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Space Force Manpower Requirements Designation

Allison Abbe and COL Tom Greenwood, USMC (Ret)

Background

In 2018, IDA conducted a study for the Office of the Undersecretary of Defense for Personnel and Readiness on military essential manpower requirements. Upon completion, the sponsor asked for a short analysis of the manpower implications if DoD activates a Space Force, focusing on distinguishing military and civilian manpower requirements.

Problem Statement

Achieving the lethality and readiness goals of the National Defense Strategy requires an appropriate and efficient total force mix of civilians, military, and contracted support. The initial design of a Space Force should designate manpower requirements deliberately rather than by default or established practice, considering military and inherently governmental functions, personnel management needs, and costs. Past research indicates that once organizations make that fundamental manpower decision, implementing conversions to change the manpower mix is extremely difficult to re-engineer. The over-designation of military manpower for functions that do not require service members can undermine force readiness and lethality, and organizations may have few opportunities to correct the manpower mix once it has been established.

Summary of U.S. Law and DoD Policy on Military Essentiality

According to statute, determining workforce mix should prioritize risk mitigation over cost.¹ In addition, special consideration is to be given to civilian manpower for new requirements and for functions that are “necessary to maintain sufficient Government expertise and technical capabilities” or that involve operational risk if performed by contractor support.² DoD policy provides guidance for distinguishing functions that require military or civilian manpower and commercial activities that can be performed by contractor support, military personnel, or government civilians.³

¹ US Code Title 10 Section 129a.

² US Code Title 10 Section 2463.

³ DoDD 1100.4: *Guidance for Manpower Management* (Feb 2005). Department of Defense Instruction (DoDI) 1100.22: *Policy and Procedures for Determining Workforce Mix* (Apr 2010).

As noted in Department of Defense Directive (DoDD) 3100.10, *Space Policy*, “DoD will recruit and sustain a cadre of highly skilled military and civilian space professionals. A total force approach will be used in structuring space force capabilities and, as appropriate, ensuring interoperability among U.S., allied, and coalition forces.”⁴ DoD manpower policies identify three categories of functions: military essential, inherently governmental, and commercial activities.

- Military essential requirements are defined by policy and include military-unique knowledge and skills, military incumbency as required by law, executive order, treaty, or international agreement, and command and control.⁵ Other functions may require performance by military personnel under specific conditions or for certain institutional or personnel management purposes, even if the functions themselves are not solely military in nature.
- Inherently governmental functions are defined by statute and are “so intimately related to the public interest as to require performance by Federal Government employees.” These functions “require either the exercise of discretion in applying Federal Government authority or the making of value judgments in making decisions for the Federal Government, including judgments relating to monetary transactions and entitlements.”⁶

The table shows which source can perform which function(s).

| Function | Military | Civilians | Contracted Support |
|-------------------------|----------|-----------|--------------------|
| Military Essential | Yes | No | No |
| Inherently Governmental | Yes | Yes | No |
| Commercial | Yes | Yes | Yes |

Although military manpower is the most flexible and can be designated for any of the functions, considering all manpower sources in designating requirements ensures a more efficient workforce. DoD policy is to designate civilians as the principal manpower source except when a military member is essential to perform the work due to legal requirements; the need for command and control in crises; to maintain combat readiness; the need for military-unique knowledge and skills; to mitigate risk; ensure esprit de corps; to accommodate overseas and sea to shore rotations, career development, or wartime assignments or unusual working conditions.⁷

⁴ DoDD 3100.10: *Space Policy* (Oct 2012, re-issued Nov 2016), 5.

⁵ DoDI 1100.22: Policy and Procedures for Determining Workforce Mix (Apr 2010).

⁶ Public Law 105-270: Federal Activities Inventory Reform Act of 1998

⁷ DoD, DoDI 1100.22: Policy and Procedures for Determining Workforce Mix (Apr 2010), 3.

Additionally, contract personnel may not be used in lieu of civilian personnel unless one of two conditions is met:

1. Cost comparison indicates that civilians are not the lowest cost provider, or
2. Civilians cannot be used for legal, regulatory, or procedural reasons.⁸

Thus, military manpower is to be designated by exception. Civilian manpower and contracted support help reserve military manpower for functions that directly contribute operational capability.

