

U.S. Department of Defense Experiences with Substituting Government Civilian Employees for Military Personnel

Executive Summary

Jennifer Lamping Lewis, Edward G. Keating, Leslie Adrienne Payne, Brian Gordon, Julia Pollak, Andrew Madler, Hugh G. Massey, Gillian Oak

Key Findings

- Substitution ratios of 70 percent appear to be feasible, on average. Between fiscal years 2004 and 2012, it was common for approximately seven government civilians to move into positions that were previously held by ten military service members.
- A few statutes and policies preclude conversions, even when the conversions can be shown to be cost-effective. These include Section 701 of the National Defense Authorization Act for Fiscal Year 2010, Section 955 of the National Defense Authorization Act for Fiscal Year 2013, and civilian full-time equivalent ceilings imposed by the U.S. Department of Defense.
- Funds covering military personnel are managed at the service level, while funds covering government civilians are managed at the installation level. Consequently, installation commanders regard military personnel as free from cost. Moreover, installations that propose conversions risk losing military personnel without securing the means to hire new civilians.
- Some conversions that are planned and authorized are not executed. Root causes include the two-year lag between the time when conversions are programmed and budgeted and the time when funds are appropriated, the sluggishness and rigidity of the civilian hiring process, and general confusion about the process for executing authorized conversions.

As budget pressures persist for the federal government, the U.S. Department of Defense (DoD) continues to seek ways to gain efficiencies and reduce costs. Optimizing the DoD workforce by implementing the most cost-effective mix of military service members, government civilian personnel, and contracts for services offers promising opportunities for savings. One force-shaping tool at the department's disposal is the ability to convert military positions to positions filled by federal civilian employees—referred to as *military-to-civilian conversions*.

At the request of the Under Secretary of Defense for Personnel and Readiness, RAND researchers examined DoD's most recent experience with military-to-civilian conversions. The research did not address whether the department *should* convert additional positions; instead, it examined the most effective ways to do so in order to inform the department's decisions on future use of this force-shaping tool.

The RAND research team employed a multimethod approach in conducting its assessment that included

- a review of relevant statutes and policies governing performance of work by military personnel, government civilian employees, and contractors
- an analysis of the most recent experience with military-to-civilian conversions, during fiscal years (FYs) 2004–2012, using Defense Manpower Data Center (DMDC) data
- discussions with human resource, manpower, and budget experts across DoD who have experience with military-to-civilian conversions.

The analysis focused primarily on conversions that would be filled by federal civilian employees and, because of data limi-

tations, did not include a detailed examination of the potential use of contracts for services.

This research brief provides a summary of RAND's findings. It includes an overview of statutes, directives, and instructions pertaining to military-to-civilian conversions; a description of the patterns exhibited by conversions that occurred between FY 2004 and FY 2012; a list of the most salient impediments to authorizing and executing conversions; and recommendations for changes to statutes, policies, and business practices that would facilitate military-to-civilian conversions in the future.

GOVERNING POLICIES

The Secretary of Defense is directed in statute to determine the “most appropriate and cost efficient mix” of personnel to accomplish DoD’s mission.¹ However, other policies and statutes limit the department’s ability to make personnel decisions based purely on mission effectiveness and cost considerations. For example, there are many guidelines, statutes, and policies that prescribe ceilings on personnel in various organizations throughout DoD. In particular, DoD has capped the number of civilian positions within the Office of the Secretary of Defense (OSD) and the services at FY 2010 levels.² In addition, Congress requires reductions in total funding for the civilian and contractor workforces that are not less than the savings achieved from reductions in military end strength.³ Moreover, the services are prohibited by statute from reducing the number of military personnel in medical positions below specified thresholds or from converting any medical or dental position from military to civilian provision.⁴

In spite of these constraints, statutes and policies leave a significant amount of room for making subjective judgments about the functions to be performed by military personnel, government civilian employees, and contractors. Such leeway grants commanders a fair amount of authority and discretion to manage the workforces they supervise—which is appropriate, given their detailed understanding of the specific workings of their installations. The drawback of granting such leeway, however, is that commanders are also able to protect positions from conversion to civilian positions for reasons other than mission effectiveness and cost.

