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MOBILITY CAPABILITIES

DOD's Mobility Study Limitations and Newly Issued Strategic Guidance Raise Questions about Air Mobility Requirements

Statement of Cary Russell, Acting Director, Defense Capabilities and Management

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Highlights

Highlights of GAO-12-510T, a testimony before the Subcommittee on Seapower and Projection Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

Over the past 30 years, the Department of Defense (DOD) has invested more than $140 billion in its airlift and tanker forces. In 2010, DOD published its Mobility Capabilities and Requirements Study 2016 (MCRS-16), which was intended to provide an understanding of the range of mobility capabilities needed for possible military operations. In January 2012, DOD issued new strategic guidance, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, affecting force structure decisions. This testimony addresses GAO's previous findings on the MCRS-16 and air mobility issues to consider in light of DOD's new strategic guidance.

GAO's December 2010 report on the MCRS-16 (GAO-11-82R) is based on analysis of DOD's executive summary and classified report, and interviews with DOD officials.

What GAO Recommends

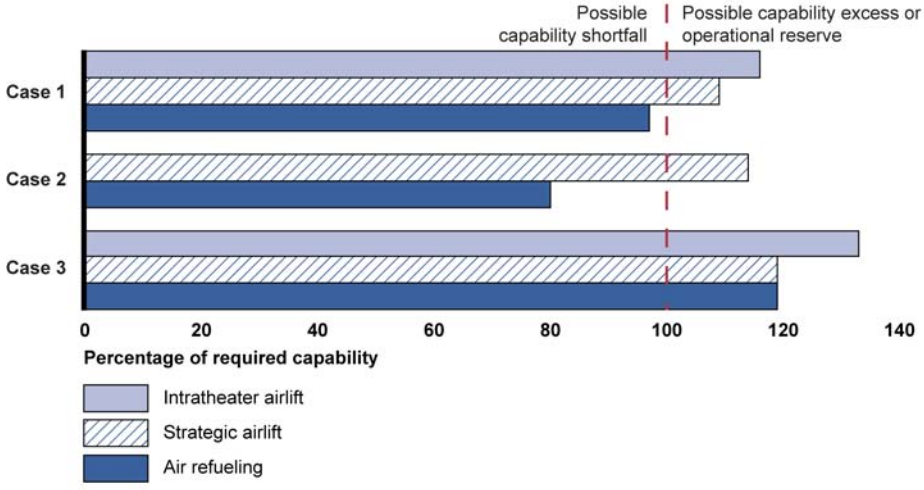
GAO previously recommended that DOD clearly identify shortfalls and excesses in the mobility force structure and the associated risks. DOD did not concur with the recommendations, stating that the MCRS-16 identified shortfalls and excesses and included a risk assessment. GAO disagreed, noting for example, that DOD's MCRS-16 study did not explicitly identify excess aircraft and did not include mobility system risk assessments when potential shortfalls existed.

View GAO-12-510T. For more information, contact Cary Russell, 404-679-1808, russellc@gao.gov

What GAO Found

The Mobility Capabilities and Requirements Study 2016 (MCRS-16) provided some useful information concerning air mobility systems—such as intratheater airlift, strategic airlift, and air refueling—but several weaknesses in the study raised questions about its ability to fully inform decision makers. In particular, the MCRS-16 did not provide decision makers with recommendations concerning shortfalls and excesses in air mobility systems. In evaluating capabilities, the MCRS-16 used three cases that it developed of potential conflicts or natural disasters and identified the required capabilities for air mobility systems. Based on data in the MCRS-16, GAO was able to discern possible shortfalls or potential capacity that could be considered excess or an operational reserve (see figure), even though the MCRS-16 was ambiguous regarding whether actual shortfalls or excess capabilities exist. It also did not identify the risk associated with potential shortfalls or excesses. Identifying the risk associated with specific mobility systems could help with decisions to allocate resources.

Figure: Potential Shortfalls and Excesses in Air Mobility Capabilities Derived from MCRS-16



Source: GAO analysis of DOD data.

