



CHILDREN AND FAMILIES  
EDUCATION AND THE ARTS  
ENERGY AND ENVIRONMENT  
HEALTH AND HEALTH CARE  
INFRASTRUCTURE AND  
TRANSPORTATION  
INTERNATIONAL AFFAIRS  
LAW AND BUSINESS  
NATIONAL SECURITY  
POPULATION AND AGING  
PUBLIC SAFETY  
SCIENCE AND TECHNOLOGY  
TERRORISM AND  
HOMELAND SECURITY

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis.

This electronic document was made available from [www.rand.org](http://www.rand.org) as a public service of the RAND Corporation.

Skip all front matter: [Jump to Page 1](#) ▼

## Support RAND

[Purchase this document](#)

[Browse Reports & Bookstore](#)

[Make a charitable contribution](#)

## For More Information

Visit RAND at [www.rand.org](http://www.rand.org)

Explore the [RAND Corporation](#)

View [document details](#)

## Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND electronic documents to a non-RAND website is prohibited. RAND electronic documents are protected under copyright law. 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 see [RAND Permissions](#).

This report is part of the RAND Corporation research report series. RAND reports present research findings and objective analysis that address the challenges facing the public and private sectors. All RAND reports undergo rigorous peer review to ensure high standards for research quality and objectivity.

# The Posture Triangle

## A New Framework for U.S. Air Force Global Presence

Stacie L. Pettyjohn, Alan J. Vick

RAND Project AIR FORCE

Prepared for the United States Air Force  
Approved for public release; distribution unlimited



The research described in this report was sponsored by the United States Air Force under Contract FA7014-06-C-0001. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

**Library of Congress Cataloging-in-Publication Data** is available for this publication.

ISBN: 978-0-8330-8167-4

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

**Support RAND**—make a tax-deductible charitable contribution at [www.rand.org/giving/contribute.html](http://www.rand.org/giving/contribute.html)

**RAND**® is a registered trademark.

© Copyright 2013 RAND Corporation

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 RAND documents to a non-RAND website is prohibited. RAND documents are protected under copyright law. 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 see the RAND permissions page ([www.rand.org/pubs/permissions.html](http://www.rand.org/pubs/permissions.html)).

RAND OFFICES

SANTA MONICA, CA • WASHINGTON, DC

PITTSBURGH, PA • NEW ORLEANS, LA • JACKSON, MS • BOSTON, MA

DOHA, QA • CAMBRIDGE, UK • BRUSSELS, BE

[www.rand.org](http://www.rand.org)

## Summary

---

U.S. Air Force (USAF) global posture—its overseas forces, facilities, and arrangements with partner nations—is a study in contrasts. On the one hand, there are those major bases where combat forces have been permanently deployed since the end of World War II. These bases are characterized by superb infrastructure, a large USAF presence (typically including dependents), and a substantial force element (typically a wing headquarters and associated units). There were dozens of these bases at the height of the Cold War, but relatively few exist today. For example, as of October 2013 there are only seven fighter bases abroad: Royal Air Force (RAF) Station Lakenheath in the United Kingdom; Spangdahlem Air Base (AB) in Germany; Aviano AB in Italy; Osan and Kunsan ABs in South Korea; and Misawa and Kadena ABs in Japan. In contrast to the relatively small number of major bases concentrated in a few countries, the USAF has dozens of smaller facilities hosting other activities. For example, there are early warning radars, space tracking, and communication facilities, such as Thule AB, Greenland; forward operating locations (FOLs), such as Kandahar Airfield, Afghanistan; en route airfields for transportation aircraft, such as Yokota AB, Japan; and small USAF training detachments rotating through airfields, such as in Lask, Poland.

