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**BY THE EXECUTIVE SECRETARY OF THE NATIONAL SPACE COUNCIL**

***Comments on the Creation  
of a  
United States Space Force***

**WRITTEN STATEMENT OF**

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Mr. Vice President and Members of the Space Council:

I am honored to have been asked to provide my thoughts and observations on this very timely and important topic. What follows are my own personal views on these critical issues and not those of the organizations of my current or past affiliations.

The creation of a dedicated United States Space Force is no doubt an emotional and divisive issue that will have a complex solution at its conclusion. Over the last two decades, I have been fortunate to have been part of America's space program and privileged to lead corporate organizations that have participated in over 300 space missions. This experience combined with the time I have spent in government, military, industry associations and now academia has provided me with insights into the various factors that need to be carefully weighed as this discussion progresses. I will primarily focus my views on the "why" of this decision, rather than "how" it might be executed.

The United States is fortunate to have a storied space history; the most advanced space technologies; the largest space budgets in the world; a commercial and industrial space sector that is innovating and investing its own resources; strong leadership in the government and private sector; universities and laboratories leading primary research; and, above all, passionate talented people in and out of uniform who have taken these resources and created a space infrastructure that has no global equal.

As it was famously stated almost six decades ago, it is in our DNA to do things, not because they are easy, but because they are hard. I have learned first-hand many times during my career that being at the forefront of space leadership is hard. Building a business from a start-up to become a significant player in the space industry is hard. Testing new ideas and surviving through failure is hard.

But in my view, perhaps the hardest thing to do is to have the courage to be self-critical. We must be completely honest in reviewing past decisions made, reviewing decisions needing to be made and in reviewing who and what we really are. We must have the strength to put aside the pride of authorship, ownership or self-interest when required and change when change is necessary.

So to that end, I would like to outline my views of the realities of our current situation.

- 1) The United States is currently at the forefront of space development. However, even with all our advantages, there is no guarantee that we will remain in front. Our adversaries are substantially increasing their space resources and commitment on all levels and have been doing so for a considerable period of time. One can dismiss their efforts as minor compared to our position of perceived strength but to do so is shortsighted and leaves us vulnerable. In my view, the United States cannot simply ignore the depth and rate of this change and must use significant efforts to continue to accelerate our response. Undertaking the extraordinary effort of consolidating our national defense space activities under a common banner is one way to send a very clear message to the world.
- 2) We have accomplished great things in space as a country. When one dissects our greatest accomplishments, there are several common elements. We clearly achieve the best results when: we are unified as a nation; when we remain focused on the primary problem; when we are passionate in

our response; when we establish a competitive environment for solutions; and when we apply innovation not just to technology, but also to our thinking. A few key examples of this are as follows:

- a. We responded to the dawn of flight by encouraging the development of a new aviation industry and not by directing government ownership of aviation as did most other nations. This led to the U.S. to having aviation as one of the top drivers of our economy over the last 100 years.
  - b. The attack on Pearl Harbor and the lessons learned from World War II sent a clear message that airpower would be one of the most important drivers of our Nation's defense. This led to the separation of the U.S. Army Air Corps from the U.S. Army and to the creation of the U.S. Air Force as a stand-alone service in 1947.
  - c. We responded to Sputnik and to the realization of our losing ground in the space race by unifying ourselves around a complete transformation of our space efforts. This led not only to our celebrated journey to the Moon but, also as importantly, to the creation of our space industrial base, a strong NASA, and a global recognition of our technical prowess. As a result, we minimized and demoralized our external competition.
  - d. In recent times, we responded to the shifting of ways and means of space by developing a new commercial space sector focusing on public-private partnerships. Despite some initial opposition, this approach has allowed dozens of American companies and hundreds of new technologies to flourish. It has also created competition which is pushing the boundaries of what is possible in the United States.
- 3) There is little controversy in saying that the reliance on space assets is growing exponentially in all ways. Its increasing importance to our military and our country in virtually every aspect cannot be denied. Moreover there is no reason to believe that this growth and importance will diminish and every reason to believe that it will continue to expand. If this is believed, then it seems logical that the United States consolidate its military space efforts to obtain the strongest and most efficient impact from the investment we are making. Space assets and personnel currently exist in all branches of the military. Having space as a co-equal service will allow for it to be managed collectively and effectively to address the most significant national priorities.
- 4) At times, postponing a decision can lead to a more informed position. In looking at this choice, it is difficult to say that this challenge will in any material way become easier, cheaper, less complex or less important. At this crossroad, the only real choice is to commit and move forward down one road or the other. Do or don't do. There is little to gain and potentially much to lose from any middle position or a partial choice.
- 5) I have learned that in virtually any decision one can make an argument for the status-quo depending on what time period is being used. The issue here is not what is right for the next year or the next decade but for the remainder of the century. We are now 70+ years since the establishment of the U.S. Air Force. Does anyone truly question that decision now as was done then? Those of us who work in the space sector realize very quickly that we are all just interim custodians of and contributors to the future. What we do now and how we do it will reverberate well into the future.