The Department of Defense (DOD) issued new strategic guidance in January 2012, which is intended to help guide decisions regarding the size and shape of the force. In the past, DOD has translated strategic guidance into specific planning scenarios, which it used in studies (such as the MCRS-16) to generate requirements that inform force structure decisions. Based on the new strategic guidance, the Air Force has proposed reducing its mobility air fleet by 130 aircraft, which would leave 593 mobility aircraft in the airlift fleet. According to Air Force officials, the proposals will enable the Air Force to deliver the airlift capabilities required to implement the new strategic guidance and remain within funding levels. However, the Air Force's document that outlines its proposed aircraft retirements does not provide details of any analyses used to support the reductions. Given the new strategic guidance, it is unclear the extent to which the requirements developed from MCRS-16 are still relevant. In weighing the Air Force's proposal, decision makers would benefit from a clear understanding from DOD of the basis for the proposed aircraft retirements and DOD's ability to execute its new strategic guidance with its planned air mobility force structure.

March 7, 2012

The Honorable W. Todd Akin
Chairman
The Honorable Mike McIntyre
Ranking Member
Subcommittee on Seapower and Projection Forces
Committee on Armed Services
House of Representatives

Chairman Akin, Ranking Member McIntyre, and members of the subcommittee, I am pleased to be here today to discuss air mobility issues and supporting analyses. As we have previously reported, over the past 30 years, DOD has invested more than $140 billion in its airlift and tanker forces. In 2010, DOD completed the *Mobility Capabilities and Requirements Study 2016* (MCRS-16), which was to provide senior leaders with a detailed understanding of the range of mobility capabilities needed for possible future military operations by identifying the capabilities and requirements to support national strategy.[1] The MCRS-16 reported on several mobility issues, including intratheater airlift, strategic airlift, and air refueling in the context of three cases that included a mix of different types of potential conflicts and natural disasters. DOD concluded that, with few exceptions, the projected mobility capabilities in 2016 were sufficient to support the most demanding projected requirements. The MCRS-16 study was prepared in 2010 based on the defense strategy and planning scenarios current at that time. In January 2012, DOD issued new strategic guidance, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*.[2] In the past, DOD has translated strategic guidance into specific planning scenarios, which it has used in studies (such as the MCRS-16) to generate requirements that inform force structure decisions.

[1]To conduct the MCRS-16, DOD modeled a broad spectrum of military engagements that supported notional strategic operations using forces listed in the 2009 President's Budget with appropriate fiscal year 2010 adjustments and compared these capabilities with the requirements for the 2016 time frame. Based on the strategy in effect at the time, DOD considered the increased level of U.S. military engagements around the world and an increased reliance on airlift for moving equipment and supplies.

[2]DOD, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*. (Washington, D.C.: Jan. 3, 2012).

My statement today will address our previous findings on the MCRS-16,[3] with an emphasis on air mobility issues, as well as air mobility issues to consider in light of DOD's January 2012 strategic guidance on defense priorities. To prepare this testimony, we relied on the findings of our December 2010 review of the MCRS-16. For that report, we reviewed the unclassified executive summary and the classified report of the MCRS-16, the study's terms of reference, and study plan. We focused our December 2010 report on the extent to which the MCRS-16 met its study objectives. In conducting our review, we met with the MCRS-16 study leaders to obtain further context and information concerning the study as it was presented in DOD's report. For this testimony statement, we also reviewed DOD's January 2012 strategic guidance on defense priorities and the Air Force's proposed force structure changes, and contacted officials at the Office of the Secretary of Defense and Air Mobility Command. We conducted work for our report in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provided a reasonable basis for our findings and conclusions based on our audit objective.

Background

MCRS-16

DOD's MCRS-16, which was completed in February 2010, was to provide senior leaders with a detailed understanding of the range of mobility capabilities needed for possible future military operations and help leaders make investment decisions regarding mobility systems. The study was driven by strategy current at the time. The study scope included, among other things, the way changes in mobility systems affect the outcomes of major operations and an assessment of the associated risks. MCRS-16 had several objectives, including to determine capability

[3]GAO, *Defense Transportation: Additional Information Is Needed for DOD's Mobility Capabilities and Requirements Study 2016 to Fully Address All of Its Study Objectives*, GAO-11-82R (Washington, D.C.: Dec. 8, 2010).

shortfalls[4] (gaps) and excesses[5] (overlaps) associated with programmed mobility force structure, provide a risk assessment, and identify the capabilities and requirements to support national strategy.