While there is considerable opportunity to pursue military-to-civilian conversions, there appear to be few statutes and policies that offer specific guidance on the process for executing authorized conversions. Existing policies provide abundant guidance on identifying positions for conversion, as well as program-

ming and budgeting the conversions identified. However, the RAND team found little guidance on executing conversions. The process is necessarily complicated because it involves synchronizing military assignments with the civilian hiring process. Hence, the development of such guidance, either by DoD or the services, may prove useful in facilitating military-to-civilian conversions.

PAST EXPERIENCE

The RAND team analyzed DMDC data on military and civilian personnel in an effort to better understand DoD’s experience during the previous wave of conversions that occurred between FY 2004 and FY 2012. The data analysis yielded a number of interesting insights.

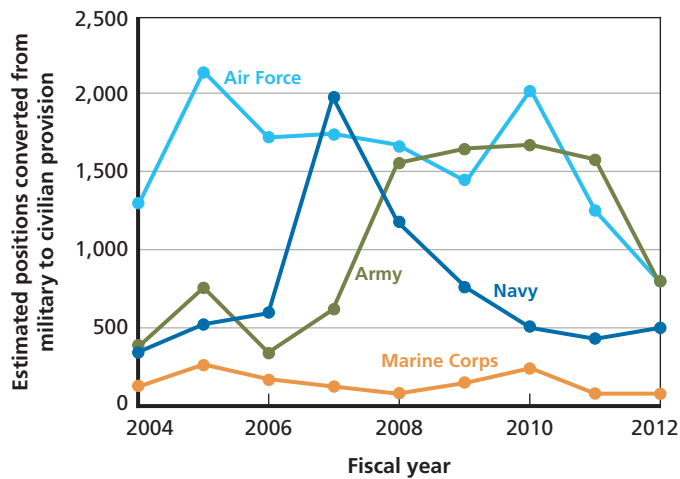
First, our estimates indicate that almost half of military personnel vacate their positions every year. In contrast, about 17 percent of civilian personnel vacate their positions every year. These results suggest that civilian personnel provide more continuity than military personnel do and reduce training requirements—two reasons why commanders may find value in their civilian employees.

While vacant military positions are not a prerequisite for the planning, programming, and budgeting of military-to-civilian conversions, vacancies are relevant for the execution of conversions. Installations must schedule the phasing out of military positions in accordance with the end of the vacating service members’ tours, as well as plan for the hiring and training of civilian replacements.

Second, both the number of converted positions and the number of occupations that experienced conversions varied greatly across the services. As Figure 1 shows, the Air Force experienced the greatest number of conversions. The Navy experienced far fewer, despite the number of sailors being roughly comparable to the number of airmen. The Army also experienced fewer conversions than the Air Force did, even though the number of soldiers was meaningfully larger than the number of airmen. In FY 2010, for example, the Air Force converted 2,037 positions, the Army 1,671, the Navy 492, and the Marine Corps 228. By way of comparison, the numbers of active-duty military personnel on September 30, 2009, were 333,408 for the Air Force, 553,044 for the Army, 329,304 for the Navy, and 202,786 for the Marine Corps.

Figure 2 presents the percentage of FY 2012 personnel in each of the four services that experienced at least some conversions in their occupation over the time period FY 2004–2012.

Figure 1. RAND-Estimated Military-to-Civilian Conversions



SOURCE: RAND-developed methodology using DMDC military and civilian personnel inventories.

RAND RR1282/1-1

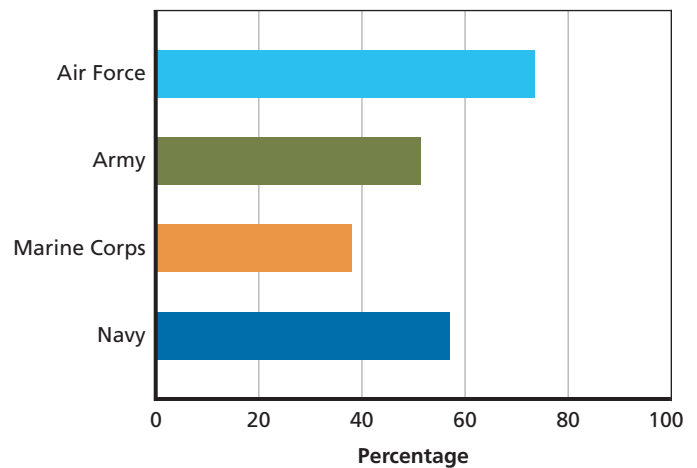
Our estimates find that almost three-fourths of September 30, 2012, Air Force military personnel worked in occupations in which the Air Force had military-to-civilian conversions. In contrast, about half of September 30, 2012, Army military personnel worked in occupations in which the Army had military-to-civilian conversions over the FY 2004–2012 period.