- 6) There have been many valid, thoughtful and well-informed positions put forward as to why a Space Force may not be a good idea. There is also little doubt that there has been significant past space success from our current structure to get where we are today. We owe a debt of gratitude to all those who made sacrifices to get us to this position. We also owe it to them to take what they have given us and use it wisely for the future. Our job as leaders is to hear all points of view and to try to have the wisdom and the judgment to accommodate the full universe of thoughts on the path to an informed, balanced and well thought out decision.
- 7) If done, this needs to be not simply a “re-org” but a fundamental real shift and change in how we develop and operate in military space. We must commit long term to the change as a permanent part of our national defense infrastructure.
- 8) There is a tendency for people in a technological field such as space to look at the hardware and not what is behind it. We are only as good as the people we have on our front lines, and it is important that we keep them engaged with a strong consistent career path. By having a dedicated Space Force we create more opportunities for high-performers to establish a long-term career path thus increasing the likelihood that they will be retained in the Service. This will also allow their skills to be applied to a wider set of problems than can be found in any single service. Finally, we will be able attract the best and the brightest in the future to support this critical endeavor if they see a strong commitment being made by our government.
- 9) It is important that if this change decision is made that it also includes elements that go beyond the DOD. Space is a large eco-system, and if it is to be as effective as possible we need to:
  - a. Ensure that NASA remains strong, well-funded and independent as our civil space agency to maintain and enhance its preeminent global position.
  - b. Continue to provide incentives for the commercial space industry to invest private money in technologies, systems and processes which can be utilized in a cooperative manner.
  - c. Incorporate the best of our universities by continuing to support STEM and their primary research thus providing the motivation to the next generations to pursue space studies. This will concurrently increase the talent pipeline for the DOD and greatly enhance the Department.
  - d. Utilize the substantial body of work being done at our national laboratories and apply this significant previous investment as another resource for a future Space Force.
  - e. Understand that we live in a global environment. Multi-national space activities have been successful for the U.S. in the past and, when practical and feasible, we should seek to cooperate with our allies.

Engraved on a statute at the entrance of the National Archives is a Shakespearian quote:

“What Is Past Is Prologue.”

I would like to end by reading excerpts from the *Aircraft Year Book for 1937* which was the 19<sup>th</sup> annual edition published by the Aeronautical Chamber of Commerce of America, Inc. New York, NY:

*“... But most significant of all, and a situation that defies any sort of restraint in describing it, is the breakneck race of all the other large nations for military supremacy in the air. The American people have taken real pride in the success with which they have developed the airplane as a vehicle of peaceful transportation. They have always preferred that kind of development as compared to making the flying machine an instrument of war; and there is no indication that the national thought has changed. On the other hand the present activity abroad is predominantly military and it is growing so rapidly that it no longer can be ignored. Great Britain, France, Germany, Italy, Russia and Japan are going into mass production of military aircraft ... as rapidly as facilities permit. Their factories are operating day and night. In the laboratories and drafting rooms, their scientists and technicians are working secretly but none-the-less feverishly on new things designed for aerial warfare.*

*Many of these developments abroad ... seemed fantastic and more of a stunt... but in aviation the stunt flight of today seems bound to be commonplace tomorrow. ... The powers abroad are spending untold amounts of money on research and development: but they are not just waiting for the new things to be created. They are building quantities of those machines... based upon American aircraft operated in the United States... The laboratory work in progress however, surely will result in much originality of design and construction. There in lies the possible menace to American leadership. ... They are now making up for lost time...*

*During the last 12 months the United States dropped from fifth to sixth place among the seven air powers in the number of combat planes available... foreign activity now threatens to reduce by progressive stages the present American superiority... the United States is not spending enough money on fundamental research... while the superiority of American equipment is unquestioned at present, it is being challenged by the scientific efforts of the other powers.*

*Americans returning from abroad are convinced that the national thought as to safety from invasion must change; and whether the people of the United States like it or not, they must take care that foreign nations do not surpass them in the development of air power.”*

Substitute “space” for “air” and these words are just as valid in 2018 as they were in 1938. We know what happened to the world just a few short years after these statements were made. We must use all possible efforts to ensure that it does not happen again.

Therefore, after weighing information from many perspectives, I have come to the conclusion that the need is high, clear and present for a fundamental shift in our approach to space and that the consequences of inaction are great. I believe that the time is right for us to establish a United States Space Force.

Thank you for allowing me the time to address the Space Council.