Within the space domain, military manpower requirements include military essential functions directly involved in space operations and other enabling capabilities that require performance by military personnel. Space operations functions require military performance for command and control and legal reasons, whereas enabling functions require military performance for procedural reasons. Each is discussed in more detail below.

Military Essential Functions

Combat Operations

1. The use of force is an act of sovereignty by the U.S. Government and must be in compliance with U.S. law, international law of war, treaties, and associated principles. When authorized by the Commander in Chief, U.S. military forces may use deliberate force against the armed forces or other military objectives of another nation or armed actors for the purpose of national defense.
2. These measures are not limited to lethal force against persons, but include any force or compulsion, destruction of property, or obstruction of travel or communications. These include the use of “deliberate destructive and/or disruptive”⁹ capabilities that go beyond traditional combat operations of closing with and destroying a hostile force. These operations may be carried out by personnel located in or outside of the theater and include offensive and defensive actions.

Command and Control

1. Combat operations may include a variety of measures needed to deter or defeat an enemy as quickly and as efficiently as possible; as such, they require discretion on the part of military commanders and forces. In exercising that discretion, military commanders

⁸ DoD, DoDI 1100.22: Policy and Procedures for Determining Workforce Mix (Apr 2010), 2.

⁹ DoD, DoDI 1100.22: Policy and Procedures for Determining Workforce Mix (Apr 2010), 18.

and forces are accountable for adhering to the applicable rules of engagement and using force in accordance with the laws of war. Such accountability is rooted in the application of the Uniform Code of Military Justice (UCMJ) to military members.

2. Because personnel engaged in space operations are not always deployed outside of the continental United States to a combat theater, some aspects of international law may be less relevant in space operations relative to other domains (such as the need to make military personnel visually distinguishable). However, the need to maintain disciplined use of military force is just as applicable. As a result, maintaining operational control via a military chain of command whose authority resides in the UCMJ necessitates using military performance for combat functions. Accordingly, law further requires that combatant commanders be military officers.¹⁰ Reserving space control and command and control for military performance is particularly important in the space domain due to the potential for rapid escalation of hostilities in a crisis.

Military essential functions in space operations include

1. All offensive space control (OSC) operations, which are the application of capabilities to deceive, disrupt, deny, degrade, or destroy an adversary's systems or capabilities.¹¹ This is regardless of whether or not the effects created on an adversary's systems/capabilities are temporary or permanent, maintaining discipline and accountability in these operations requires military performance.
2. Defensive space control (DSC) operations involving active measures that neutralize or degrade an adversary's systems of capabilities. These include measures that defend space systems by pre-empting and suppressing attacks.¹²
3. Navigation warfare (NAVWAR) involving "deliberate offensive and defensive actions to assure friendly use and prevent adversary use of positioning, navigation, and timing information"¹³ due to its disruptive effects and potential for degradation to friendly capabilities.
4. Command and control of Space Forces, because the command and control of military forces ensures appropriate accountability from the most senior operational commander through the lowest level of command that responsible for exercising discretion and ensuring personnel safety and mission accomplishment.

¹⁰ US Code Title 10 Section 164.

¹¹ JCS, Joint Publication 3-14, *Space Operations* (April 10, 2018), II-2.

¹² JCS, Joint Publication 3-14, *Space Operations* (April 10, 2018), II-2-3.

¹³ JCS, Joint Publication 3-14, *Space Operations* (April 10, 2018), II-3.

Another consideration for manpower designation in space operations is the need to integrate space into multi-domain operations, consistent with DoDD 3100.10:

Specifically, the operational space force structure will integrate space activities with those from other operational domains to support deterrence and synchronize the conduct of military operations.¹⁴

Some manpower requirements may result from the force structure needed to support integration with other Services and domains.

1. A good example of this is the U.S. Army's decision to activate two brigade size Multi-Domain Task Forces that contain an Information, Intelligence, Cyber, Electronic Warfare and Space (I2CEWS) unit that will require highly trained military personnel in space operations.
2. Additionally, space operations personnel are assigned to Combatant Commanders and other major operational combat organizations to assist with the daily space coordinating authority and operational planning to ensure appropriate space capabilities are integrated into the joint mission. Similarly, space operations personnel can be found on operational headquarter staffs in theater and in naval carrier battle groups.