Third, our estimates indicated that, over the same time frame, the services typically achieved military-to-civilian conversion substitution ratios around 70 percent, meaning that seven government civilians moved into positions that were previously held by ten military service members. This figure roughly aligns with a 2013 report by the Congressional Budget Office (CBO) that discussed the option of converting 70,000 positions from military to civilian provision over four years at a ratio of approximately two government civilians for every three military service members.⁵ The substitution ratios we estimated varied across the services and over time, ranging from 56.8 percent to 88.5 percent (see Table 1).

Fourth, military-to-civilian conversions are unusual relative to the ongoing, large-scale turnover in military positions. Between FY 2004 and FY 2012, the RAND team estimates that fewer than 4,500 positions were converted from military to civilian provision in any given year. In FY 2010, our estimates show that 4,428 positions were converted across all the services—about 0.32 percent of FY 2009 military positions DoD-wide.

These estimates indicated that very few positions vacated by military personnel are converted to civilian positions. Most vacated military positions are simply filled by other military personnel. The vast majority of military positions that are

Figure 2. Percentage of FY 2012 Military Personnel in Occupations That Experienced Military-to-Civilian Conversions over the Period FY 2004–2012



SOURCE: RAND-developed methodology using DMDC military and civilian personnel inventories.

RAND RR1282/1-2

Table 1. RAND-Estimated Military-to-Civilian Conversion Substitution Ratios

Fiscal Year	Air Force	Army	Marine Corps	Navy
2004	71.4%	88.5%	62.1%	75.8%
2005	65.8%	87.0%	58.1%	69.4%
2006	69.9%	80.0%	69.0%	70.4%
2007	69.9%	75.8%	61.0%	66.2%
2008	66.2%	66.7%	68.5%	76.3%
2009	69.4%	71.9%	73.0%	81.3%
2010	71.4%	67.1%	64.5%	78.7%
2011	70.4%	65.8%	56.8%	76.9%
2012	69.9%	69.9%	71.4%	69.0%

NOTE: The substitution ratio equals the number of civilian personnel in a specific position in year X divided by the number of military personnel in the same position in year X – 1.

vacated and not filled by other military service members simply remain vacant. Our analysis did not reveal whether the underlying authorizations still existed.

When examining occupations, some experienced no conversions—not surprisingly, combat-oriented occupations, such as missile guidance and control and aircraft launch equipment, fall into this category. Other occupations, most notably security guards, experienced so many conversions that they are now filled entirely by civilian personnel. Most occupations exhibited some conversions, but for the vast majority of these, military

personnel still dominate the workforce. These occupation categories may provide opportunities for additional conversions.

IMPEDIMENTS TO AUTHORIZING AND EXECUTING MILITARY-TO-CIVILIAN CONVERSIONS

A question of particular interest to DoD is why so few military-to-civilian conversions are undertaken. What impediments stand in the way of making greater use of this tool? RAND researchers discussed this question with human resource, manpower, and budget experts across DoD who have had experience with military-to-civilian conversions. A revealing outcome of these discussions was that authorizing conversions is not sufficient; for a multitude of reasons, some conversions that are planned and authorized are not executed. Hence, efforts to improve the process must consider not only the factors that impede the *authorization* of military-to-civilian conversions but also the factors that impede the *execution* of authorized conversions. The most salient impediments to military-to-civilian conversions are described below.

Civilian Positions Are More Vulnerable to Cuts Than Military Positions Are

Service-level processes for reviewing proposed conversions are siloed by appropriation. Several subject matter experts reported that there is little coordination between the analysts reviewing the military personnel budget and the analysts reviewing the operation and maintenance (O&M) budget, which covers the cost of civilian personnel, contracts for services, and a number of other items. Consequently, proposing military-to-civilian conversions exposes installations to the risk of losing military personnel without securing the means to hire new civilians.