This global posture faces a variety of political, fiscal, and military challenges. Within the United States, the Cold War consensus in support of a large overseas presence has eroded, while a clear alternative vision has yet to emerge. Fiscal pressures led Department of Defense (DoD) leadership to propose another round of domestic base closings in 2012, but members of Congress made clear that reductions would have to occur abroad before they would support base closings at home. Key partner nations, such as the United Kingdom, Germany, South Korea, and Japan, all remain strongly committed to retaining U.S. bases, but the broader overseas political climate presents greater risks to access. Regime change, democratization, growing nationalism, and domestic politics in partner nations together have created a climate less conducive to the permanent deployment of large foreign military forces. Finally, on the military front, emerging adversary precision long-range strike systems, such as China's large conventional ballistic missile force, present significant threats to forward bases.

USAF leaders face significant choices as they adapt global posture to these new conditions. This report is intended to inform their deliberations on global posture by addressing four fundamental questions about USAF force posture:

1. Why does the USAF need a global posture?
2. Where does the USAF need basing and access?
3. What types of security partnerships minimize peacetime access risk?
4. How much forward presence does the USAF require?

To answer these questions, we pursued several lines of research. First, we developed a logical framework—the posture triangle—to link U.S. national security requirements to specific types of posture. Second, we assessed the utility of dozens of airfields to meet mission demands for nine diverse scenarios. Third, we integrated our results with analysis conducted in previous (FY 11) research for the USAF—which together cover almost 30 scenarios and over 600 airfields. Fourth, we developed a method to assess peacetime access risk. Finally, we used the posture triangle framework to offer insights on sizing USAF overseas forces. Our research findings are presented below, organized around the four posture questions.

## Key Findings

### *Why Does the USAF Need a Global Posture?*

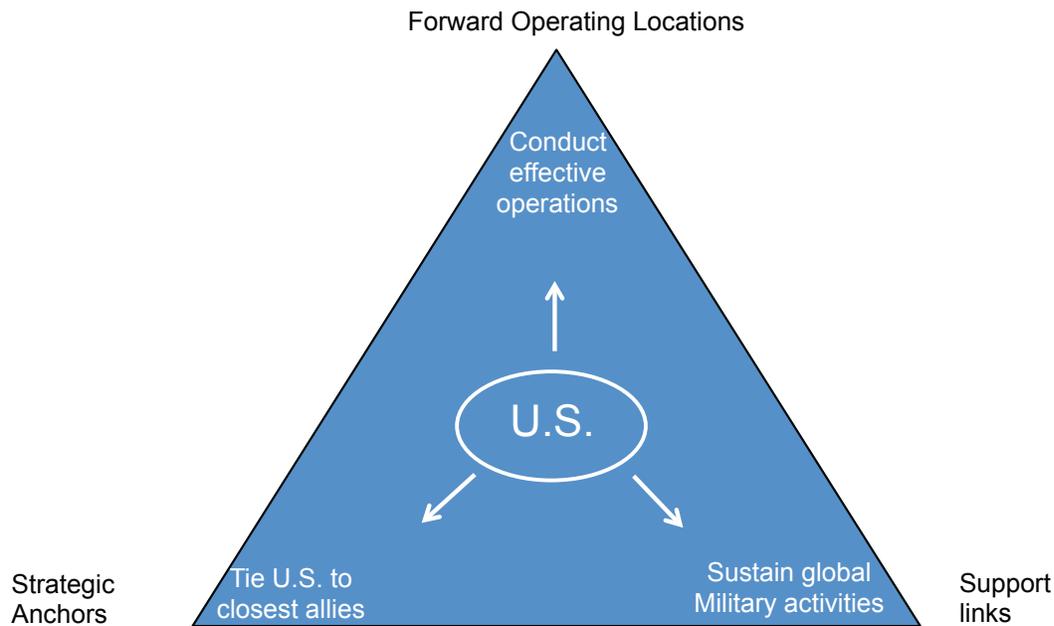
U.S. geography and overseas territories convey significant military advantages, but they alone are insufficient to meet three critical U.S. security requirements: (1) maintain security ties to close partners and key regions, (2) create and sustain operational effects, and (3) sustain global military activities.

