

POLICY PAPERS

NUMBER 42

**IRANIAN MILITARY POWER:
CAPABILITIES AND INTENTIONS**

MICHAEL EISENSTADT

THE WASHINGTON INSTITUTE FOR NEAR EAST POLICY
WASHINGTON, DC

All rights reserved. Printed in the United States of America. 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 and retrieval system, without permission in writing from the publisher.

Copyright © 1996 The Washington Institute for Near East Policy

Published in 1996 in the United States of America by The Washington Institute for Near East Policy, 1828 L Street N.W., Suite 1050, Washington, D.C. 20036

Library of Congress Cataloging-in-Publication Data
Eisenstadt, Michael.

Iranian military power: capabilities and intentions/Michael Eisenstadt.

p. cm. —(Policy papers; no. 42)

Includes bibliographical references (p.)

ISBN 0-944029-65-5

1. Iran—Defenses. 2. State-sponsored terrorism—Iran. 3. Iran—Foreign relations—United States. 4. United States—Foreign relations—Iran.
I. Title II. Series: Policy papers (The Washington Institute for Near East Policy); no. 42.

UA853.I7E37 1996

355'.033055—dc20

96-15397

CIP

THE AUTHOR

Michael Eisenstadt is a senior fellow at The Washington Institute for Near East Policy and author of several Washington Institute Policy Papers, including *Arming for Peace? Syria's Elusive Quest for "Strategic Parity"* (1992), *Like a Phoenix from the Ashes? The Future of Iraqi Military Power* (1993), and (with Andrew Bacevich and Carl Ford) *Supporting Peace: America's Role in an Israel-Syria Peace Agreement* (1994). He has served as an analyst with the United States Army and with the United States Air Force Gulf War Air Power Survey, where he examined Iraqi strategy and planning prior to the Gulf War. His articles have appeared in the *Washington Post*, *Jane's Intelligence Review*, *Special Warfare*, and other publications.

The opinions expressed in this Policy Paper are those of the author and should not be construed as representing those of The Washington Institute for Near East Policy, its Board of Trustees, or Board of Advisors.



CONTENTS

ACKNOWLEDGMENTS	<i>vii</i>
GLOSSARY OF ABBREVIATIONS	<i>ix</i>
ABBREVIATIONS OF SOURCES	<i>xi</i>
PREFACE	<i>xiii</i>
EXECUTIVE SUMMARY	<i>xv</i>
INTRODUCTION	1
I IRAN'S NONCONVENTIONAL FORCES	9
II IRAN'S CONVENTIONAL FORCES	35
III IRAN'S ROLE IN TERRORISM AND SUBVERSION	65
IV IMPLICATIONS	79
V U.S. POLICY TOWARD IRAN	85
APPENDICES	
U.S. Policy on the Transfer of Nuclear Technology to Iran	103
Estimating a Timetable for Iran's Nuclear Program	104
Russian-Iranian Nuclear Cooperation Accord	106
Iran's Nuclear Procurement Efforts	108
Efforts to Prevent or Interdict the Transfer of Arms or Sensitive Technologies to Iran	110
Deterring Iran	112
Iran's Leading Trade Partners	114



ACKNOWLEDGMENTS

In writing this study, I benefited from the assistance of a number of people, without whose help this report would not have seen the light of day. In particular, I would like to thank the following people for their valuable insights and comments in preparing this study: David Albright, Joseph Bermudez Jr. (who also prepared the beautiful graphics for this publication), Seth Carus, Patrick Clawson, David Menashri, Benedict FitzGerald, Norman Friedman, Stephen Grummon, Ahmed Hashim, Assad Homayoun, Glen Howard, David Isby, Kenneth Katzman, Geoffrey Kemp (who commented on an earlier draft of this study at a Policy Forum luncheon), Martin Kramer, Arnold Kramish, Herb Krosney, David Lemon, Sam Lewis, Alan Makovsky, James Placke, Robert Satloff, John Wilner, David Wurmser, Steve Zaloga, and several others who prefer anonymity.

I would also like to thank Dan Blumenthal, Eden Bossom, Ilan Gewurz, Matthew Goldin, Lauren Rossman, and Shira Vickar for their help researching this study, and Greg Saiontz for his work in preparing it for publication. Of course, all errors of fact and judgment that remain are my responsibility.