Even when additional O&M funds are granted for the hiring of civilian replacements, installations may find themselves constrained by civilian full-time equivalent (FTE) ceilings. One expert described a situation in which “the FTE cap stopped hiring. . . . 650 positions that are funded cannot be filled due to the FTE cap.” Hiring freezes precipitated by sequestration or other budget-related issues further constrain the hiring of civilians to fill converted positions.

Commanders are concerned first and foremost about having sufficient personnel to cover the workload at their installations. The perception that civilian positions are more vulnerable to cuts than military positions creates a disincentive to converting positions, even if the move would be more efficient.

Some Military Positions Are Inappropriately Shielded from Conversion

Not all positions can or should be converted to civilian positions. For example, some positions that are classified as military essential, such as infantry and fighter pilots, cannot be converted—nor should they be.

However, there are other positions that perhaps should be considered for civilian provision but are protected as a matter of policy. Title 10 of the United States Code (U.S.C.) Section 129(c), for instance, prohibits the services from reducing the number of uniformed military personnel in medical positions below specified thresholds or from converting any medical or dental position from military to civilian provision. The prohibition on conversions is without exception: Medical and dental positions may not be converted even if the conversions can be shown to reduce costs without compromising access to or quality of care. Several subject matter experts described such restrictions as counterproductive.

Still other positions are shielded from civilianization for reasons of culture and/or tradition. Some commanders prefer military personnel because they obey commands and can work long hours without overtime pay. In other cases, there may be a prevailing comfort level that results from seeing certain positions, such as recruiting and entry control point positions, staffed with uniformed service members. Ambiguities in policy facilitate shielding such positions from conversion. Installations may appeal to such considerations as esprit de corps, career development, or sea-to-shore rotation to justify the preservation of particular military positions when, in some cases, the justification is inappropriate.

Local Commanders Perceive Military Personnel to Be Free from Cost

Military personnel appropriations funding is managed at the service level. In contrast, O&M funding is managed by the installation. This funding distinction causes installations to treat military personnel as “free” relative to civilian personnel, providing an incentive for commanders to obstruct military-to-civilian conversions. One subject matter expert noted, “The incentive is to keep as much military as you can. If there is a function you want to get, your first try is to use military personnel to do it because they are free.”

The issue is exacerbated by the programming and budgeting processes, which do not permit installations to tie the surrender of a military position to an equivalent increase in O&M funds to cover the cost of a civilian replacement. If installations were able to “cash in” a military position in exchange for the means to hire

a new civilian, the price of military personnel would, in effect, be set equal to the forgone O&M funds, and local commanders would internalize the trade-off between military and civilian personnel. The siloing by appropriation inherent in the current system stymies the establishment of such a link and incentivizes installations to resist military-to-civilian conversions.

A related issue arises from differences between the cost to DoD and the cost to the federal government as a whole. Active-duty service members cost less to DoD because a significant portion of their costs is borne by other federal agencies, such as the Department of Veterans Affairs, the Department of the Treasury, the Office of Personnel Management, and the Department of Education. In contrast, civilian personnel cost more to DoD because few of their costs are borne by other federal agencies and because their higher taxable incomes, while generating larger tax payments to the Treasury, do not count as offsetting receipts to DoD.⁶

Civilian Candidates May Not Be Available to Fill Converted Positions

Well-qualified civilians must be available in the surrounding area and must be willing to assume the challenges and responsibilities required of a converted position. In some cases, authorized conversions are not executed due to a lack of civilian candidates who have the requisite abilities and experience and are willing to work in a military environment. Identifying a suitable civilian candidate is particularly challenging when the position is located in a remote area or requires special skills. Civilian neurosurgeons, for example, are unlikely to seek employment in rural areas.

Advance analysis of the local labor market can help by providing an estimate of the prevalence of civilians with the requisite qualifications and competencies. However, the two-year lag between the time when conversions are programmed and budgeted and the time when conversions are executed mitigates the relevance of the labor market analysis and magnifies the risk of failing to hire suitable civilian replacements. One expert described such an instance: “The initial market analysis showed we had folks in the area with those skills, but when we went to get them, they were not there.”

The sluggishness and rigidity of the civilian hiring process were frequently cited as aggravating factors. The hiring process may not be initiated until the funds to support the new civilian hire have been appropriated. From that point, it may take three to six months to fill the position. A few subject matter experts reported that delays worsened in cases when a large number of civilians had to be hired at one time.

