BUILDING

a United States Space Force

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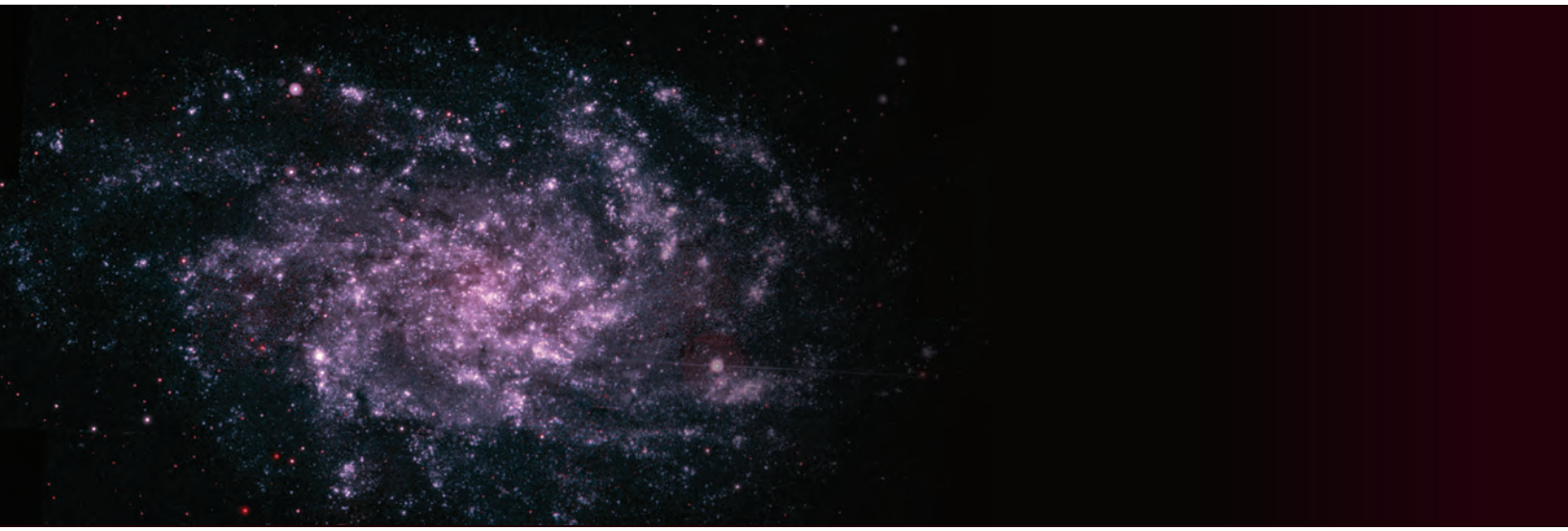
The time has come for the United States to build a Space Force. A Space Force is not a new concept and has been proposed many times in the past. Elected officials like U.S. Senator Bob Smith and members of the Space Commission brought up the idea of creating a U.S. Space Force. (McConnell, May 20, 2001). What exactly do I mean when I say create a Space Force? Am I proposing a group of space fighter pilots, as we see in the movies that travel around establishing bases on other planets? Alternatively, am I talking about an organization specifically dedicated to protecting U.S. space interest? In short the answer to both is, yes! Before you file this paper with your science fiction section, there are a few quantifiers we need to cover along with a few treaties we need to explore. In this article, I will cover the following: The reasons for the U.S. Space Force; the legal constraints on such a force to include the ways around them; and why the U.S. Space Force needs to be separate from the other services in order to meet the objectives of true space superiority. In order to examine these topics, we must look at the Outer Space Treaty and its limitations on establishing a moon base, maneuvering military vessels in space, and what types of weapons can be used in space. We also need to look at what the service priorities are and how they affect satellite acquisition.

To understand the need for a U.S. Space Force we must begin by looking back in time at the need for countries to control their shipping lanes from piracy in the late 1700s. We then need to see how this compares with insuring freedom of maneuver in space today. In the late 1600s and early 1700s, shipping lanes between countries were plagued by piracy. This was especially costly to the major powers of the day because their ability to control the seas fueled their empires. The seas were used to transport gold and other valuables to pay for the costly expansion of their empires. For pirates, this was a very lucrative ven-