Michael Eisenstadt
July 1996



GLOSSARY OF ABBREVIATIONS

AAA	Antiaircraft Artillery
AEOI	Atomic Energy Organization of Iran
AEW	Airborne Early Warning
AFV	Armored Fighting Vehicle
APC	Armored Personnel Carrier
ASW	Antisubmarine Warfare
ASUW	Antisurface Warfare
BW	Biological Warfare
CBW	Chemical and Biological Warfare
CEP	Circular Error Probable
CW	Chemical Warfare
C ³ I	Command, Control, Communications, and Intelligence
CIA	Central Intelligence Agency
ECM	Electronic Countermeasures
ECCM	Electronic Counter-Countermeasures
EU	European Union
EW	Electronic Warfare
G-7	Group of Seven Industrialized Countries
GCC	Gulf Cooperation Council
IAEA	International Atomic Energy Agency
IAF	Israeli Air Force
IDF	Israel Defense Forces
IFV	Infantry Fighting Vehicle
IRGC	Iranian Revolutionary Guard Corps
KDP-I	Kurdish Democratic Party of Iran
MKO	Mojahedin-e Khalq Organization
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NPT	Nuclear Nonproliferation Treaty
OPEC	Organization of Petroleum Exporting Countries
PIJ	Palestinian Islamic Jihad
PKK	Kurdish Workers Party
PLO	Palestine Liberation Organization
PPR	Plutonium Production Reactor
PWR	Pressurized Water Reactor
R&D	Research and Development
RPV	Remotely Piloted Vehicle
SAIRI	Supreme Assembly of the Islamic Resistance in Iraq
SAM	Surface-to-Air Missile
SP	Self-Propelled



ABBREVIATIONS OF SOURCES

<i>ACT</i>	<i>Arms Control Today</i>
<i>AFJI</i>	<i>Armed Forces Journal International</i>
<i>AFP</i>	<i>Agence France Presse</i>
<i>AP</i>	<i>Associated Press</i>
<i>AW&ST</i>	<i>Aviation Week and Space Technology</i>
<i>CSM</i>	<i>Christian Science Monitor</i>
<i>DN</i>	<i>Defense News</i>
<i>DoD</i>	<i>Department of Defense</i>
<i>DoS</i>	<i>Department of State</i>
<i>DW</i>	<i>Defense Week</i>
<i>FBIS</i>	<i>Foreign Broadcast Information Service</i>
<i>FBIS-NES</i>	<i>FBIS-Near East and South Asia Daily Report</i>
<i>FBIS-SOV</i>	<i>FBIS-Soviet Union Daily Report</i>
<i>FBIS-WEU</i>	<i>FBIS Western Europe Daily Report</i>
<i>FIS</i>	<i>[Russian] Foreign Intelligence Service</i>
<i>FR</i>	<i>Foreign Report</i>
<i>FT</i>	<i>Financial Times</i>
<i>IDR</i>	<i>International Defense Review</i>
<i>IRNA</i>	<i>Islamic Revolution News Agency</i>
<i>IRIB</i>	<i>Islamic Republic of Iran Broadcasting</i>
<i>JDW</i>	<i>Jane's Defence Weekly</i>
<i>JIR</i>	<i>Jane's Intelligence Review</i>
<i>JPRS</i>	<i>Joint Publication Research Service</i>
<i>JPRS-NEA</i>	<i>JPRS-Near East and South Asia Report</i>
<i>JPRS-TND</i>	<i>JPRS-Nuclear Proliferation Report</i>
<i>JPRS-UFM</i>	<i>JPRS-Foreign Military Review</i>
<i>LAT</i>	<i>Los Angeles Times</i>
<i>LT</i>	<i>London Times</i>
<i>MECS</i>	<i>Middle East Contemporary Survey</i>
<i>MEDNEWS</i>	<i>Middle East Defense News</i>
<i>MEED</i>	<i>Middle East Economic Digest</i>
<i>MEMB</i>	<i>Middle East Military Balance</i>
<i>NYT</i>	<i>New York Times</i>
<i>OTA</i>	<i>[U.S. Congress] Office of Technology Assessment</i>
<i>USN&WR</i>	<i>U.S. News & World Report</i>
<i>USNIP</i>	<i>United States Naval Institute Proceedings</i>
<i>WP</i>	<i>Washington Post</i>
<i>WSJ</i>	<i>Wall Street Journal</i>
<i>WT</i>	<i>Washington Times</i>



PREFACE

Seventeen years ago, the success of the Islamic Revolution in Iran sent shock waves throughout the world. Not only had America lost its “island of stability” in the Gulf (as President Carter had described Iran under the Shah), a charismatic leader espousing a perverted version of Islam had taken power in one of the most strategically important spots on the globe. Before long, the *mullahs* focused on taking U.S. diplomats hostage and “exporting the revolution” to Muslim capitals from North Africa to the Gulf and beyond.