For the first requirement, since the end of World War II the United States has relied on some type of enduring military presence to maintain these ties to our closest partners. Although U.S. military presence at these “strategic anchors” will evolve and at times may be modest in size, there is a world of difference between an enduring presence and none. Returning U.S. forces home may be attractive in theory, but U.S. experience since World War II confirms that it is extremely difficult to accomplish reassurance, deterrence, and regional stability missions with forces based exclusively in the United States.

Regarding the second national security requirement, U.S. territory alone is insufficient to conduct sustained operations outside of the western hemisphere. Access to FOLs on foreign territory is needed to generate operational effects. This is true for all four services. With respect to USAF force structure, current aircraft designs lack the range and speed to conduct sustained global round-trip missions from U.S. territory alone. Even long-range bombers are dependent on aerial refueling for many missions, and there are significant limits to air refueling support conducted exclusively from U.S. soil. Future technological breakthroughs may change this conclusion, but aircraft expected to dominate USAF force structure over the next 20 to 30 years are highly dependent (either directly or indirectly) on access to forward facilities.

Finally, to sustain global military activities, access to foreign territory is necessary to host support links. The links—en route airfields, ports, logistics facilities, and communications and early warning sites—are all constrained by either the range and endurance of the forces they support or other geographically driven factors (e.g., for early warning radars). Figure S.1 brings together these requirements and activities into a conceptual framework that we call the posture triangle.

