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U.S. Nuclear Weapons  
Future Strategy and Force Posture

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Since the end of the Cold War, the United States has been reexamining the role of nuclear forces in its national security policy. Traditional U.S. nuclear strategy was primarily intended to deter a Soviet attack against the United States, along with a few lesser objectives. This strategy called for a nuclear arsenal held at constant high alert and a Single Integrated Operational Plan (SIOP) that would make execution of a retaliatory strike as simple, quick, and effective as possible.

Today, the United States faces a more diverse set of potential threats. Political instability in established nuclear states such as Russia and Pakistan is a major concern. The deterioration of military command and control in Russia increases the chances of accidental or unauthorized launch. The possible emergence of new nuclear adversaries poses a further threat because of the wide variety of strategies and capabilities they may present. Nuclear weapons may become instruments of the weak rather than the strong. Weak regimes opposed to the United States may attempt to deliver nuclear warheads on trucks or ships, thus eluding U.S. tactical warning systems. States or groups that embrace radical, anti-American ideologies and feel that they have nothing left to lose may not be deterred by the threat of nuclear retaliation. Long before the current Bush administration took office, it was clear that the United States needed to rethink its fundamental nuclear posture. RAND Project AIR FORCE examined a range of strategies and force postures that the United States could adopt to make the most effective use of its nuclear forces in an uncertain world. Key observations include the following:

- *The need for the United States to retain nuclear weapons is much less compelling than in the past.* Improved conventional weapons can replace nuclear weapons in almost all military roles. Nuclear arms remain unmatched as terror weapons (i.e., arms

Abstract

The United States today faces a more diverse set of potential threats than it did during the Cold War. This change calls for new thinking about the role of nuclear forces in U.S. national security policy. RAND Project AIR FORCE examined strategies and force postures that the United States could adopt to make the most effective use of its nuclear forces in an uncertain world. Researchers observe that the need for the United States to retain nuclear weapons is much less compelling than in the past, that a much smaller nuclear force could fulfill all U.S. political and military needs, and that reducing the risk of nuclear war due to accidents or mistakes is even more important today than before.

intended to deter adversaries by threat of retaliation). However, the United States must decide whether it still needs such a capability, particularly in view of the inherent risks and costs of maintaining a nuclear stockpile. Moreover, barring dramatic changes in the world, U.S. nuclear expertise and capability may "wither away" irreversibly over time. If so, then the United States will become less and less credible as a nuclear power no matter what its official policy is.

- *A much smaller nuclear force could fulfill all U.S. political and military needs.* A force of a few hundred nuclear weapons, if operated properly, should be adequate to handle any reasonable application that is likely to arise in the foreseeable future. The operational force level needed is driven to a somewhat higher quantity both by a future need to plan for contingencies and to assure adequate survivability and by the need to

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maintain a reserve. Such a force would be much smaller than that originally envisioned for the next round of START III negotiations or currently allowed by the Moscow Treaty. The most effective Air Force contribution to such a force would be air-launched missiles. For military applications that require nuclear weapons, warheads with at least moderate yields would be needed. So-called "mini-nukes" would have little operational value. A survivable and flexible command and control system would be a prerequisite for any future U.S. nuclear force.

- *Reducing the risk of nuclear war due to accidents or mistakes is even more important than in the past.* During the Cold War, the United States and the Soviet Union had to cope with the threat of a surprise attack because some of their nuclear forces were vulnerable and their command and control systems were fragile. This threat was considered

greater than the risk of an accidental launch due to human or technical error. Thus both sides maintained their strategic nuclear forces on a "hair-trigger" alert, ready to launch on a credible warning of an attack by the other side. Today, the risk of accidental launch outweighs that of a disarming surprise attack. A deterrence strategy based on the threat of punishment does not require prompt retaliation, only sure retaliation. Any military situation that might require the United States to consider using nuclear weapons is likely to take some time to develop. The United States should eliminate any nuclear weapon systems that have to be "used or lost." It should also make sure that its command, control, and intelligence systems are survivable, robust, and capable enough to allow policymakers sufficient time to understand what is going on and to make a reasoned decision about how to respond. ■

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This research brief describes work done for RAND Project AIR FORCE and documented in *Future Roles of U.S. Nuclear Forces: Implications for U.S. Strategy* by Glenn C. Buchan, David Matonick, Calvin Shipbaugh, and Richard Mesic, MR-1231-AF, 2003, 128 pages, ISBN: 0-8330-2917-7. Copies of this research brief and the complete report on which it is based are available from RAND Distribution Services (phone: 310-451-7002; toll free: 877-584-8642; or email: [order@rand.org](mailto:order@rand.org)) or online at [www.rand.org/publications/MR/MR1231/](http://www.rand.org/publications/MR/MR1231/). The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND®** is a registered trademark.

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