Today, eight years after the death of Ayatollah Khomeini, the Iranian revolution has lost much of its vitality. After sending waves of Iranian youth to die in the war against Iraq and wrecking the economy through gross mismanagement, the clerics are turning on themselves, battling each other for ideological and political control of Khomeini’s legacy. At the same time, the worst fears about the spread of militant Islamic fundamentalism have not been realized. Sobered by the lessons of the Shah, regimes throughout the Muslim world have steeled themselves against the tide of radicalism. Since Khomeini’s victory in Iran, only impoverished Sudan has also succumbed to Islamist rule.

This is precisely the wrong time, however, to be sanguine about Iran or the array of threats it poses to the interests of the United States and U.S. allies. Ideologically, Iran offers itself as the champion of all that oppose the “corrupt” West. Despite the political failings of the Tehran regime, the allure of militant Islamic fundamentalism—both the Sunni and Shi’i varieties—remains strong and enduring, with Iranian-supported proponents consistently attracting the votes of roughly one-third of the electorate whenever reasonably free elections are held in the Muslim world.

On core “Islamic” issues such as the “liberation of Palestine,” Iran is a frontline belligerent providing political, moral, financial, logistical, and even operational support to terrorist groups like Hamas, Hezbollah, and Islamic Jihad. From Bosnia to Bahrain, Tehran’s hand is seen in incendiary politics and insurrectionary activities. And despite economic woes at home, Iran chooses to spend its oil revenues on “guns” rather than “butter”: acquiring a provocative naval capability in the Persian Gulf, purchasing ballistic missiles that can strike U.S. interests throughout the region, and—most menacing of all—investing heavily in programs to develop weapons of mass destruction.

In recent years, political leaders across the American political spectrum have highlighted the danger Iran poses to U.S. national interests and the consequent need to take bold action to “contain” Iran’s rogue capabilities.

This effort is likely to take on even greater urgency in the months to come. Given the systemic nature of the Iranian threat—arising not from a single personality, as is the case with Saddam Hussein in Iraq, but from a comprehensive, world view propagated by a state—it is of paramount importance to understand all aspects of Iranian strategy, politics, and economics.

In that context, The Washington Institute is pleased to publish the first of three complementary research studies that comprise our “Focus on Iran” series. Written by the finest scholars from around the world, these monographs present fresh information and expert analysis on the issues that matter most to U.S. regional interests—the nature of the Iranian military threat, the strengths and vulnerabilities of the Iranian economy, and the likely winners in the battle for political power now underway in Tehran. Together, these special Policy Papers constitute a comprehensive briefing for policymakers, journalists, diplomats, and others concerned about the “worst-case scenario” facing America and its allies at the end of the twentieth century—a nuclear-armed Islamic Republic of Iran.

In this inaugural study in the Iran series, The Washington Institute’s military affairs fellow, Michael Eisenstadt, presents a definitive assessment of Iranian military developments since the end of the Gulf War. Through exhaustive research, he examines Iran’s efforts to build its conventional and nonconventional arsenals as well as the impact of diminishing oil revenues on Tehran’s rearmament drive. Though many of Iran’s ambitious plans have been delayed due to lack of funding, Eisenstadt argues that three areas continue to receive top priority, even as ordinary Iranians protest the worsening economy: support for international terrorism, development of an aggressive naval capability in the strategic Straits of Hormuz, and the acquisition of weapons of mass destruction. The implications are sobering, as these capabilities all target U.S. interests, including U.S. allies (such as Israel and Saudi Arabia) as well as U.S. assets and personnel stationed in the Gulf.

As Americans confront the dangers Iran and its acolytes pose throughout the world, we hope that this and subsequent Policy Papers in the “Focus on Iran” series will provoke increased awareness of the challenges ahead.

Michael Stein
President

Barbi Weinberg
Chairman

EXECUTIVE SUMMARY

In 1989, following a costly eight-year war with Iraq, Iran initiated a major military build-up intended to rebuild, expand, and modernize its ravaged armed forces and thereby transform itself into a regional military power. Iran's quest for nuclear weapons, its naval build-up in the Persian Gulf, its efforts to undermine the Arab-Israeli peace process, and its support for radical Islamic movements throughout the Middle East raise disturbing questions about Tehran's intentions and the long-term implications of its efforts to bolster its military capabilities.