**Figure S.1. The Posture Triangle**

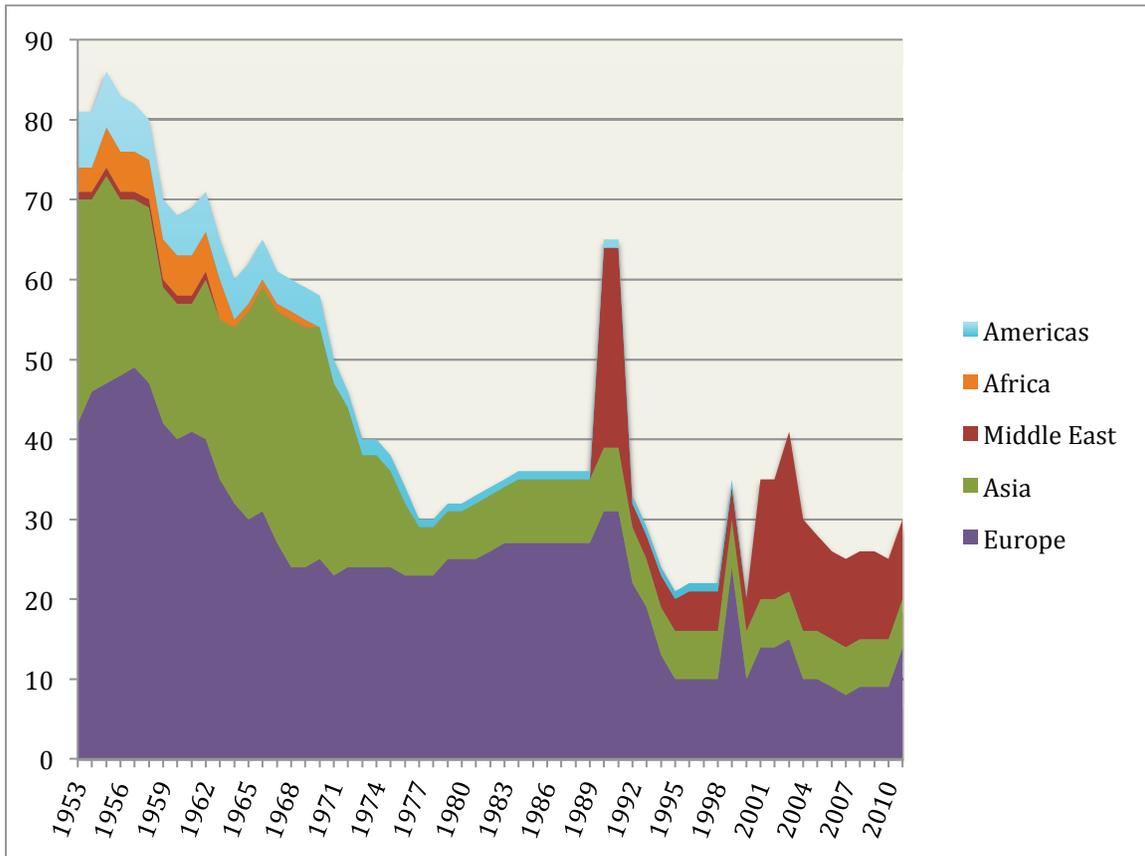


***Where Does the USAF Need Access and Basing?***

Our analysis, which considered ongoing activities and operations, key relationships, and the demands of almost 30 diverse scenarios, identified 13 strategic anchor countries, 11 basing clusters, and 35 en route airfields as particularly valuable.

If we do some modest rounding, this analysis suggests a rough rule of thumb for planners: 12-12-36. That is, as the USAF plans for future demands on the force, it should expect to be called upon to maintain forces and facilities in up to a dozen strategic anchor countries, to have the capacity to conduct operations from FOLs in roughly a dozen basing clusters, and to require en route airfields in about three dozen locations. Although this may sound like a large posture, when compared with the past, 12-12-36 is relatively small (see Figure S.2). Moreover, the USAF peacetime presence at most of the en route locations is minimal, and there is no peacetime presence at most forward locations. Also, the specific demands on the USAF at these locations vary greatly.

Figure S.2. Major USAF Bases Overseas, 1953–2011



For example, where another service is not meeting U.S. strategic anchor needs, the USAF might deploy fighter aircraft; tankers; intelligence, surveillance, and reconnaissance (ISR) platforms; other capabilities; or a composite organization combining all these elements. FOL demands vary across missions and platforms. They may be met in some cases by existing airfields, whereas in others U.S. and partner nations may need to make selected investments in operating surfaces, parking, fuel systems, or other infrastructure. Finally, although the USAF requires a few high-capacity mobility hubs, such as Ramstein AB in Germany, the majority of locations in the current air mobility en route system place quite modest demands on USAF resources because they either have no permanent staff or the staffs are quite small. Additionally, most of these airfields are not owned or maintained by the USAF. They are either commercial, sister service, or partner nation airfields. This is a great bargain when the small investment in personnel is compared with the operational versatility and resilience that is gained from regular access to these facilities.

### *What Types of Security Partnerships Minimize Peacetime Access Risk?*

This study developed an access risk metric based on regime type and the nature of the basing relationship. Domestic political institutions play a large role in a host nation's propensity to contest U.S. bases and access, with consolidated democracies the most dependable, nonconsolidated democracies less reliable, and authoritarian regimes the most problematic. Although regime type influences the reliability of peacetime access, other factors, including differing ideational motivations, strategic perspectives, and bargaining incentives, are key to understanding access risk.

We argue that a second variable—the type of access relationship—captures these different factors and significantly impacts the level of risk. Access relationships fall into one of three categories: a desire for material benefits (transactional), a shared perception of threat (mutual defense), or a deep security consensus (enduring partnership). In the transactional model, the host government makes bases on its territory available to secure material benefits in the form of rents, economic assistance, or arms sales. Compensation-driven access creates an unstable dynamic, because the host nation has every incentive to highlight problems associated with the U.S. presence to extract larger payments. A mutual defense relationship, in contrast, is built on a shared threat perception. This is a stable foundation for cooperation as long as the U.S. presence remains focused on countering the mutual security challenge. This is the most frequent reason nations give the United States access. In this relationship, however, the United States is likely to encounter difficulties if it tries to use its bases or forces for purposes unrelated to the mutual threat. The most stable relationship is the enduring partnership. The countries in this category all initially granted the United States basing rights for a reason (either shared threat or compensation) that has since disappeared. Yet, these nations continue to host U.S. forces because of an elite security consensus that the U.S. military plays a stabilizing role in the world and that the host nations have broad shared interests that are advanced by hosting U.S. forces.