In order to assess mobility capabilities, DOD officials responsible for the MCRS-16 used three cases to evaluate a broad spectrum of military operations that could be used to inform decisions regarding future mobility capabilities. The three cases are described below:

- **Case 1**: U.S. forces conduct two nearly simultaneous large-scale land campaigns and at the same time respond to three nearly simultaneous homeland defense events.
- **Case 2**: U.S. forces conduct a major air/naval campaign concurrent with the response to a large asymmetric[6] campaign and respond to a significant homeland defense event.
- **Case 3**: U.S. forces conduct a large land campaign against the backdrop of an ongoing long-term irregular warfare[7] campaign, and respond to three nearly simultaneous homeland defense events.

Each case required a certain percentage of mobility airlift capacity—including strategic airlift (C-17s, C-5s), intratheater airlift (C-130s, C-27s), and air refueling aircraft (KC-135s, KC-10s)—that DOD would employ on the most demanding day of the case. If DOD had fewer aircraft than

[4]According to DOD, a capability gap is the inability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks. The gap may be the result of no existing capability, lack of proficiency or sufficiency in existing capability, or the need to replace an existing capability. A shortfall may result from a lack of forces, equipment, personnel, materiel, or capability, and is reflected as the difference between the required resources and those available to a combatant commander. When a lack of resources would adversely affect the command's ability to accomplish its mission, it is described as a shortfall.

[5]For this testimony, overlap and excess are used interchangeably. An overlap (excess) can occur when the military seeks to achieve a desired effect by performing tasks under specified standards and conditions and redundant capabilities exist to accomplish a mission or task and the overlap is determined to be operationally undesirable or excessive.

[6]In military operations, the term asymmetric means the application of dissimilar strategies, tactics, capabilities, and methods to circumvent or negate an opponent's strengths while exploiting his weaknesses.

[7]Irregular warfare is a violent struggle among state and nonstate actors for legitimacy and influence over the relevant population(s).

required, a potential shortfall would exist and there could be a risk that the mission might not be accomplished. If DOD had more aircraft than required, a potential excess could exist, and there could be risk that resources could be expended unnecessarily on a mobility capability.

DOD's January 2012 Strategic Guidance on Defense Priorities

In January 2012, DOD issued *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, which describes the projected security environment and the key military missions for which DOD will prepare. DOD may make force and program decisions in accordance with the strategic approach described in this guidance, which could differ from the guidance—the *National Military Strategy*—that was used by the MCRS-16 to determine requirements. The new strategic guidance is intended to help inform decisions regarding the size and shape of the force, recognizing that fiscal concerns are a national security issue. To support the new strategic guidance and remain within funding constraints, the Air Force has proposed changes concerning the retirement of aircraft in its airlift fleet.[8] Specifically, in February 2012, the Air Force proposed to

- Retire the oldest 27 C-5 aircraft, thereby reducing the fleet to 275 strategic airlift aircraft—which, according to the Air Force, would consist of 223 C-17s[9] and 52 C-5s.[10]
- Retire the 65 oldest C-130 aircraft—the primary aircraft used in DOD's intratheater airlift mission—thereby reducing the fleet to 318 C-130s.[11]
- Retire or cancel procurement of all 38 planned C-27 aircraft, which were intended to meet time-critical Army missions.[12]

[8]The Air Force has also proposed reductions in its air refueling fleet.

[9]DOD's January 2012 *Budget Priorities and Choices* document identifies a remaining force of 222 C-17 aircraft, which differs from the remaining 223 C-17s identified in the Air Force's February 2012 *Force Structures Changes* document.

[10]The C-5 Galaxy is one of the largest aircraft in the world and the largest airlifter in the Air Force inventory. The aircraft can carry a fully equipped combat-ready military unit to any point in the world on short notice and then provide the supplies required to help sustain the fighting force. The C-5 can carry outsize and oversize cargo and has a greater capacity than any other airlifter.

