

"Ambassador Graham has cut right down to the essentials about mankind's most dangerous weapons. The general public will be encouraged to demand better policies." —HANS BLIX

commonsense

ON WEAPONS OF MASS DESTRUCTION

AMBASSADOR THOMAS GRAHAM JR.

COMMON SENSE
ON WEAPONS
OF MASS
DESTRUCTION

COMMON SENSE
ON WEAPONS
OF MASS
DESTRUCTION

Ambassador Thomas Graham Jr.

UNIVERSITY OF WASHINGTON PRESS
SEATTLE & LONDON
IN ASSOCIATION WITH THE
EISENHOWER INSTITUTE
WASHINGTON, D.C.

For Christine

Copyright © 2004 by University of Washington Press

Printed in the United States of America

10 09 08 07 06 05 5 4 3 2 1

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage or retrieval system, without permission in writing from the publisher.

University of Washington Press

P.O. Box 50096, Seattle, WA 98145, U.S.A.

www.washington.edu/uwpress

Library of Congress Cataloging-in-Publication Data

Graham, Thomas.

Common sense on weapons of mass destruction /

Thomas Graham Jr. — 1st ed.

p. cm.

Includes index.

ISBN 0-295-98466-X (pbk. : alk. paper)

1. Nuclear nonproliferation. 2. Weapons of mass destruction.
3. Arms control. 4. Security, International. I. Title.

JZ5675.G73 2004

327.1'745—dc22 2004016020

The paper used in this publication is acid-free and recycled from 20 percent post-consumer and at least 50 percent pre-consumer waste. It meets the minimum requirements of American National Standard for Information Sciences-Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

Contents

Foreword vii

Introduction 3

1 / The Problems of Our Time:

Nuclear Proliferation and Nuclear Terrorism 9

2 / The Effects of Nuclear Weapons 20

*3 / An Overview of International Law
and Arms Control* 30

*4 / The Cornerstone of Security:
The Nuclear Non-Proliferation Treaty* 50

5 / The Political Value of Nuclear Weapons 63

6 / Stopping Nuclear Explosions: The Test Ban 74

7 / Missile Defense 86

8 / Outer Space 99

*9 / Cleaning Up After Past Wars:
Land Mines and Small Arms* 109

10 / Poison Gas and Microbes: <i>Chemical and Biological Weapons</i>	117
11 / Controlling Nuclear Materials: <i>The Situation in Russia</i>	125
12 / Regional Issues: Weapons of Mass Destruction <i>in the Middle East and Nuclear Weapons in South and Northeast Asia</i>	133
13 / America's Role	145
Conclusion	152
Epilogue	155
Acknowledgments	158
Appendix 1. Global Nuclear Status	160
Appendix 2. Global Nuclear Stockpiles	162
Appendix 3. Weapon Development Milestones	165
Chronology	169
Glossary	177
Index	195

Foreword

I COMMEND AMBASSADOR GRAHAM FOR WRITING this much-needed book. Nuclear weapons in the hands of “rogue” states or terrorist organizations represent the principal security threat to the United States and to the world community today. The aftermath of the Cold War has in many ways left us less secure, given the large numbers of unnecessary and dangerous nuclear weapons, the enormous stockpiles of nuclear bomb material in Russia and elsewhere, and the spread of other types of weapons of mass destruction. It is to nuclear weapons that we must turn our principal attention—only they can cripple civilization as we know it.

Our principal bulwark against the threat represented by the current number and potential proliferation of nuclear weapons is the Nuclear Non-Proliferation Treaty (NPT). Some argue that the NPT has failed and has become irrelevant, and that the only counter to nuclear proliferation is unilateral force—a course which history tells us is counterproductive at best, and probably

disastrous. But the NPT regime has not failed. Only two more countries have nuclear weapons now than had them in 1970 when the NPT entered into force. However, the International Atomic Energy Agency estimates that sixty to seventy countries are now capable of building nuclear weapons. Should a substantial number of states act on this capability (as was predicted years ago before the NPT was signed), it would create a world far different from the one that we have now, and one that it is difficult even to contemplate. It would be a world in which the stability of civilization would continually remain in the balance.