ture. For a small investment, pirates could plunder on countries' ships under contract from another. This became a proxy fight and gave the third party countries plausible deniability. Pirates would also plunder for themselves. As the effects of piracy started to hurt the economy of an empire, it was forced to take action. Soon nations had to use their navy to protect their merchant ships and patrol their shipping lanes. This meant they had fewer combat vessels supporting the expansion of their empires. Eventually the pirates were defeated, as they were no match for the military fleets of the world. Unfortunately, countless riches were lost before the nation's militaries engaged these acts of piracy. Due to the lack of planning, empire expansion slowed and in some cases contracted. Early leaders failed to see the necessity of ensuring the freedom of maneuver within the shipping lanes. They were under the false assumption that no one would dare attack our ships; sound familiar. Today we know that security is one of the essential elements in all forms of maneuver. (FM 7-8, 1992) Security is even one of the five principles of patrolling. (SH 21-76, 2000) So, how does all this apply to space? Space is becoming more profitable for private business every day. Through the rise of consortiums and the use of foreign launch services, access to space is getting cheaper. Now, with the onset of Burt Rattan and Richard Branson's organization, Virgin Galactic commercial space tourism may soon be a reality. In addition, the United States stated position is we will eventually return to the moon and establish a lunar base. If this base remains in operation, it will need re-supplying. Because of this, it is logical to assume this job will eventually be contracted out just as we contract ship movements on the seas. As private business sees the potential to make a profit, they will move to compete for these lucrative contracts. This model will resemble the use of merchant marines and other private companies that transport our supplies and equipment by sea and rail. This may start by contracting out the continual re-supply of the International Space Station, while the U.S. and its international partners focus on the moon. Eventually as the private companies develop the technology to reach the moon they will in all likelihood take over that mission. This would free up the United States and its partners to push further out into space.

In the near future, money, information, valuable supplies, and equipment will transition through space, and just like in the 1700s, they will need to be protected. Some of these resources will be aboard transports or in the satellite network. In fact, money and information are already being moved through our satellite network. The security of the data stream could be easily compromised if someone disrupts the network or intercepts the signal from orbit using either a manned or an Unmanned Space Vehicle. Today the on orbit interception is a very low threat due to the limited number of space faring nations; however, this will change. As for valuable supplies and equipment, they are most vulnerable from on orbit systems. What happens when we discover and learn how to exploit natural resources on the moon and other planets, like helium three? Once we start transporting these extremely valuable resources back to earth, they become high value targets for those who want it, or who do not want us to have it. The protection of our satellite network falls into not only the protection of our equipment but also the protection of a Space force. Let's say a hostile nation wants to conduct a close up inspection of one of our satellites; how do we stop them. What if their intentions are more serious?

What if they want to move, steal or destroy our systems? We need to have someone in the Area of Operations in order to stop these types of actions. A manned spacecraft or an Unmanned Space Vehicle can do this type of interdiction. Without this capability and a dedicated organization to use it, we cannot properly defend our satellite network, from all likely attacks. The possibility of a ground intercept is a higher threat.

Looking at the Outer Space Treaty that the United States ratified, there are certain constraints on establishing a conventional Space force. A military Space force must be allowed to conduct "Full Spectrum Operations." They must be free to conduct Offensive, Defensive, Stability and Civil Support Operations. Embedded in these are some sub-elements we will focus on (maneuver, and prepared defensive positions, or fortifications), but for this paper we will only discuss Offensive and Defensive operations. (FM 3-0, 2008)

Offensive space operations are critical to ensuring freedom of maneuver in space. These operations can be in reaction to hostilities or in a preemptive maneuver as a spoiling attack or simple patrolling. Conducting offensive space operations carries with it some legal trip wires. First is the ability to maneuver forces. According to the Outer Space Treaty, Article IV, "… the conduct of military maneuvers on celestial bodies shall be forbidden." (Outer Space Treaty, 1967) The question is how does the world community define maneuver? Most would think this is a straight forward concept, but it isn't. For example if a country uses a strict definition to define maneuver as the movement of military personnel and equipment within an area of operations, then we conduct maneuvers in space all the time. Many of our Apollo astronauts were military and what if we put a Department of Defense satellite in orbit around the moon and continually move it? Is that conducting military maneuvers? If so, we have violated the treaty. Another interpretation of military maneuvers could be conducting a military exercise. This is sometimes called conducting maneuvers. The problem with this is we did conduct military exercises on the moon. During our visit to the moon, we had military men conducting Reconnaissance. Although they were working in a "civilian capacity," for scientific investigation, Reconnaissance is a form of combat patrol. This was a thin line we walked and the Soviets were planning to walk the same thin line. Could this have been a violation? Our definition of maneuver is "the employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy in order to accomplish the mission." (FM 3-0 Operations, 2008) If we use our definition, we have not violated it. The problem is most treaties have a section that defines what words will mean in the treaty. The Outer Space treaty does not have this, and I believe that was intentional. Some would say that this part of the Outer Space Treaty was referring to the marshalling of military troops on the moon in preparation for an attack on earth. Based on the political environment of the day, this is the most likely intent of the "no military maneuver" part of the treaty. The biggest misconception about the Outer Space Treaty is that it forbids placing weapons in space. This is definitely not true. Article IV of the Outer Space Treaty (1967) says, "States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any manner." Some people would look at this portion of the Outer Space Treaty and conclude they were concerned about a space nuclear war. The real concern is of placing nuclear launch platforms in space to be used on enemy states on earth. This type of action could render the Mutually Assured Destruction doctrine useless. This would allow virtually undetected nuclear missile launches from space. The only problem with this article is that Intercontinental Ballistic Missiles are "objects carrying nuclear weapons" Outer Space Treaty (1967) and they transition through space.