[11]The C130 is a medium-range, tactical airlift aircraft designed primarily for transport of cargo and personnel within a theater of operations. Variants of the C-130 perform other missions including rescue and recovery, air refueling, special operations, fire-fighting and weather reconnaissance.

DOD Did Not Clearly Identify Some Important Mobility Issues in the MCRS-16 and Its New Strategic Guidance Raises Questions

While the MCRS-16 included some useful information concerning air mobility systems, the report did not clearly meet two of its objectives because it did not provide decision makers with specific information concerning (1) shortfalls and excesses associated with the mobility force structure or (2) risks associated with shortfalls or excesses of its mobility capabilities. Moreover, the MCRS-16 generally did not make recommendations about air mobility capabilities. These weaknesses in the MCRS-16 raise questions about the ability of the study to provide decision makers with information needed to make programmatic decisions. In addition, DOD's January 2012 strategic guidance could affect its air mobility requirements. I will first address the issues related to DOD's MCRS-16, and then turn to a discussion of the new strategic guidance.

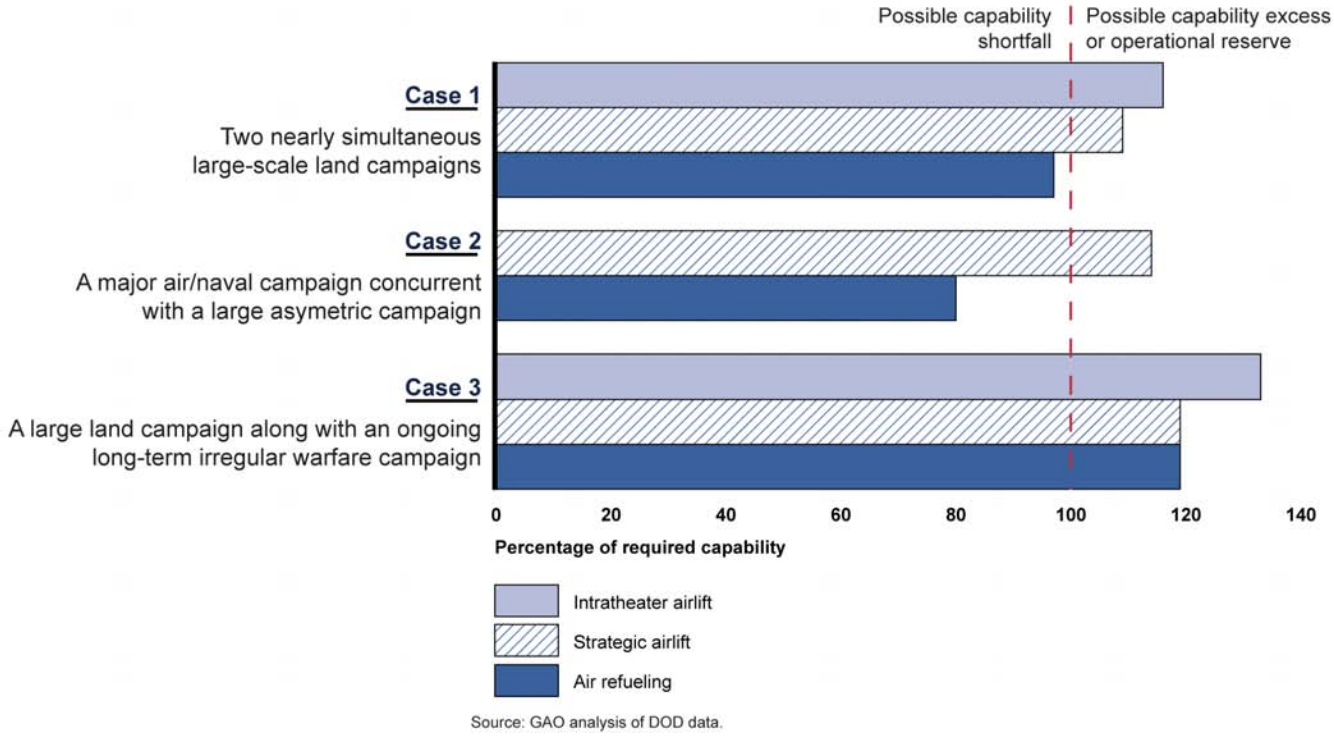
Study Did Not Clearly Identify Shortfalls and Excesses in Air Mobility Systems

