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## Introduction

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The defense acquisition workforce (AW) comprises military personnel, civilian employees of the Department of Defense (DoD), and contractors who perform functions that are related to the acquisition of goods and services for DoD. In 2006, RAND National Defense Research Institute began a collaboration with DoD to develop data-based tools to support analysis of the organic defense AW, which includes military and DoD civilians but not contractors. RAND published a report in 2008 that documented the construction of the data set and the analytical methods used to examine these data (Gates et al., 2008). The report also provided descriptive analyses of the organic AW based on data through fiscal year (FY) 2006. Each year, RAND generates updated summary information on AW gains and losses, for the AW as a whole and for subpopulations of the AW based on the methods described in the 2008 report. Over time, we refine and improve upon the methods to address new challenges and opportunities. The current report updates the earlier document.

### **The Acquisition Workforce Is Responsible for All Aspects of the Department of Defense Acquisition Process**

In response to the Defense Acquisition Workforce Improvement Act (DAWIA) of 1990, DoD has been tracking and reporting on the AW since 1992. The AW is responsible for planning, design, development, testing, contracting, production, introduction, acquisition logistics support, and disposal of systems, equipment, facilities, supplies, or services that are intended for use in, or support of, military missions. A key role of the AW is to provide oversight of the acquisition process. Military and DoD civilian personnel are flagged as part of the AW based on whether they fulfill one or more of these roles. Members of the AW can be found in many different organizations across DoD.

Members of the AW are grouped into career fields. The number and titles of these career fields have changed over time. In FY 2011, there were 13 main career fields:

- auditing
- business, cost estimating, and financial management<sup>1</sup>
- contracting
- facilities engineering
- industrial property management

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<sup>1</sup> This career field comprises the cost estimating and financial management career paths.

- communications and information technology
- life-cycle logistics
- quality assurance
- program management oversight and program management
- purchasing and procurement
- science and technology
- systems planning, research, development, and engineering (SPRDE)<sup>2</sup>
- test and evaluation engineering.

## Recent Challenges Include Conflicting Growth and Budgetary Demands

Our prior report was based on data through the end of FY 2006 and was published in 2008. Since that time, there have been important changes in DoD related to the management of the AW and the overall DoD civilian workforce. In April 2009, the Secretary of Defense announced a major defense AW growth initiative designed to increase the size of the civilian workforce by 20,000 between FYs 2008 and 2015. One-half of the planned growth would come from new hiring, and one-half from insourcing of contractor functions (DoD, 2010). The defense AW growth initiative responded to concerns that the size of the workforce was insufficient to meet DoD procurement demands, particularly if involved in major defense acquisition programs and contingency operations, and that DoD was using contractors to support core acquisition functions.<sup>3</sup> The growth initiative involved a strategic shaping effort that prioritized career fields, such as contracting and SPRDE, that are viewed as critical to improving acquisition outcomes (DoD, 2010, p. 1-5). Section 852 of the 2008 National Defense Authorization Act, Public Law 110-181, established the Defense Acquisition Workforce Development Fund, which provided funds to support recruitment and hiring of acquisition personnel.

Three years into the growth initiative, pressure to reduce DoD budgets and federal spending resulted in efforts to reevaluate workforce requirements (size), taking into consideration changes since 2008. In March 2011, DoD announced a freeze on the number of civilian workers, although an exception was made for recruitment and hiring supported by the Defense Acquisition Workforce Development Fund. The Marine Corps announced a 90-day civilian hiring freeze in December 2010, which was extended until January 2012, when it was replaced by a manage-to-payroll approach. This freeze encompassed the Marine Corps AW (Losey, 2010). The Air Force announced a 90-day civilian hiring freeze effective August 9, 2011, along with plans for strategic use of voluntary separation and retirement incentives. The Army announced plans to cut nearly 9,000 civilian jobs by October 2012 (Clark, 2011a; Clark, 2011b). Although the services have remained committed to the AW rebuilding efforts, it has yet to be determined how these broader pressures on defense budgets and the size of the civilian defense workforce will influence DoD's AW. GAO has urged DoD to align efforts sup-

<sup>2</sup> The SPRDE workforce currently comprises two separate career fields: SPRDE–Systems Engineering, and SPRDE–Program Systems Engineer. The former career field is roughly 100 times larger than the latter one. In our analysis, we combine these two career fields into a single SPRDE career field.

<sup>3</sup> The U.S. Government Accountability Office (GAO) designated defense contract management and defense weapon system acquisitions as “high risk” (GAO, 2008b). The report of the Acquisition Advisory Panel (2007) criticized government acquisition efforts for excessive use of noncompetitive approaches, and the Gansler Commission Report concluded that major changes were needed in acquisition functions that support expeditionary operations.

ported by the Defense Acquisition Workforce Development Fund with the overall AW plan and to develop outcome-oriented metrics for evaluating the effectiveness of the fund's efforts (GAO, 2012).

At the time of this writing, we continue to work collaboratively with DoD to improve the data and methodologies to make them more useful to DoD AW managers and to update the analyses as new data become available. In addition, we continue to explore new questions with the data we have and are working to obtain additional data, including data on the AW from across the federal government.