Iran's economic woes, however—which have been exacerbated by U.S. sanctions—have forced it to pare back its military procurement plans. Iran's economy is in a crisis spurred by declining oil revenues (due to low oil prices), rapid population growth, the lingering costs of its war with Iraq, government mismanagement of the economy, and a rapidly growing foreign debt (more than \$35 billion) that has impaired its access to international credit markets. These economic problems have forced Iran to reduce defense spending, cut procurement by half, cancel arms contracts, defer or stretch out procurement of key items, and prioritize the allocation of scarce financial resources among the various branches of its armed forces. Lacking the funds to sustain a major, across-the-board military build-up, Iran has had to content itself with selectively enhancing its military capabilities.

Iran's economic situation is likely to deteriorate further in the near- to mid-term. Oil is central to Iran's economy, and real oil prices are unlikely to rise significantly in the coming years while Iran's debt service burden will increase. Under these circumstances, Iran will find it increasingly difficult to sustain even current levels of military spending.

Notwithstanding these severe economic constraints, Tehran continues to invest significant resources in its nonconventional weapons programs, which remain among the regime's top priorities. Its current efforts focus on creating the infrastructure needed to produce nuclear weapons, stockpiling chemical and biological weapons, and acquiring or producing rockets and missiles to deliver them.

Iran is pursuing the acquisition of nuclear weapons, despite being a signatory to the Nuclear Nonproliferation Treaty. Because Iran's nuclear program is believed to be in its early stages, there are few unambiguous indicators of nuclear intent at this time. The U.S., German, Israeli, and Russian intelligence services are unanimous, however, in their view that Iran is trying to develop or acquire nuclear weapons. Moreover, Iran's procurement activities in the past decade are not entirely consistent with a peaceful nuclear program and thus raise suspicions about its intentions.

Iran is still probably assessing its nuclear options and may not yet have settled on a particular proliferation route. Most public estimates of the time Iran will need to attain a nuclear capability range between seven and fifteen years, although Tehran could probably acquire a nuclear capability sooner if it were to receive fissile material and extensive help from abroad. Because of the uncertainties involved, it is impossible to predict how long it could take Iran to develop nuclear weapons. There is no question, though, that the acquisition of civilian research reactors, nuclear power plants, and nuclear technology from Russia and China will ultimately aid this effort. Without such outside help, Iran will face formidable obstacles to realizing its nuclear ambitions.

The evidence for Iran's involvement in the production of chemical and biological weapons is much less ambiguous than that relating to its nuclear effort. Iran has the most active chemical warfare program in the developing world. It can produce several hundred tons of chemical agents a year and may have produced as much as 2,000 tons of agents to date—including blister (mustard), choking (cyanidal), and possibly nerve (sarin) agents. It produces bombs and artillery rounds filled with these agents and probably has deployed chemical missile warheads.

With respect to biological weapons, Iran is probably researching such standard agents as anthrax and botulin toxin and has shown interest in acquiring materials that could be used to produce various other toxins. Currently, Iran can probably deploy biological weapons and disseminate them via terrorist saboteurs or spray tanks on aircraft or ships; more advanced means of dissemination, however—such as by unmanned aircraft or missiles—may currently be beyond its means. Approaching nuclear weapons in their destructive potential, biological weapons provide Tehran with a true mass destruction capability against which the United States currently lacks an effective defense—beyond deterrence.

The backbone of Iran's strategic missile force consists of 200-300 North Korean produced SCUD-B and -C missiles (with ranges of 320 km and 500 km respectively) and 200 or more Chinese CSS-8 missiles (with a range of 150 km). These are armed with conventional and perhaps chemical warheads. Iran's missiles can reach major population centers in Iraq, Saudi Arabia, and the smaller Arab Gulf states. In addition, Iran is funding North Korea's development of the Nodong-1 missile, which—with its 1,300-km range—will be able to strike Israel. The project is reportedly plagued with technical and financial problems, however, and it may be a year or more before the missile attains operational status and is transferred to Iran.

In contrast, Iran's conventional capabilities are relatively modest. Tehran would require tens of billions of dollars, which it does not have at this time, to become a major conventional military power. Due to its financial problems, Iran has acquired only a fraction of the items on its military wish list. Nonetheless, Iran is trying to build on its strengths while attempting to redress its most critical weaknesses by selectively modernizing its armed forces.