Practical Guidance on the Process for Executing Authorized Conversions Is Sparse

Existing policies provide abundant guidance on determining the optimal workforce mix, identifying positions for conversion, and programming and budgeting the conversions identified. Less attention is paid to the process for executing authorized conversions, and our discussions revealed a general lack of familiarity with the process.

Most subject matter experts reported that they were not aware of any policy documents or guidance relating to the process for executing military-to-civilian conversions. One expert associated with the Navy stated, “A lot of the problem was that there [were] not a lot of good documented policies and no good written guidance on how to execute conversions.” This individual reported reaching out to the other services for guidance: “We coordinated to learn from them.”

Clearly written, practical guidance on the process for executing military-to-civilian conversions could reduce the confusion described by subject matter experts. In particular, the guidance should address best practices for synchronizing the departure of military personnel with the hiring and onboarding of civilian replacements. The tangible benefit would likely be a reduction in the lag time between authorization and execution, which would reduce the frequency of failed executions. The guidance could be developed by either DoD or the services; we are agnostic on this point. The objective is simply to provide practitioners with a clear path from authorization to execution.

Despite these impediments, most of the subject matter experts with whom we spoke voiced support for an increased role for civilians in DoD. Military commanders value the experience and continuity that civilian personnel bring to the workplace. In addition, many DoD civilian employees have prior military experience and, as such, are accustomed to working in a military environment. Manpower analysts in the services and OSD recognized that, in most cases, civilian personnel cost less than military personnel or contractors. Many of them favored military-to-civilian conversions as a means of capturing cost savings.

RECOMMENDATIONS

Our research highlights opportunities for Congress, OSD, and/or the services, should they wish to improve statutes, policies, and business practices in order to facilitate military-to-civilian conversions and motivate greater use of this force management

tool. In addition, we offer a few steps for DoD's consideration, should a new wave of military-to-civilian conversions commence.

Changes to Statutes

Repeal the prohibition on converting medical and dental positions. Section 701 of the FY 2010 National Defense Authorization Act prohibits the services from converting any medical or dental position from military to civilian provision, even if the conversion can be shown to reduce costs without compromising access to or quality of care. Several subject matter experts reported that there is ample opportunity for conversions of medical personnel but that very few such conversions are approved because of the statutory restriction. Repealing the prohibition would permit the services to staff medical and dental positions with the “most appropriate and cost efficient mix” of military and civilian personnel, as directed by 10 U.S.C. 129(a).

Amend Section 955 to exclude increases in civilian personnel funding that result from cost-effective military-to-civilian conversions. Section 955 of the FY 2013 National Defense Authorization Act mandates reductions in civilian personnel and contractor expenditures that are commensurate with reductions in funding for basic military pay achieved from reductions in military end strengths. The statute does provide for certain exclusions, but there is no allowance for military-to-civilian conversions that raise civilian personnel expenditures but reduce the overall cost of personnel, military and civilian.

Changes to Policies

Relax the civilian FTE ceilings to exclude civilian positions arising from cost-effective conversions. More than half of the subject matter experts with whom we spoke cited civilian FTE ceilings as a significant impediment to military-to-civilian conversions. In some cases, the caps have thwarted the execution of conversions that were both authorized and funded. In other cases, installations have refrained from identifying positions for conversion to avoid losing the positions altogether once they are civilianized. Relaxing the civilian FTE ceilings would facilitate the execution of authorized conversions and provide local commanders with appropriate incentives for identifying positions for conversion.

Develop clearer, more precise definitions for the military essential criteria. Installations can argue that certain positions qualify as military essential by appealing to such considerations as esprit de corps, career development, and sea-to-shore rotation. Several subject matter experts reported that, in some cases, subjectivity in determining whether these criteria apply has enabled the protection of military positions for reasons other

than mission effectiveness and cost. Eliminating such room for interpretation entirely is likely not possible—or desirable. Local commanders have a more detailed understanding of the specific workings of their installations and should be able to exercise some authority and judgment in managing their workforces. Nevertheless, OSD should explore ways to tighten the definitions of the military essential criteria, such as tying the career development and rotation criteria to appropriate metrics.

Issue practical guidance addressing the process for executing authorized conversions. Existing policies provide abundant guidance on the criteria used to identify positions for conversion and the process for programming and budgeting the conversions identified. However, practical guidance on the process for executing authorized conversions is sparse. Reducing process ambiguities may shorten the elapsed time between authorization and execution of conversions, increase the likelihood of executing conversions that have been authorized, and improve the experience of commanders and managers engaged in implementing conversions.