## Data and Methods

As Gates et al., 2008, describes, RAND has assembled a comprehensive data file that can support a DoD-wide analysis of DoD AW. The RAND data file comprises information drawn from several files that the Defense Manpower Data Center (DMDC) maintains:

- **DoD civilian personnel inventory file:** This file provides annual “snapshots” of each civilian employee, including his or her grade, location, and education level, as well as other demographic variables, as of September 30. The data from this file also include information on an individual's occupation, organization, pay plan, and years of service (YOS).
- **DoD civilian personnel transaction file:** The data from this file complement the inventory data by noting “transactions” for workers between inventory snapshots. The transactions of central interest to us were indicators of attrition, e.g., retirement, voluntary separation, and involuntary separation, as well as codes indicating whether an individual transferred to or from another federal government agency. We obtained civilian inventory and transaction data going back to FY 1980 for this work.
- **Military work experience file (WEX):** The WEX file contains information on anyone who has served in the U.S. military since 1975. This information includes rank, military service, active duty status, and occupation. We use these data not only to characterize the military AW but also to study the extent to which DoD civilian employees have prior military experience and the nature of that experience.
- **Acquisition workforce person file (DoD Instruction [DoDI] 5000.55 submission data) and the AW position file:** These files provide information on the individuals who are designated as part of the AW since FY 1992, as well as on the positions that DoD has designated as acquisition positions. The person file contains a record for each individual (both military and civilian) who was included in the service or agency submissions made in accordance with DoDI 5000.55. Each AW person record includes an AW position code and can thus be linked to the position data.

In the DMDC database, records can be linked across files in useful ways. For example, connections can be made between the military and civilian files or between the civilian inventory file and the acquisition person file. Moreover, searching across time is possible because of a unique identifier (a scrambled social security number) that is used consistently across files and years for a given individual.

Together, the DMDC files contain information on personnel, including their positions, assignments, ranks, pay, occupations, YOS, demographic characteristics, education, acquisition career fields, and acquisition certification level. By linking records across time and across files, we were able to examine movement into and out of the AW, movement between the DoD military and civilian workforces, and promotion and experience trajectories.

## The AW Count

As previously mentioned, our analysis uses data on DoD-wide AW the DMDC provided RAND that include information on individuals who are classified as part of the AW per DoDI 5000.55. That instruction provides guidance for the implementation of DAWIA, which among other things required DoD to track its AW. These data are often referred to as *DAWIA data*, and the number of employees the data capture is the *DAWIA count*.

Data on the DAWIA workforce are available from 1992 to the present in a way that allows us to link with other personnel information DoD maintains. For this reason, they are useful for analytical purposes. However, other methods for counting the AW have been used over time. The Packard Commission established a counting methodology, called the *acquisition organization workforce approach*, that counts all personnel employed by the 22 DoD acquisition organizations, regardless of occupation (DoD, Office of the Inspector General, 2006). The refined Packard counting system is a revision of the acquisition organization counting system that excludes some personnel who would not be expected to be involved in acquisition support functions (e.g., human resources personnel or administrative assistants). (Defense Acquisition Structures and Capabilities Review, 2007). The Packard and refined Packard workforce counts tended to be higher than the DAWIA counts because they include individuals who are not actually performing acquisition functions.

DoD reported results of both of these counting methodologies to Congress annually until FY 2004. Beginning with FY 2005, after extensive efforts to review and validate the way in which members of the AW are identified and counted, the DAWIA count has replaced the refined Packard count. DoD Inspector General has concluded that counts from FY 2004 and earlier are not verifiable (see DoD, Office of the Inspector General, 2006). These efforts to revise the definition of the AW resulted in a large number of recategorizations into and out of the AW in the early 2000s, as we described in Gates et al., 2008.

Because of these limitations to the workforce count information, readers are urged to use caution in interpreting trends related to the AW prior to 2004.

## Purpose

The purpose of this report is threefold. First, we document modifications and new approaches to the analysis that we have adopted since the publication of Gates et al., 2008. Second, we present updated descriptive information on the AW, applying these new methods to the most recent available data. This descriptive information provides an overview of how the factors described in this introduction, especially the AW growth initiative, have influenced the defense AW. Third, we describe how managers can use these tools and methods to explore workforce projections for the entire workforce or for subsets of the DoD AW (e.g., specific career fields

or agencies) under different scenarios, thereby identifying workforce segments that may be in need of some policy intervention.

## **Outline of Report**

The broader policy motivation for this workforce analysis is presented in full in Gates et al., 2008. In Chapter Two, we describe modifications to the analytical methods described in Gates et al., 2008. In Chapter Three, we present an updated overview of the civilian AW using data through FY 2011. Chapter Four provides workforce projections for the civilian AW for key subsets of the AW. Chapter Five presents an overview of the military AW, again using data through FY 2011. Chapter Six concludes. Appendix A provides an updated users' manual for the projection models and technical detail on the updated models. Appendix B summarizes AW gains and losses.

