're all pursuing slightly different tracks on this?

**General Raymond:** I think the J in JADC2 is Joint, and this is a joint initiative. This isn't any one service doing anything. This is joint business. So the Joint Staff is really the lead of that. We work very closely. In fact you would expect we would work very closely because we were in the Air Force to begin with before we became independent, but the work that we are doing with the Air Force's ABMS system, what the Space Force provided was the data infrastructure to be able to do that. That's the foundation for JADC2 and that's the foundation for success in space.

If you look at the challenges that we face in the space domain, it's big data challenges. There's lots of things up there going very, very fast and you have to be able to harness that data, analyze that data, and spit out an answer to be able to make a decision at speed.

So that's been our focus on the Space Force side for the first year and that has been adopted in the Air Force's ABMS program. Again, Joint All Domain Command and Control has Joint as the term, the letter J in it for a reason. It's a joint capability that we're working very closely across all the services and the Joint Staff to be able to deliver.

I've got time for one more question.

**DWG:** Let's have that last question then sir from Jeff Seldin of Voice of America.

**DWG:** Thank you very much. I really appreciate the opportunity to listen to all this.

I'm wondering, New START Came up a little bit earlier and the concerns about what's going on in space, but I think in a lot of ways sometimes the battle in space or the challenges in space are still somewhat nebulous. What are the threats that you're seeing? How would you describe them from the American public from adversaries like Russia, like China, and how have they changed with all the advancements in technology that keep on coming? How have they changed since everything's been stood up and what are you going to be telling the President about why he needs to continue to be more concerned about this?

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**General Raymond:** As I mentioned up front, there's a spectrum of threats and what I always say is the scope, scale and complexity of those threats are real today and they're concerning and it is clear that our adversaries are developing counter-space capabilities to keep us from accessing the space capabilities that are so vital to us as a nation.

So I'll give you a few specifics.

First of all we've talked about reversible jamming of communication satellites and GPS satellites. There's also laser, directed energy threats. So China has multiple ground-based laser systems of varying power levels that could blind or damage satellites. Russia also has several ground-based lasers that could jam or blind satellites.

There are satellites on orbit that are concerning. I've talked publicly about the Russian nesting doll satellite, as I describe it. You've all see the dolls inside of a doll inside of a doll inside of a doll. There was a satellite that was launched that opens up and releases another satellite, that can open and release a projectile. Russia launched that satellite in close proximity to one of our satellites.

China also has a satellite on orbit that has a robotic arm that is technology that in the future could be used to go grapple one of our satellite.

I've talked, and we've seen very publicly China in 2007 launch a missile from the ground and destroy a satellite into 3,000 pieces of debris that we're still tracking today, that debris.

Russia in the spring of 2020 conducted a test of a mobile ASAT system capable of destroying satellites in low earth orbit as well.

So the threats range from non-kinetic which are more jamming, through kinetic. And that full spectrum is something that is concerning to us. That full spectrum is why it is important that we have elevated space. Because as I said back at the beginning, space is critical to our nation. It underpins all of our instruments of national power. This isn't space for space's sake, this is space for our nation and for our partners around the globe.

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Again, I couldn't be more proud of the force that I'm privileged to lead. They're already delivering advantage for our country and I really appreciate the opportunity to spend time with each of you today.

There was a couple that I owe answers back to you. Katy Hague is our public affairs here She will reach out and get you specific numbers.

But again, David, I really appreciate the opportunity and I sure hope we can do this again. I would like to continue to communicate as much as I can to give everybody an understanding of just how important space is to their way of life. Thanks again.

**DWG:** Thank you very much, General Jay Raymond. You have a very good public affairs team. Katy is wonderful. So I think we can arrange that. I hope so.

Thanks again.

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