Iran's offensive options are limited. Its ground forces do not pose a threat to any of its neighbors, due to their small size and poor condition. Tehran can, however, launch limited air strikes against neighboring countries and has done so several times in Iraq in recent years. The main conventional challenge from Iran, from the point of view of the United States and its allies in the Gulf, is in the naval arena—specifically, Tehran's ability to threaten the flow of oil from the region, the security and stability of the southern Gulf states, and the ability of the United States to project power in the region.

Iran could use its mines, shore-based antiship missiles, and submarines to disrupt maritime traffic in the Persian Gulf and could *temporarily* close the Strait of Hormuz if it were willing to use chemical and biological weapons against shipping (a scenario it has rehearsed in recent exercises). It cannot, however, block the strait, which is simply too wide and deep to be obstructed. And though the Gulf presents a significant barrier to major acts of aggression against the southern Gulf states, Iran could conduct limited amphibious operations to seize and hold lightly defended islands or offshore oil platforms in the Gulf, or use naval special forces to disrupt oil production and maritime traffic by sabotaging harbor facilities, oil platforms and terminals, and by attacking ships in port in the lower Gulf.

Doing so, however, would harm Iran as much as any other state, since it has no other means to bring its oil to market. Therefore, this is an option of last resort for Iran, to be used only *in extremis* if its vital interests were threatened or if Iran were itself denied use of the strait. In the near term, Iran is more likely to use the *implied* threat of disrupting shipping or closing the strait to intimidate its neighbors and deter its adversaries. Nonetheless, the United States must plan to deal with Iran's growing ability to disrupt the flow of oil from the Gulf, even if it seems unlikely that Iran would use this capability under current circumstances.

Iran's capacity for subversion and terror remains one of its few levers in a confrontation with the United States. In such an event, Iran might try to subvert the southern Gulf states that host U.S. military facilities in order to undercut U.S. power projection capabilities in the region. In addition, Tehran's ties with the Lebanese Hezbollah provide the means to launch a terrorist campaign spanning several continents. Although neither Iran nor Hezbollah has targeted U.S. personnel or interests since 1991, Iran is keeping its options open: Iranian agents continue to surveil U.S. installations and could resume attacks on U.S. interests in the Middle East, Europe, South America, and elsewhere. And although the country's financial woes have forced cuts in funding for Iran's intelligence services in recent years, their ability to mount terrorist spectacles has probably not been hampered because such operations cost relatively little.

Thus, the primary threat that Iran poses to U.S. interests comes from the two extremes of the threat spectrum: nonconventional weapons at one end and Tehran's capacity for subversion and terror at the other—the United States will find both difficult to counter.

An Iran armed with nuclear or biological weapons (the latter is probably already a reality) would raise the potential risks and costs of U.S. military intervention in the Persian Gulf and reduce the freedom of action of the United States and its allies there. Moreover, Tehran has in the past demonstrated its ability to use terrorist surrogates to strike painful blows against U.S. interests while obscuring its involvement in such acts in order to escape retribution. The United States also faces a secondary threat to its interests in the form of Iran's naval build-up in the Persian Gulf. Although the United States is reasonably well prepared to deal with this threat, Iran could nonetheless disrupt the flow of oil from the Gulf, and inflict losses on U.S. naval forces there.

A major confrontation with the United States could be devastating for Iran, however, resulting in the destruction of its military and civilian infrastructure, and leaving it without the ability to defend itself by conventional means. Moreover, hard experience over the past decade has shown Iran that it has neither the funds to replace significant combat losses nor a reliable supplier capable of doing so. An open provocation by Iran could also invite the imposition of stiff sanctions like those imposed on Iraq after its invasion of Kuwait. Having observed at close range the devastating impact these sanctions have had on Iraq, the *mullahs* are unlikely to follow Saddam Hussein's example. Thus, for the foreseeable future, Iran will try to avoid a confrontation with the United States.

Nonetheless, under current circumstances a miscalculation by either side could lead to an unintended clash along the lines of the accidental downing of an Iranian civilian airliner by the *U.S.S. Vincennes* in July 1988. And if domestic unrest in Iran were to increase to the point of threatening the regime, Tehran—perhaps perceiving an American hand behind these developments—might launch a wave of terrorist attacks against U.S. interests in “retaliation.” The challenge for U.S. policy, then, is to maintain pressure on Tehran without provoking it to lash out in anger or desperation by means of terrorism.