But this can be avoided and nuclear nonproliferation policies can continue to prevail if the NPT regime is strictly observed by all states—this means by all states, including the five nuclear weapon states: the United States, Britain, France, Russia, and China. The NPT was created in 1970 on the basis of a mutual commitment, expressed in Article 6 of the treaty, that in exchange for the rest of the world agreeing not to acquire nuclear weapons, the five nuclear weapon states would engage in nuclear disarmament negotiations aimed at eventually eliminating nuclear weapons and would share peaceful nuclear technology. When the NPT was made permanent in 1995, this commitment was refined to make clear that it included deep reductions leading toward the elimination of nuclear weapons and support for a comprehensive nuclear test ban treaty. It also meant strict observance of the promises by the nuclear weapon states not to use nuclear weapons against nonnuclear NPT parties. The NPT nonnuclear weapon states (now numbering 182) have always been skeptical about NPT compliance by the nuclear weapon states, and they are presently far more skeptical as a result of the United States backing away from treaty commitments in recent years. It is correct to emphasize the importance of compliance with the NPT regime as the White House has done. Actions are urgently needed

to ensure the long-term viability of the NPT, which is absolutely essential to peace and security in the twenty-first century. I suggest we proceed along the following lines:

If the NPT nuclear weapon states would agree to a plan whereby truly drastic reductions in nuclear weapons would be achieved over a period of years, then the Security Council could agree that any breach of the nonnuclear status of any of the 182 NPT nonnuclear weapon states would be regarded as a breach of the peace, with the council agreeing in advance that if it should determine that proliferation had taken place, “all necessary means” (including conventional military force) would be authorized to correct the situation. As part of this, all of the states possessing nuclear weapons would be required to declare in a submission to the council their number and type. Then the United States and Russia could agree to a very low residual level of nuclear weapons in the range of 50 to 100 each, with Britain, France, and China reducing to a level just above elimination. In return for eliminating their nuclear weapon programs, India, Pakistan, Israel, and North Korea would receive from the permanent members of the Security Council (the United States, Russia, France, Britain, and China) legally binding security guarantees against attack. The nonnuclear weapon states would pledge again their nonnuclear status and agree to support a call for force by the Security Council against any violator. This is the kind of outcome we must pursue if peace and security in the new century is to have a chance.

This subject is simply and carefully presented in Ambassador Graham’s book. Before we can have sensible policies toward nuclear weapons and other problems left over from the Cold War, there must be public understanding. Only with the support and indeed the insistence of the public can governments begin to effectively follow policies designed to make the world a more peace-

X / FOREWORD

ful place. This book makes a most important contribution to this: it makes this complicated process approachable. I recommend Ambassador Graham's book to all those who care about the future of our country, and indeed the world.

ROBERT S. MCNAMARA

COMMON SENSE
ON WEAPONS
OF MASS
DESTRUCTION

Introduction

EVERY FOUR YEARS, THE CHICAGO COUNCIL ON Foreign Relations conducts a public survey of American attitudes toward foreign policy issues, a poll considered to be the most authoritative on this subject. In the poll released in 2000, Americans identified nuclear weapon proliferation (the spread of nuclear weapons to countries that don't presently have them) as more serious than any other issue. Year after year, poll results indicate that the American public understands the dangers of nuclear weapon proliferation and nuclear terrorism; supports the Nuclear Non-Proliferation Treaty (NPT), which has effectively restrained the spread of nuclear weapons since its inception in 1970; favors U.S. ratification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT); supports significant reductions in nuclear weapons; and recognizes the importance of the rule of international law. But the American public's positions are rarely translated into policy in Washington. What is the reason for this?

After the October 1999 vote in the U.S. Senate refusing to

endorse the CTBT for ratification, a poll found that two-thirds of respondents opposed what the Senate had done, but only one-third said that the position of their two senators on this issue would affect their vote for either one when seeking reelection. Arms control, nonproliferation, and international law are a significant component of national security; Americans know this, and know how important a united world community is in defending against the threat of international terrorism, yet these issues are far down on their list of priorities when it comes to electing individuals to national public offices. This is so even though the overwhelming majority of Americans understand the danger that vast numbers of weapons of mass destruction (particularly nuclear weapons) present, and how uncertain their security and world security are as a result.

One reason for this seeming lack of active public support is that arms control, nonproliferation, and international law seem complicated, technical, difficult to understand, and removed from everyday life. Another reason may be that with the end of the Cold War (the era of thermonuclear confrontation between the two superpowers), the decline in world order, and the rise of international terrorism, these issues may seem less relevant than they once were. This book argues that arms control, nonproliferation, and international law are in fact accessible to the general public, and that they are just as, if not more, relevant than ever.

In the wake of two horrifically destructive world wars, the United States has led the world toward a more stable and orderly condition based on successful Cold War alliances and a vast international security treaty structure. The United States was the principal creator of the United Nations and the prime mover in establishing this international treaty structure, the centerpiece of which is the Nuclear Non-Proliferation Treaty, signed in 1968. This treaty and the many other agreements associated with or derived from it have largely contained the spread of nuclear

weapons and have helped to establish strategic stability among the countries of the world. Additionally, by means of related agreements, chemical and biological weapons have been outlawed, nuclear weapon delivery vehicles (missiles and bombers) have been controlled, and conventional weapons (tanks, artillery, and landmines) have been limited. All of these agreements bolstered peace and stability in the latter half of the twentieth century, and will likely continue to do so in the twenty-first century. But in recent years, the United States has failed to provide global leadership in support of international law and the international treaty structure. As a result, this treaty structure is eroding and, most worrisome of all, the NPT itself has come under heavy pressure. It would be catastrophic should the NPT fall apart and nuclear weapons begin to spread around the world.