Develop a clear definition of military-to-civilian conversion and stipulate that data reporting across the services be consistent with that definition. The data analysis revealed a gap between authorized conversions and executed conversions. In some cases, the gap appears to be artificial—a consequence of inconsistent practices in the reporting of military-to-civilian conversions. Inconsistencies in measuring and reporting conversions impede effective tracking and analysis.

Changes to Business Practices

Amend the programming and budgeting processes to permit installations to tie the surrender of a military position to a compensating increase in O&M funds. Service-level processes for reviewing proposed conversions are siloed by appropriation, with little coordination between the analysts reviewing the military personnel budget and the analysts reviewing the O&M budget. Consequently, proposing military-to-civilian conversions exposes installations to the risk of losing military personnel without securing the means to hire new civilians. Savings from converting positions are captured by the service at large but not by the installations, which regard military personnel as being free from cost. Permitting installations to tie the surrender of a military position to a compensating increase in O&M funds would better align the incentives of the installation with the incentives of the service as a whole.

Reduce the time between authorization and execution of conversions. In order to increase the likelihood that autho-

alized conversions are realized, the services must shorten the time that elapses between authorization and execution. These delays are driven primarily by the two-year lag between the time when conversions are programmed and budgeted and the time when funds are appropriated, the sluggishness and rigidity of the civilian hiring process, and general confusion about the process for executing authorized conversions. Process improvements addressing these root causes may be driven by written guidance, changes to business practices, or both.

Conduct an assessment of the local market for civilian labor before authorizing conversions. The assessment should provide information about the availability of qualified and willing candidates for the civilian positions that will become available and should account for the two-year lag between the time when conversions are programmed and the time when funds are appropriated. Excessive delays between authorization and execution should be avoided so that the conversions can be executed before market conditions change. Our discussions with subject matter experts indicated that these assessments are frequently, but not always, conducted, and, in some cases, the quality of the assessment is poor.

Leverage personnel data to identify occupations or installations that could yield additional conversions. Analysis of personnel data may be able to provide answers to a number of relevant questions, including the following: Which occupations have experienced conversions in the recent past? Are there additional military personnel in these occupations who could also be replaced with civilian personnel? Are there occupations in which conversions are prevalent for one service but not for another service?

Improve and standardize data collection on contracts for services. A limitation of the data analysis we conducted is that the data set covered military and government civilian personnel only; comparable data for contractors were not available. As a result, our analysis does not speak to conversions into or out of contractor provision. Improved and standardized data collection on contracts for services would enable a more complete analysis of workforce mix—providing insight on where and in which occupations contractors have been used to perform functions that were previously assigned to military personnel.

Looking Ahead

Ensure that estimates of the cost savings associated with military-to-civilian conversions reflect substitution ratios that are feasible in practice. A 2013 CBO report presented the option of converting 70,000 positions over four years at a

ratio of two government civilians for every three military service members to achieve savings of approximately \$20 billion.⁷ Our analysis suggests that such a ratio can be implemented on average. However, implementing this ratio may not be feasible in every case. Conversion ratios that are applicable when a large number of similar conversions occur simultaneously may not be practical when only one or two similar conversions occur at a time. DoD, CBO, and other organizations engaged in forecasting cost savings should account for such practical realities when developing estimates.

Plan for increased resistance to conversions if the conversions are designed to reduce military end strength. Military-to-civilian conversions that occurred between FY 2004 and FY 2010 were designed to make military personnel available for deployment. If the next wave of conversions is designed to reduce military end strength instead (as discussed by CBO), then OSD should plan for increased resistance by the services. Stronger guidance—perhaps in the form of targets for military-to-civilian conversions—may be necessary to achieve desired goals. Analysis of personnel data could be used to inform such guidance.

NOTES

¹ 10 U.S.C. 129(a), *General Policy for Total Force Management*.