The MCRS-16 did not meet its objective to identify shortfalls and excesses in most of its assessments of mobility systems. For each of the three cases of potential conflicts or natural disasters DOD used in the MCRS-16, the department identified the required capabilities for air mobility systems. However, the MCRS-16 stopped short of explicitly stating whether a shortfall or excess existed. Moreover, it did not make recommendations regarding the need for any changes to air mobility assets based on any shortfalls or excesses. Using DOD data from the MCRS-16, we were able to discern possible shortfalls or potential capacity that could be considered excess or used as an operational reserve even though the MCRS-16 report was ambiguous regarding whether actual shortfalls or excess capabilities existed (see figure).[13]

[12]The C-27 Spartan is a mid-range, multifunctional aircraft. Its primary mission is to provide on-demand transport of time-sensitive, mission-critical supplies and key personnel to forward-deployed Army units, including those in remote and austere locations. Its mission also includes casualty evacuation, airdrop, troop transport, aerial sustainment, and homeland security.

[13]Operational reserves can be an emergency reserve of men or materiel established for the support of a specific operation.

Figure: Potential Shortfalls and Excesses in Air Mobility Capabilities Derived from the MCRS-16



Source: GAO analysis of DOD data.

Note: Case two did not include an intratheater airlift requirement.

As shown in the figure, the MCRS-16 determined that in each case, there was unused strategic airlift capacity, but the study did not specifically state whether the unused capacity represented excesses or identify excesses by aircraft type. When an excess exists, decision makers need to know which aircraft and how many could be retired. Specifically, the MCRS-16 did not identify the required number of C-5s or excesses of C-5 aircraft; but at the time of our report, the Air Force stated its intention to seek the retirement of 22 C-5s, which it increased to 27 and proposed again in February 2012. Furthermore, the MCRS-16 did not identify the most combat-effective or the most cost-effective fleet of aircraft even

though DOD had previously stated that the MCRS-16 would set the stage to address the cost-effectiveness of its strategic aircraft.[14]

Decision makers rely on studies such as the MCRS-16 so that they can make informed choices to address mobility shortfalls and excesses. In our December 2010 report, we recommended that DOD explicitly identify the shortfalls and excesses in the mobility systems that DOD analyzed for the MCRS-16 and provide this additional analysis to DOD and congressional decision makers. In commenting on our draft report, DOD disagreed with our recommendations, stating that the MCRS-16 explicitly identifies shortfalls and excesses in the mobility system. DOD identified strategic airlift as an example of an excess. While the MCRS-16 showed that there was unused capacity associated with strategic airlift, it was not clear from the study whether this unused capacity could serve as an operational reserve. If the study had clearly identified an excess in strategic lift capabilities, decision makers may have chosen to retire aircraft and reallocate resources to other priorities or to keep an operational reserve to militate against unforeseen events. Similarly, if the study had identified a shortfall in strategic lift capabilities, decision makers may have chosen to accept the operational risk or sought to address the shortfall by increasing capabilities. DOD has not taken action based on our recommendation, but we continue to believe that explicitly identifying the shortfalls and excesses in mobility systems is useful to decision makers in making programmatic decisions.

Study Did Not Identify Associated Risks of Shortfalls or Excesses in Air Mobility Systems

The MCRS-16 also did not clearly achieve its study objective to provide risk assessments.[15] Assessing risk related to shortfalls and excesses is important—the risk associated with shortfalls is that the mission might not be accomplished, while the risk associated with excesses is that resources may be expended unnecessarily on a mobility capability. However, the MCRS-16 did not include risk assessments of airlift

[14]GAO, *Defense Acquisitions: Timely and Accurate Estimates of Costs and Requirements Are Needed to Define Optimal Future Strategic Airlift Mix*, GAO-09-50 (Washington, D.C.: Nov. 21, 2008).