Just like Offensive Operations, being able to conduct Defensive Operations is critical to a military force; the same can be said for a space force. So, how do we conduct defensive operations in space? According to U.S. Army (FM 3-0, 2008), there are three types of Defensive Operations: Mobile, Area and Retrograde. Embedded in all these are the use of some fortification. What would this look like in space? The most common form of fortification is a base camp. The most practical place for such a base would be the moon. Unfortunately, there is a problem with that. According to Article IV of the Outer Space Treaty of 1967, "The Moon and other celestial bodies shall be used by all State Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden." (Outer Space Treaty, 1967) If you take this at face value, it means you cannot establish a base anywhere but on Earth. If this is the case, we need to withdraw from the Outer Space Treaty like we did the Anti-Ballistic Missile Treaty. Before we give up on our ability to secure the "space lanes" or before we pull out of the Outer Space Treaty, which could send a wrong message, let's look at our options. The treaty clearly

states, "… military bases, installations and fortifications …" (Outer Space Treaty, 1967) However, there are no restrictions for civilian bases, installations, or fortifications on the Moon. Also, according to Article IV of the Outer Space Treaty of 1967, "The use of military personnel for scientific research or for any other peaceful purpose shall not be prohibited. The use of any equipment or facility necessary for the peaceful exploration of the moon and other celestial bodies shall also not be prohibited." As you can see, there is no restriction on stationing military personnel on the moon for peaceful purposes. Peaceful purposes could be defined as non-offensive. So what is the fix? How can we station a Space force on the moon? We establish a U.S. Government research facility on the moon. A civilian commands the base and a military officer commands the personnel. Think of the civilian commander as the garrison commander with a little more power. This type of base could also be armed, for defensive purposes and would have the capability to resupply military ships patrolling the area. Such a station could act as a signal collection base. We could use it to gather signal intelligence on countries here on earth. The only limitation for weapons on the moon is testing. Weapons testing is not allowed under the treaty.

So, why is a separate space force the way to go?

So, why is a separate Space Force the way to go? Isn't someone conducting the space operation mission now? Why not just create one military force? These are all good questions and most likely the same ones the Space Commission asked when the topic came up. To best answer, these questions we have to look at the nature of the military.

Who is conducting the space operation mission?

As it currently stands, the executive agent for space in the United States military is the Air Force. However, all U.S. services are involved in space and space operations. All services are end users of space, the Army being the largest one. The service with the principal amount of space professionals is the Air Force followed by the Army and its Functional Area 40 Space Operations Officers. Both the Air Force and Army conduct offensive and defensive space. However, the Air Force is the only force that builds satellites and launches them. This sounds good on paper because currently the other services have their hands full with the current wars in Iraq and Afghanistan. So, if this is a mutually beneficial relationship, why change? Well that is easy. It's not a mutually beneficial relationship. As the executive agent for space, the Air Force gets a whole lot of money because satellites cost a lot of money. The problem is the Army is stuck with whatever the Air Force develops. It is true that we request certain requirements, but when the tradeoffs occur we do not have the Acquisition people trained in Army space operations there; this is due to the current operation tempo. So, how would this be different with another agency building the satellites? That is also an easy question; the Air Force has its own priorities, as it should. Therefore, if the Army asks for an imager with a sub meter resolution to identify ground vehicles, without a Liaison Officer following every step of the development, they may find the satellite they get is not what they need. In our current example, if the resolution is traded off for other capabilities the Army still gets its imager but it is not what they need. The Air Force, on the other hand, could use it for missile and airfield identification. As a note, the Army is currently planning to develop and deploy its own Micro-SATs. The Air Force is the executive agent for space but it lags behind the Army in the area of offensive space. If you look at the Army policy for Space Force application mission area it says, "This mission area encompasses combat operations in, from, and through space to influence the course and outcome of conflict."(FM 3-14, 2005a) Notice how it talks about combat operations in space. In the realm of offensive capabilities the Army has taken a major role in the area of exploitation and negation. FM 3-14 says this about exploitation, "space dominance and the full exploitation of space systems are vital to achieving the precision, information, superiority, and battle command capabilities essential for executing the responsive, full spectrum …" (FM 3-14, 2005b) But what is exploitation? According to FM 3-14 an example