We found that regime type and access relationship interact with one another and that particular combinations are especially stable or volatile. For instance, to date all of the United States' enduring partners have been consolidated democracies. Well-entrenched democratic institutions make it difficult for governments to modify or abandon existing basing agreements, while the shared identity fostered by a common form of government embeds U.S. access in a broader set of security cooperation activities. The second most durable type of access is based on a shared threat with consolidated democracies. Only one country in this category (France, 1966) has evicted U.S. forces, although the nature of post-Cold War relationships may make this somewhat more common in the future. By contrast, the least stable combinations involve authoritarian states that enter into transactional relationships with the United States. In this situation, dictators who are unfettered by institutional constraints can arbitrarily threaten to evict U.S. forces unless their terms are met. As a result, these relationships are unpredictable, and

access is always in question. Autocrats who are interested only in compensation have entirely revoked U.S. access more than any other type of regime and access relationship.

### *How Much Forward Presence Does the United States Require?*

It is much easier to identify the benefits of forward presence, both political and military, than to quantify how large a force is required to meet national security objectives. Deterrence, reassurance, and regional stability objectives are strongly tied to perceptions of U.S. capabilities and will. U.S. capability and will are both demonstrated through the forward deployment of forces that possess relevant capabilities in numbers that are generally recognized as significant. For example, a U.S. Navy (USN) carrier strike group, a U.S. Marine Corps expeditionary brigade, a U.S. Army brigade combat team, or a USAF wing are all widely recognized as significant combat formations and proof of a serious U.S. commitment to the partner. Where threats are more limited or there are political sensitivities, smaller deployments (e.g., a Patriot air defense battery or battalion) may meet such needs. That said, there is no authoritative means to show how variations in force size (e.g., adding or subtracting a few fighter squadrons) enhance or detract from these higher-level goals.

In contrast, theater campaign plan (TCP) requirements are readily quantified, and the effects of force size changes can be shown in theater combat simulations. Although this may appear to offer a means to size forward forces, in practice it is problematic. Because DoD and the military services use multiple “requirements” processes in force planning, there is a common perception that the type and size of permanently deployed forward forces is the product of such a process. That isn’t quite the case. Campaign plan requirements change much more often than force posture does. Force posture is extremely resistant to change, due to the complex interplay of three factors: the U.S. planning, programming, and budgeting process; domestic political dynamics in both the United States and the host country; and the intricacies of negotiations between sovereign nations. For host nations, changes (whether expansion or shrinkage) in the type, size, and location of foreign forces have strategic implications: Enhancements may be viewed as provocative by some constituencies, while reductions may be seen by others as undermining deterrence. Major force changes also raise a host of local concerns about land use, safety, noise, and economic and social impacts. For these reasons, permanent force changes are usually relatively small, with large changes occurring only rarely. Given this reality, theater campaign planners can successfully make the case to retain forward forces because of their value but rarely can initiate major changes. Thus, forward force size is typically an input to rather than output of this process. To the extent that the TCP identifies additional force requirements, they would be deployed during a crisis period from the United States or other regions.

So how should the United States size forward forces? We suggest a multifaceted approach. First, where current forward forces can be shown as vital to meeting TCP requirements, they should be left in place. Second, where enduring partners show a strong desire to maintain current forces, DoD should seek to maintain a concrete symbol of U.S. commitment and capability,

whether an Army or Marine Corps brigade, USAF wing, or substantial naval capability. The long-term benefits from these relationships greatly exceed the costs of maintaining what are now modest deployments. In these cases, the United States and the host nation should work together to evolve the forces and facilities in ways that are cost-effective in meeting both nations' security objectives. The USAF should expect a continuing demand for wing-size deployments in many strategic anchor countries. In some cases, a larger permanent presence will be called for; other partners (e.g., Australia) will prefer a smaller footprint. Third, DoD, combatant commands, and the services should explicitly embrace a capabilities-based approach in determining overseas force size. This approach would seek to identify key operational metrics to determine the type and size of forces desired in a given region. In some cases (e.g., U.S. European Command and U.S. Africa Command), forces based in one command might be the primary force provider for another.