Nuclear weapons and nuclear deterrence played an important role during the Cold War, but given the world today, and the threats that face us—international terrorism, unstable states, and the proliferation of weapons of mass destruction, which include nuclear, chemical, and biological weapons and their delivery systems—it is of the highest urgency to preserve and strengthen international cooperation and international treaty arrangements. Nuclear weapons have a very limited role to play in this effort: that of deterring their use by others. In order to discourage states from wishing to acquire them today, nuclear weapons should be de-emphasized and reduced to the lowest level consistent with safety, stability, and security.

This is not a universal view. It has not been the view of any administration in office as of yet. Many thousands of nuclear weapons still remain deployed in the field on hair-trigger alert more than ten years after the end of the Cold War. The possession of nuclear weapons still affects a state's international standing, and nuclear weapons are still highly valued by the states that have them. This situation needs to begin to change if the NPT

and the associated treaty structure are to survive and peace and stability are to be achieved in the twenty-first century.

Many are not yet convinced of the necessity of nuclear weapon reductions. They worry about verification. Is it possible to know with accuracy how many nuclear weapons another state has? They are also concerned about stability at lower weapon levels, where the acquisition of a few more weapons could make a great difference. The verification technologies available today answer the first concern in the affirmative, and, as for the second, stability and deterrence are just as possible at low levels as at high levels (hundreds rather than thousands of nuclear weapons) now that the Cold War is over. Of course, agreed verification arrangements would have to go far beyond any that have been made thus far, and would have to be based on cooperative principles.

For example, restricting the United States and Russia to three hundred weapons each, as recommended by the 1997 National Academy of Sciences report *The Role of Nuclear Weapons*, would provide as much stability as the tens of thousands of nuclear weapons deployed during the Cold War, or the many thousands deployed today. There is no need to target the enormous number of facilities that were targeted during the Cold War. With today's nonconfrontational relationship between the United States and Russia, three hundred weapons (more than either the United States or Russia could realistically ever find targets for) would be entirely sufficient for whatever deterrence is still required. And the reduction by Britain, France, and China to very low levels (below 100 each) also would have no effect on stability or deterrence. These three states have minimum nuclear deterrent postures, and 80 to 90 nuclear weapons would be more than sufficient for one of them to discourage any threat of nuclear attack (as reflected in the National Academy study). Reducing to these levels would devalue nuclear weapons as great power sym-

bolts and thereby greatly strengthen the NPT. No matter how important one considers the maintenance of nuclear deterrence, in today's world, where the problem is not the confrontation of superpowers but rather rogue states, terrorists, and proliferation, stable numbers of weapons at much lower levels is more secure.

Some argue, however, that while nuclear deterrence no longer has a significant role to play, neither do nuclear nonproliferation agreements, because rogue states cheat on the agreements and terrorists are not bound by them. Rather, it is asserted, the United States should rely on a unilateralist preemptive policy of counter-proliferation using military force when necessary. But the failure of intelligence to accurately portray the situation in Saddam Hussein's Iraq points up the danger of relying on a preemptive strategy where much is unknowable, and the threat of possible nuclear weapon programs in North Korea and Iran underscores the difficulty of the United States going it alone. It is clear that both of these conflicts can be effectively resolved only through the cooperation and consistent effective effort of the international community (in the case of North Korea, with special emphasis on states in that region). And there can only be consistent effective international action through a treaty system such as the NPT regime, which requires cooperation. Thus, strong and viable arms control and nonproliferation treaty systems are as essential to peace and stability today as they have ever been.

This is a subject the American people must take seriously. The terrible tragedy of the terrorist attacks on September 11, 2001, underscored the dangerous nature of the world today and the importance of national security issues. Americans have always supported defense programs that they believe are necessary for their security, as well as arms limitation arrangements that make for a safer world. But it has been much easier to translate the support for defense programs into support for candidates espousing them than has been the case with arms limitation measures.

Defense programs are finite and they produce jobs; arms limitation measures are often esoteric, difficult to define, and do not as often lead to concrete results—rather, they prevent things from happening.