of exploitation is, "Team members provide detailed, tailored exploitation of spectral and radar data in support of operations." (FM 3-14, 2005c) So, what is negation? Negation is a subcomponent of Space Control.

According to FM 3-14, "Space Control Operations ensure freedom of action in space for the U.S. and its allies and when directed, deny an adversary freedom of action in space. Space control involves five interrelated objectives: Surveillance of space to be aware of the presence of space assets and understand real-time satellite mission operations. Protect U.S. and Friendly space systems from hostile actions. Prevent unauthorized access to, and exploitation of space systems. Negate hostile space systems that place U.S. interests at risk. Directly support battle management, command, control, communications, and intelligence." If you notice the underlined parts you see they are a major part of true space superiority. However, the Army can't do every part of space superiority. All the services rely on systems already on orbit or on the Air Force to put new ones up. You can already see that each force, as they are now structured does not do it all. I would further say any one of the current forces cannot do it all because of more urgent priorities. The Air Force is focusing on air superiority, the Army and Marine Corps are focusing on the ground fight, and the Navy is focused on sea power. If you put the mission of true space superiority on any of the existing forces, one of two things would happen: one, the job would be substandard as it is now, or two, their main mission would suffer.

Why a Separate Space Force?

If all the services are conducting different parts of the space operations mission, why is it not working to achieve true space superiority? The answer is simple. As mentioned before every service has its own priorities and it is difficult to get them to agree on anything, much less something as complicated as space superiority. The Space Commission made two recommendations on this subject: Create a Space Corps within the Air Force or create a Military Department for Space. According to the executive summary of the Space Commission Report (2001), "The Department of Defense requires space systems that can be employed in independent operations or in support of air, land and sea forces to deter and defend against hostile actions directed at the interest of the United States. In the mid-term, a Space Crops within the Air Force may be appropriate to meet this requirement; in the long-term scenario it may be met by a military department for space. In the near-term, a realigned restructured Air Force is best suited to organize, train and equip Space forces." This was not an either or concept; the commission understood you need to create a separate Space force. This would allow an organization to be specifically dedicated to all U.S. space assets. This would include all aspects of Offensive and Defensive space as well as the acquisition of new systems for all the other services. This would take all the services' bias out of the equation and the other services would get a better product. Do not be mislead; you would still need service specific Liaison Officers to ensure proper systems are acquired. I understand the first question on everybody's mind. Why not just do this now, with the Air Force, and forget a Space Force. I agree we should do it now, but you would have the other problem of stretching the Air Force too thin.

With all the talk these days about joint operations, why not just create one combat force and roll space into it? Wouldn't this take care of the institutional bias? It might, but there is a problem with that; it's called the United States Constitution. The U.S. Constitution says in Article I Section 8 "The president shall be the commander-in chief of the army and navy of the United States." And that congress shall have the power "… To raise and support armies … To provide and maintain a navy … (U.S. Constitution, 1776)." So, you see we can't just scrap a service without amending the U.S. Constitution.

As you can see this issue has become quite the dilemma and could become a serious problem in the future. What happens if we are not prepared to meet a possible aggressor in space? What if China or North Korea, who have not ratified the Outer Space Treaty, decide to exert their power in space and attempt to gain a foothold in order to control our access to space? What if China or North Korea decides to place a nuclear weapon in space? What if they try to establish a foothold on the moon in order to prevent the United States from going there? If we are not ready to meet these kinds of challenges, we may find ourselves in a full scale war trying to reclaim the high ground. We are not and cannot exercise true space superiority as currently structured; therefore, a United States Space Force is necessary.