## Recommendations

- **Use an integrated framework to explain global posture.** Although DoD posture documents offer thoughtful, regionally based justifications for U.S. posture, elite opinion appears to be increasingly skeptical of such arguments. One possible explanation is the lack of an integrated framework for understanding global posture more broadly. Such a framework should explicitly demonstrate how specific elements of posture are needed to meet specific national security goals. We developed the posture triangle as a framework that can incorporate both qualitative and quantitative inputs and answer fundamental posture questions, ranging from “Why are we abroad?” to “How many bases are required?” The framework is intended to be a useful tool for both internal DoD planning and for public outreach. We recommend that DoD and the USAF either incorporate this framework into future posture documents and processes or develop their own approach. Either way global posture needs to be explained and justified within a framework that goes beyond arguments that are particular to a given country or region.
- **Maintain strategic anchor locations in key regions and with enduring partners.** An enduring U.S. military presence in key nations and regions contributes to regional stability, deterrence of potential foes, and reassurance of partners and allies. The size and type of presence should be tailored to the particular needs of the host nation and United States and may include one, some, or all U.S. services. In many cases, the permanent presence may be quite small, and in all cases rotational forces can (and do) supplement those permanently deployed abroad. We identify the United Kingdom, Germany, Italy, Spain, Japan, Korea, and Australia as top-tier strategic anchors—countries that have hosted permanent and often large U.S. facilities for 50 or more years. Kuwait, Bahrain, Qatar, and the United Arab Emirates are strategic anchor locations in the Persian Gulf and key partners in regional stability efforts. In Southeast Asia, Singapore has long hosted key USN logistics facilities and is now hosting USN littoral combat ships on rotational deployments. Finally, the Philippines, a Cold War-era strategic anchor for the United States, may once again play that role if current negotiations produce a new agreement that expands U.S. access to ports and airfields.

- **Expand access to potential forward operating locations in key regions.** During the Cold War, USAF bases such as Ramstein AB in Germany or Kadena AB in Japan played dual roles as FOLs and as part of the strategic anchor joint military presence. Today, we see FOL and strategic anchor demands diverging for two reasons. First, emerging long-range precision-strike capabilities in countries such as China and Iran will increasingly constrain use of the most forward bases as FOLs. Many bases that play vital roles as strategic anchors during peacetime may be limited in effectiveness during some phases of conflicts. This suggests a growing role for dispersal base FOLs to, at minimum, supplement forward bases during the most intense phases of combat. Second, existing strategic anchor locations are too few in number and too geographically concentrated to meet all U.S. needs for forward airfields. For example, there are no strategic anchors in Africa. To better prepare the USAF for potential operations across a wide range of scenarios, we recommend working with partner nations to identify and selectively develop FOLs in 11 “basing clusters.” Most of these would have no enduring U.S. presence. Periodic small training visits or exercises with the host nation would typify the U.S. presence.
- **Use basing clusters to minimize access risk.** As noted above, the highest risk to peacetime access occurs when dictators provide access exclusively to receive compensation. These arrangements should be avoided except in extreme situations. That said, any purely transactional relationship (whatever the regime type) or access agreement with an authoritarian regime (even if mutual defense) is almost as risky. For this reason, U.S. planners should think of basing in terms of clusters—facilities that offer similar operational benefits but are spread across multiple nations. Likewise, U.S. policymakers should avoid publicly describing any particular facility or country as indispensable. Appropriate deference and appreciation can be paid to overseas partners without giving them undue power in facility access negotiations. Finally, basing clusters have the additional benefit of increasing operational resilience in the face of direct military threats to any of these airfields.
- **Expand USAF capability to support rotational forces.** Rotational forces have multiple benefits. Continuous rotational forces have proven to be an effective alternative in locations where a permanent U.S. presence is not politically viable. Periodic rotational forces are often used to supplement forward forces and to expand the range of capabilities available to theater commands. Since permanent force posture is difficult and slow to change (either up or down), rotational forces offer policymakers and commanders an agile policy instrument that can be used to support multiple policy objectives, including deterrent signaling and reassurance of partners.