A note about the organization of this book: Two subjects, nuclear-weapon reductions and missile proliferation, do not have separate chapters. The first of these two subjects is subsumed in Chapters 5 and 7 as directly relevant to the political value of nuclear weapons and to missile defense policies. The second subject relates to both missile defense and outer space security. A discussion of missile proliferation is included in Chapter 7, as it has the most direct bearing on this subject.

Finally, while emphasizing the threat of nuclear proliferation, this book addresses other relevant issues, such as missile defense, the weaponization of space, regional issues, chemical and biological weapons, and the proliferation of small arms. All of these are related to the central question of international terrorism, unstable states, a decline in world order, and loose WMDs.

1

The Problems of Our Time: Nuclear Proliferation and Nuclear Terrorism

DISARMAMENT AND ARMS CONTROL ARE NOT new. In 1139, at the Second Lateran Council, Pope Innocent II outlawed the crossbow, declaring it to be “hateful to God and unfit for Christians.” The crossbow was later overtaken in effectiveness by the English longbow. The crossbow and the longbow were then eclipsed by the destructive firepower of the cannon. The Church also banned the rifle when it appeared, but military technology continued to develop over the centuries, and diplomacy and arms control efforts could not keep pace. This changed with the advent of the atomic bomb in 1945. For the first time, humanity possessed a weapon with which it could destroy itself. Disarmament efforts gradually gained momentum, and over time a web of international treaties and agreements have been constructed that have inhibited the spread of nuclear, chemical, and biological weapons and limited their development.

There is no question but that these efforts have changed the course of history.

Nuclear weapons are truly a thing apart. The atomic bomb used against Hiroshima in 1945 was 12.5 kilotons, the equivalent in explosive power of 12,500 tons of TNT. In the mid-1950s, the United States and the Soviet Union were testing nuclear weapons in the megaton range, equivalent to one million tons of TNT. For reference, one megaton roughly compares to a freight train loaded with TNT, stretching from New York to Los Angeles. In the 1960s, the United States deployed (operationally placed in the field) missiles in underground silo launchers around the country, each with a 9-megaton warhead. Just one of these weapons detonated at the Washington Monument could have more or less destroyed Washington, D.C., out to the capital beltway in every direction (an approximately fifteen-mile radius). The United States routinely carried multiple bombs on its B-52 bombers, each with the explosive power of 25 megatons. One of these bombers carried more explosive power than was used by all the sides in World War II. The Soviet Union deployed intercontinental missiles with nuclear warheads comparable to these bomber weapons.

Soon after 1945, a vast nuclear arms race was underway. By the 1960s, it appeared as if nuclear weapons would spread all over the world. There were reports issued in 1962 estimating that by the end of the 1970s there would be twenty-five to thirty states with nuclear weapons integrated into their national arsenals and ready for use. Had this happened, there would likely be more than fifty nuclear weapon states today. This would have created a nightmarish world. Nuclear weapons would be so widespread that it would be impossible to keep them out of the hands of terrorists, and every conflict would run the risk of "going nuclear."

In 1960, when France detonated its first nuclear weapon, the headlines in French newspapers read "Vive la France!" Fourteen

years later, India's first nuclear explosion, figuratively conducted in the middle of the night, received worldwide condemnation. What intervened? The Nuclear Non-Proliferation Treaty. The Nuclear Non-Proliferation Treaty (NPT), signed in 1968, entered into force in 1970, and indefinitely extended in 1995, converted what had been an act of national pride (the acquisition of nuclear weapons) into an act considered contrary to the practices of the civilized world. The then five nuclear weapon states (the United States, the Soviet Union, Britain, France, and China) agreed to certain nuclear arms control and disarmament commitments, including deep reductions in nuclear weapons leading to their eventual complete elimination, a ban on nuclear test explosions, and a pledge never to use nuclear weapons against nonnuclear weapon parties. In exchange, most of the rest of the world agreed never to acquire nuclear weapons.

In effect, the NPT made the acquisition of nuclear weapons by countries that joined the NPT as nonnuclear weapon states (currently some 182 countries) a violation of international law. The three states that refused to join the NPT as nonnuclear weapon states and that built nuclear weapons—India, Pakistan, and Israel—are for this reason considered as somewhat outside of the world community, and votes at the United Nations and at international conferences reflect this. India, Pakistan, and Israel were not given the opportunity to join the NPT in 1968 as nuclear weapon states, as they did not then possess (or in Israel's case, claim to possess) nuclear weapons, and the NPT decision was to stop the spread of nuclear weapons where it was at that time. The International Atomic Energy Agency (IAEA), a United Nations–related organization, has estimated that perhaps sixty to seventy nations today possess the capability to build such weapons.

North Korea, which has long been thought to have enough plutonium for one or two bombs, is one such country. By chemically reprocessing the existing spent reactor fuel that it has pos-