[15]According to the *National Defense Strategy* in effect at the time of the study, risk assessment is an essential part of balancing risks, given limited resources, and requires identifying the potential for damage to national security combined with the probability of occurrence and a measurement of the consequences should the underlying risk remain unaddressed.

systems. For example, the MCRS-16 showed potential excesses in strategic and intratheater aircraft but did not identify the risk associated with these potential excesses. Furthermore, the MCRS-16 identified a reduced intratheater airlift fleet (401 C-130s) in comparison with the previous fleet (a maximum of 674 C-130s), but it did not describe the level of risk associated with this reduced fleet size.[16] Concerning air refueling, the MCRS-16 reported that airborne tanker demand exceeded tanker capacity by 20 percent in MCRS-16 case two but did not identify the risk associated with that potential shortfall.

In our December 2010 report, we recommended that DOD provide a risk assessment for potential shortfalls and excesses and provide this additional analysis to department and congressional decision makers. DOD disagreed, stating that MCRS-16 included a risk assessment which links the ability of mobility systems to achieve warfighting objectives. Therefore, DOD has not taken action on this recommendation. While warfighting risk metrics can inform decision makers concerning overall mobility capabilities, decision makers would benefit from knowing the risk associated with particular mobility systems as they make force structure decisions. Quantifying the risk associated with specific mobility systems could help with decisions to allocate resources, enabling decision makers to address the most risk at the least cost.

DOD's New Strategic Guidance May Affect Required Air Mobility Capabilities

In January 2012, DOD issued new strategic guidance, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, that will help guide decisions regarding the size and shape of the force. The strategic guidance is to ensure that the military is agile, flexible, and ready for the full range of contingencies. However, the strategic guidance includes changes from previous strategy—for example, U.S. forces will no longer be sized to conduct large-scale, prolonged stability operations.[17] In the past, DOD has translated strategic guidance into specific planning

[16]In 2005, DOD's *Mobility Capabilities Study* described a fleet containing a maximum of 674 C-130s as a moderate risk fleet. By comparison, DOD's MCRS-16 reported that a fleet of 401 C-130s exceeded demands.

[17]DOD defines stability operations as an overarching term encompassing various military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power to maintain or reestablish a safe and secure environment, provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief.

scenarios, which DOD has used in studies (such as the MCRS-16) to generate requirements that inform force structure decisions. Based on the new strategic guidance, the Air Force has proposed changes to the mobility air fleet, including the retirement or cancellation of procurement of 130 mobility aircraft. According to Air Force officials, the proposals ensure that the Air Force can deliver the capabilities required by the new strategic guidance and remain within funding levels. However, the Air Force's February 2012 document that outlines its proposed aircraft retirements does not provide details of any analyses. Given the new strategic guidance—which articulates priorities for a 21st century defense—it is unclear the extent to which the requirements developed from the MCRS-16 are still relevant. In weighing the Air Force's proposal, decision makers will require additional information concerning what types of potential military operations are envisioned by the strategic guidance and to what extent DOD has analyzed its planned force structure using cases that reflect the new strategic guidance.

Concluding Remarks

In conclusion, the MCRS-16 study did not fully provide congressional decision makers with a basis for understanding what mobility systems are needed to meet requirements, how many are needed, and what are the risks of having too many or not enough of each aircraft to meet defense strategy. While DOD disagreed with our recommendations, we continue to believe that the study missed opportunities to identify specific shortfalls and excesses and did not provide associated risk assessments. Further, the MCRS-16 study was completed more than 2 years ago using defense planning guidance in effect at that time. With DOD's newly issued strategic guidance on defense priorities, the department's potential scenarios may have changed. Decision makers would benefit from a clear understanding from DOD of the basis for the proposed aircraft retirements and DOD's ability to execute its new strategic guidance with its planned air mobility force structure.

Chairman Akin and Ranking Member McIntyre, and members of the subcommittee, this concludes my prepared statement. I am happy to answer any questions that you may have at this time.

Contacts and Acknowledgments

For further information regarding this testimony, please contact Cary Russell at (404) 679-1808 or russellc@gao.gov. In addition, contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals who made key contributions to this testimony are Alissa H. Czyz, Assistant Director, James P. Klein, Ronald La Due Lake, Richard B. Powelson, Michael C. Shaughnessy, Jennifer B. Spence, Amie M. Steele, Joseph J. Watkins, and Stephen K. Woods.