However, it is much more costly to rotate forces than to permanently base them abroad. In cases where a continuous presence is necessary, permanent basing will always be more cost-effective. Thus, continuous rotations should be minimized to the extent possible, recognizing that some critical presence missions can only be achieved this way. Where a continuous presence is not required, periodic rotations offer a means to exercise and train with partner nations, to improve infrastructure, and to demonstrate the ability to rapidly deploy to a region. The demand for periodic rotations is likely to grow from both partner nations and combatant commanders because of their political and operational flexibility. To support a growing demand for rotations, the USAF will need to develop

new concepts to rotate forces more efficiently, receive additional resources, or engage in some combination of the two.

## Global Posture for a Global Power

It appears that the debate about U.S. global posture has finally been joined. Much good can come from an open and thoughtful exploration of U.S. presence and access needs in the coming decades. Unfortunately, much of the current debate revolves around dangerous misperceptions. For example, some authors accuse long-time U.S. defense partners of freeriding on U.S. defense investments. Whatever the merits of arguments in favor of greater defense spending by particular partner nations, this line of argument misrepresents U.S. overseas military presence as one-sided, i.e., a gift to the host nation. In reality, these relationships have endured because of the considerable mutual benefits to both sides, including a wide range of security cooperation initiatives, increased regional stability, mutual support during contingencies, and, for the United States, the ability to conduct operations that would be infeasible without a global network of bases and partners. Americans take for granted the ability to project power globally, but this would not be possible without access to partner nation airfields, ports, and territory that often are not even in the immediate combat theater. For example, neither Operation Iraqi Freedom nor Enduring Freedom would have been possible without access to en route airfields and other support facilities in Spain, Italy, and Germany.

Another misperception is that great savings are to be found in cutting overseas forces and facilities. Most of the Cold War global posture has already been dismantled. Although some additional savings are likely possible, fiscal benefits must be carefully weighed against the operational and strategic costs. For example, the USAF has only seven fighter wings deployed abroad (one in the UK, one in Germany, one in Italy, two in Korea, and two in Japan), and only one of these (the 48th Wing at RAF Lakenheath in the UK) is a full wing. The remaining six all require reinforcements from the United States to be at full strength. With changing strategic demands, it is appropriate to consider whether some realignment is called for among overseas locations, both within and across regions. That said, any major realignment risks hindering opportunities for training with our closest partners, may undermine relationships that have provided benefits for many decades, and could lead to the closure of bases that have proven their worth in past contingencies. Fewer forces and fewer bases ultimately translate into reduced operational flexibility and could undermine U.S. regional stability, deterrence, and reassurance objectives.

Ultimately, the nation faces a critical choice: Do we intend to remain a global military power or not? There are substantial costs associated with either choice. If we choose the former, a large set of responsibilities and force demands flow from that decision and cannot be avoided. Global power necessitates a global force posture. It requires sustained and stable investment in human capital (our own and partners), forces, facilities, and relationships. These include developing and maintaining access relationships, forward bases, and forces; meeting security commitments to

partner nations; sustaining a global transportation and communications network; and fielding forces capable of deploying globally and conducting effective military operations against a wide range of potential adversaries.

U.S. global posture is not the product of an overdeveloped sense of responsibility for other nations' security needs, but rather a prudent investment to protect U.S. interests. The fact that the United States has shared security interests with close partners in key regions is something to celebrate, not bemoan. The benefits in terms of opportunities for access and the ability to positively influence security in key regions far outweigh the costs of such commitments. That said, global posture should evolve to meet changing security demands, both in the nature and location of security threats. The future American global posture will feature a portfolio of arrangements and facilities, ranging from a small number of anchor bases in key nations to dozens of locations where its presence is modest and periodic. The Cold War global posture proved to be a strategic investment, serving the United States and its partners well for over 50 years. Current efforts to realign U.S. global posture into an increasingly agile and geographically diverse presence should likewise be viewed as a strategic investment, one that will pay benefits in ways unforeseen and over a time horizon likely measured in decades.