



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 product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

# Facing the Missile Challenge

U.S. Strategy and the Future of the INF Treaty

---

David W. Karn, Jr.

Supported by the Stanton Foundation



The research described in this report was supported by the Stanton Foundation.

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

ISBN: 978-0-8330-7682-3

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.

**RAND**® is a registered trademark.

© Copyright 2012 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND website is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (<http://www.rand.org/publications/permissions.html>).

Published 2012 by the RAND Corporation

1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665

RAND URL: <http://www.rand.org>

To order RAND documents or to obtain additional information, contact

Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Email: [order@rand.org](mailto:order@rand.org)

# Summary

---

## Background

This study examines the question of whether the Intermediate Nuclear Forces (INF) Treaty continues to serve the security interests of the United States more than two decades after the Treaty's signing. Weapon systems that the Treaty explicitly prohibits, land-based intermediate-range (500 to 5,500 km) ballistic and cruise missiles—whether conventionally or nuclear-armed—have emerged as central assets in the arsenals of a number of critical regional powers. These missiles present significant threats to U.S. forces abroad and allies, begging the question: Does the United States require similar capabilities, currently proscribed under the INF Treaty, to effectively respond to these challenges? If the answer is “yes,” then the constraints of the INF Treaty may, in fact, undermine U.S. national security interests. Conversely, given the extensive conventional military capabilities of the United States, there may be programs that can better address the threats of regional INF missiles forces in more cost-effective and operationally flexible ways.

The study will assess the nature of the regional security threats confronting the United States, utilizing an analytical framework derived from previous RAND research on deterrence in regional contexts. In doing so, the study will consider the effectiveness of existing programs that are likely to be available to decisionmakers to address these threats, as well as the potential contribution of a new generation

of conventional U.S. land-based intermediate-range missiles moving forward. The study also examines the larger political and security ramifications of a U.S. withdrawal from the Treaty based on a consideration of interests of key regional allies and partners, and considers the potential diplomatic way forward for the United States.

## **Findings of the Study**

### **Defining the Challenge of Missile Proliferation**

Over the past decade, the character of missile proliferation has been primarily *vertical*, reflecting the qualitative advancement of existing missile programs rather than the spread of new programs associated with *horizontal* proliferation. Multilateral initiatives such as the Missile Technology Control Regime (MTCR) and the Proliferation Security Initiative (PSI) have increased barriers to the acquisition of ballistic missiles and associated technologies and the technical expertise and knowledge required to build extensive programs. Nonetheless, intermediate-range ballistic missiles have become key assets for regional powers such as Iran, North Korea, India, Pakistan, and China.

### **Addressing the Challenge of Intermediate-Range Missiles in Key Regional Contexts**

While states like Iran and North Korea both present formidable threats to U.S. interests and those of its allies, it is not clear that the United States requires the “in-kind” capability to effectively deter those states or sufficiently defend its regional interests should deterrence fail. U.S. conventional military superiority, supported by a credible nuclear deterrent, as well as increasing missile defense capabilities and strong working relationships with formidable regional allies, provide capabilities necessary to effectively address these two difficult challenges. Similarly, while stocks of nuclear-armed intermediate-range missiles have increased in the arsenals of India and Pakistan, U.S. missiles seem an inappropriate remedy.

### **Addressing the Challenge of China's Missile Modernization**

Ultimately, the only threat to U.S. security interests that could conceivably warrant serious consideration for withdrawing from the INF Treaty is the significant expansion, in both quantitative and qualitative terms, of the intermediate-range conventional missile forces of the People's Republic of China (PRC). These missile forces contribute to a growing Anti-Access/Area Denial (AA/AD) capability that could significantly degrade the capacity of the United States to effectively execute a campaign to defend Taiwan in the event of a conflict, and may undermine the ability of the United States to deter China from initiating hostilities in the event of a crisis.