Civilian Manpower in Space Operations

Consistent with current policy, military operational requirements do not include technical advice on the operation of space systems, spacelift, positioning and navigation, nor the research and development of destructive or disruptive capabilities, except when military unique knowledge and skills are needed, as described below.

Additionally, civilians can perform some DSC operational requirements, such as passive DSC, which may include deception, concealment, and camouflage.

Space-Enabling Capabilities

Some space-enabling functions require military performance even though the function itself is not military essential. Risk factors and personnel management may lead to military manpower being designated for certain functions that otherwise may be designated inherently governmental or commercial in nature.

¹⁴ DoDD 3100.10: *Space Policy* (October 2012, re-issued November 2016), 3.

Military and civilian manpower in space-enabling functions

1. Military-unique knowledge and skills
 - a. Functions for which military unique knowledge and skills are required, such as some research, development, acquisition, and intelligence roles. However, military manpower is not the only source for military unique knowledge and skills. For civilians and contract support, prior military experience can be a required qualification if current military knowledge and skills are not required. Thus, these functions may include a mix of military and civilian manpower.
 - b. The designation of military vs. civilian manpower should be considered at the unit and organizational level to ensure an efficient and effective mix within the Space Force and subordinate organizations, not just at the level of individual authorizations.
2. Requirements for career development and job rotation
 - a. Military space operations personnel will require rotational assignments in the joint force to ensure the successful integration of space capabilities into multi-domain operations. They may also require rotational assignments in acquisition and sustainment roles to ensure the high level of technical competence needed to be an effective operator.
 - b. Military manpower is also required to build a bench of space leaders who are highly proficient and experienced in developing doctrine, tactics, techniques, and procedures for the space domain.
3. Requirements to minimize operational risk
 - a. Functions that require a high degree of operational control and continuity, requiring the more predictable staffing and timing of military assignments compared to civilian personnel management, require military manpower.
 - b. Functions that require unusual hours or unpredictable demands not conducive to civilian personnel management or contract performance may also call for military manpower.
 - c. Military manpower should not be automatically assumed to reduce operational risk relative to other manpower sources. In some circumstances, civilians may offer greater continuity and stability. Manpower designation should take into account civilian and private sector labor market dynamics to assess operational risk and cost appropriately.

Other Considerations

- If operational vs. enabling functions are severable within a system, then an organization may have military personnel, civilians, and contracted support operating the same system but performing different functions. However, if separating functions creates an unacceptable level of operational risk, or if it is not possible to separate operational functions requiring military performance from enabling functions or passive DSC for a particular system, then work must be designated for military performance.
- Many functions in space mission assurance, including activities for reconstitution and resilience, are not military essential, and requirements may be met with a mix of military manpower, civilian manpower, and/or contract support. In these cases, considerations of operational risk and cost should drive manpower requirements designation.
- Decision making that involves risk to U.S. systems and resources is inherently governmental but not necessarily military essential, and may therefore be designated for either civilian or military performance.
- The broader talent market may impact Space Force manpower and staffing. A Space Force may benefit from maximizing the flexibilities offered in the FY19 National Defense Authorization Act regarding military careers, such as expanded opportunity for lateral entry.
- A Space Force may require different military career paths than those the Services are using. Career paths should incorporate at least three components: greater specialization in the space domain to ensure return on investment for training costs, broadening opportunities in the Joint Force to ensure multi-domain integration, and movement between the operational and enabling space force. This movement is needed to ensure a technically capable operational force and operationally-informed enablers. Organizations conducting Space Operations at the tactical level will also benefit from having career Space Force personnel work at all echelons over their career: the tactical, operational and strategic/national levels.

Conclusions

There is no specific ratio of military:civilian personnel that should be targeted in a total force for the space domain; rather, manpower mix is the result of aligning requirements to the appropriate labor source. For functions not involving clear military essentiality as described above, there may be more than one appropriate labor source, and organizations have the discretion to determine which source best meets their needs. Considerations when designating manpower requirements to the appropriate labor source include, in order of precedence:

- A. Identifying the military essential and inherently governmental functions
- B. Identifying military requirements associated with force structure (e.g., command positions)
- C. For functions that do not require military or civilian manpower for reasons of law or policy, further considerations include:
 - 1. Assessing potential operational risks associated with each labor source
 - 2. Identifying personnel management needs for career development and a sufficient leadership pipeline
 - 3. Assessing life-cycle costs to determine which labor source is the least costly.

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