² Secretary of Defense, *Department of Defense (DoD) Efficiency Initiatives*, memorandum, August 16, 2010; U.S. Government Accountability Office, *Critical Skills and Competency Assessments Should Help Guide DOD Civilian Workforce Decisions*, Washington, D.C., GAO-13-188, 2013; U.S. Congress, House of Representatives, Committee on Armed Services, *Civilian Workforce Requirements—Now and Across the Future Years Defense Program*, hearing before the Subcommittee on Readiness of the Committee on Armed Services, House of Representatives, One Hundred Twelfth Congress, second session, hearing held July 26, 2012, Washington, D.C.: U.S. Government Publishing Office, 2013.

³ Public Law 112-239, *National Defense Authorization Act for Fiscal Year 2013*.

⁴ 10 U.S.C. § 129(c), *Medical Personnel: Limitations on Reductions*; Public Law 111-84, *National Defense Authorization Act for Fiscal Year 2010*; Public Law 110-181, *National Defense Authorization Act for Fiscal Year 2008*.

⁵ CBO, *Options for Reducing the Deficit: 2014 to 2023*, Washington, D.C., Pub. No. 4664, November 2013.

⁶ CBO, *Replacing Military Personnel in Support Positions with Civilian Employees*, Washington D.C., Pub. No. 51012, December 2015.

⁷ CBO, 2013.

About This Report

The Director, Total Force Planning & Requirements, Office of the Under Secretary of Defense for Personnel and Readiness (OUSD[P&R]), asked the RAND Corporation to undertake a study titled “Facilitating Military-to-Civilian Conversions.” The objective of the research project was to identify the primary impediments to converting positions from military to civilian provision and to recommend changes to statutes, policies, and/or business practices that would facilitate these conversions. The project also examined past experiences with converting military positions and the research literature to identify lessons that could be used to inform future efforts. This report presents the key findings of this research. A more detailed account of the research methods and findings can be found in *U.S. Department of Defense Experiences with Substituting Government Civilian Employees for Military Personnel: Challenges and Opportunities*, by Jennifer Lamping Lewis, Edward G. Keating, Leslie Adrienne Payne, Brian Gordon, Julia Pollak, Andrew Madler, Hugh G. Massey, and Gillian Oak, RR-1282-OSD (available at www.rand.org/t/RR1282), 2016. This research should be of interest to U.S. Department of Defense personnel involved with manpower planning, civilianization, and managing the trade-offs between military and civilian personnel. It should also be of interest to the makers of laws and policies that govern performance of work by military personnel, government civilian employees, and contractors.

We thank Richard Robbins, Director, Total Force Planning & Requirements, OUSD(P&R), for his sponsorship of this research. We also thank Kirstin Austin and Thomas Hessel for serving as points of contact on this research project. RAND researchers spoke with a number of subject matter experts whose time, insights, and participation we greatly appreciate. We specifically thank Charles Denmark of the United States Air Force; Cheryl Cotton, Donna Geren, Michael Iwai, Jamie Karbacka, Ann McClung, and James McDonner of the United States Navy; and Curt Smolinsky and Michael Strobl of the Office of the Secretary of Defense. We also thank Adebayo Adedeji and Matthew Goldberg of the Congressional Budget Office and Gregory Parton of the United States Air Force for their assistance. Our RAND colleagues Charles Nemfakos and Daniel Tremblay provided ongoing insights and suggestions on this research project. John Winkler provided guidance as the Forces and Resources Policy Center director. We received constructive reviews of the larger report from Stanley Horowitz of the Institute for Defense Analyses, as well as from our RAND colleagues Shanthi Nataraj and Al Robbert. Sarah Meadows orchestrated the RAND National Defense Research Institute quality assurance process.

This research was conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the United Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the RAND Forces and Resources Policy Center, see www.rand.org/nsrd/ndri/centers/frp or contact the director (contact information is provided on the web page).

About the Authors

Jennifer Lamping Lewis is a full economist at the RAND Corporation and a member of the Pardee RAND Graduate School faculty. She specializes in game theory, market design, procurement competitions, and workforce management.

Edward G. Keating is a senior economist at the RAND Corporation, specializing in governmental economics issues including cost/benefit analysis, manpower compensation policies, aging military systems, working capital fund policy, outsourcing and privatization, and contracting policy.

Limited Print and Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law. This representation of RAND intellectual property is provided for noncommercial use only. Unauthorized posting of this publication online is prohibited. Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please visit www.rand.org/pubs/permissions.

For more information on this publication, visit www.rand.org/t/RR1282z1.

© Copyright 2016 RAND Corporation

www.rand.org



The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND®** is a registered trademark.