### **Assessing the Case for U.S. Land-Based Intermediate-Range Conventional Ballistic Missiles**

While an “in-kind” response to China’s missile-centric military modernization program may seem particularly useful in holding at risk high-value targets (deployed mobile missiles, air bases, and command and control), the program likely would be relatively costly. Moreover, other issues—including limited basing options and likely Chinese responses to such a deployment—significantly decrease its perceived benefits. Other programmatic choices can be made to maintain or enhance U.S. conventional capabilities in the short-, medium-, and longer-terms that may be preferable in terms of cost-effectiveness and operational flexibility. In short, a new land-based intermediate-range conventional missile is unlikely to provide a silver bullet in responding to the threat of China’s missile expansion.

### **The Political-Military Costs of Withdrawing from the INF Treaty**

This study concludes that the political and security costs of a U.S. withdrawal from the INF Treaty likely would be significant and far-reaching. It is difficult to envision a scenario in which the military benefits provided by land-based conventional intermediate-range missiles would outweigh the political/military costs of withdrawal.

- **Russia.** While Russia may welcome the unfettered ability to reconstitute its intermediate-range forces, the reversal of current cooperative arms control trends is likely to raise Russian suspi-

cions of U.S. motives, and the challenge of competing with the United States in another realm is not necessarily attractive. In short, it should not be assumed that the new freedom from Treaty restrictions would be interpreted as a benign signal, particularly in the longer term. Moreover, expansion of Russian capabilities to implement a military doctrine that relies on the first use of nuclear weapons would seem to create more problems than it solves.

- **Europe/NATO.** A clear and overwhelmingly negative response should be expected from Europe. Withdrawal from the INF Treaty would seem to reverse any momentum toward reducing non-strategic nuclear weapons in Europe, something many NATO members support. Acute concerns about a new Russian threat may exacerbate divisions between Western and Central European (or newer and older) members. At a more basic level, a decision to withdraw from an agreement that has underpinned the security and stability of Europe since the end of the Cold War would be seen as a further example of Washington's drift away from the alliance and its commitment to Europe's security interests.
- **East Asia.** Assuming current trends, and absent any clear Chinese provocations or a dramatic shift toward aggressive behavior, it may be difficult for the United States to justify the withdrawal from the INF Treaty in order to deploy conventional INF missiles in the region. Given the high levels of economic interdependence and the central role that China has assumed in regional trade flows, even U.S. allies such as Japan and South Korea are unlikely to be supportive of a diplomatic move that could be seen as provocative and undermining regional stability. Moreover, placing these states in the difficult position of making a clear choice in a potential conflict may precipitate significant domestic political turmoil, which likely would limit U.S. basing options to U.S. territories, such as Guam.
- **Global non-proliferation.** Finally, in terms of the broader global nonproliferation architecture, U.S. withdrawal from the INF Treaty is likely to undermine the MTCR and could spur further proliferation. While the MTCR has not been perfect, horizontal

proliferation has been constrained since the late 1980s. A perceived reversal of U.S. leadership could damage the credibility of the regime. Moreover, two major potential suppliers, China and Russia, as well as a potential second class of suppliers made up of states outside the current regime, could have strategic and economic incentives to sell proscribed missile systems or withhold cooperation on nonproliferation initiatives.

## **The Way Forward**

Because of the likely political and security costs, and the limited military benefits of land-based intermediate-range missiles in addressing the challenge of China's military modernization, it is difficult to envision the unilateral withdrawal from the INF Treaty as serving U.S. national interests. Instead, the United States should focus on working with Russia, and leverage Russian concerns about INF missile forces to expand the Treaty to countries such as China, India, Pakistan, and others. In the short term, the likely success of such a strategy is low, but it may provide a more suitable basis for a dialogue with Beijing than a focus on strategic weapons. In the interim, the United States should work with Russia to maintain the INF Treaty and, if necessary, address the potential problem of China's missile programs with alternative military programs that are better suited to the geography and political realities of East Asia and that may prove less costly.