To date, U.S. policy toward Iran has produced mixed—albeit generally positive—results. On the one hand, the United States (and its G-7 partners) have clearly not succeeded in altering or moderating Iranian policies through either political engagement *or* economic pressure. Tehran continues its efforts to develop nuclear weapons, expand and modernize its armed forces, support terror and subversion, and undermine the Arab-Israeli peace process, while its violations of human rights at home continue unabated. And it is unlikely to change any of these policies, given that the country's leadership uniformly views these as core components of its foreign, defense, and domestic policies.

At the same time, the United States has had mixed success in its efforts to build an international consensus regarding the nature of the Iranian threat. The G-7 states, for example, agree that Iran's conventional and nonconventional military ambitions pose a threat and they have imposed tight restrictions on the transfer of many types of dual-use technology to

Iran, while banning the transfer of arms and nuclear technology outright. They remain unwilling, however, to forgo billions of dollars in business and have thus refused to join the United States in imposing a *total* ban on trade with Iran. Meanwhile, Russia, China, and North Korea continue to transfer dangerous arms and technology to Iran in an almost unconstrained fashion.

On the other hand, the most important achievement of U.S. policy has been its success in curbing Iran's troublemaking potential by denying it arms, technology, and financing. U.S. political pressure, *demarches*, and interdiction operations have thwarted several major conventional arms deals and countless smaller ones; cut Iran off from Western arms and technology suppliers, thereby forcing it to rely on less advanced sources such as China and North Korea; and hindered procurement of spare parts for Iran's armed forces, making it more difficult for Iran to maintain its existing force structure. In addition, Iran's economic woes—which have been exacerbated by U.S. economic sanctions—have forced it to cut military procurement and delayed its efforts to acquire conventional and nonconventional weapons.

Sanctions, like wars, are often better judged by what they prevent than by what they accomplish. Thus, to the degree that U.S. policy toward Iran has prevented Tehran from becoming more of a threat than it is now, U.S. policy must therefore be judged an overall success. Though sanctions have not forced Tehran to change its policies, they have succeeded in denying it the means to carry out some of these policies. And because Russia, China, and North Korea continue to sell Iran arms and nonconventional weapons technology (despite U.S. efforts to block these transfers), *economic* measures that hamper Tehran's ability to raise the hard currency required for these purchases remain a key part of efforts to contain Iran *militarily*.

Continued efforts to deny Tehran loans, credits, and hard currency in the coming years—at a time of increasing economic distress—will force it to spend more on butter than guns in order to alleviate the dire circumstances of the Iranian people and thereby forestall perhaps greater domestic unrest. The U.S. decision in May 1995 to impose a total ban on trade with Iran was thus a step toward further tightening the financial screws on the regime. Despite Washington's inability to convince its allies to adopt similar measures, the ban has exacerbated Iran's already severe economic situation and is expected to reduce its annual oil income by \$100-300 million and its non-oil exports by \$1-2 billion (although unexpectedly high oil prices in the first quarter of 1996 somewhat mitigated the impact of the sanctions). Unilateral U.S. sanctions have thus already had an important short-term economic impact, and in the long-term, may not only affect Iran's economy and its military capabilities, but perhaps even help create the conditions that could gradually bring about a change in the nature of the regime in Tehran.







“I worry about a place like Iran in the years to come. In its support for terrorism, I think Iran is a potential threat to the whole region. Its actions in the Strait of Hormuz recently, all of that leads you [to] wonder what their aims are.”

*General John Shalikashvili
Chairman, Joint Chiefs of Staff
New York Times Magazine, May 21, 1995*

“Iran remains the single greatest long-term threat to peace and stability in the [Middle East].”

*General J. H. Binford Peay III
United States CENTCOM 1995 Posture Statement*

“By virtue of geography, military strength, economic potential, demographics, and hegemonic aspirations, Iran poses the greatest long-term threat to peace and stability throughout [the Middle East].”

*General Joseph P. Hoar
United States CENTCOM 1993 Posture Statement*

“Iran has the potential of becoming the regional superpower, or minisuperpower, to replace Iraq in the Persian Gulf. Iran will realize that potential if left undisturbed.”

*Major General Uri Saguy
Director of Israeli Military Intelligence
Yediot Aharonot, April 17, 1992*



INTRODUCTION

In 1989, following a costly eight-year war with Iraq, Iran initiated a major military build-up intended to rebuild, expand, and modernize its ravaged armed forces and thereby transform itself into a regional military power. Iran's quest for nuclear weapons, its naval build-up in the Persian Gulf, its efforts to undermine the Arab-Israeli peace process, and its support for radical Islamic movements throughout the Middle East raise disturbing questions about Tehran's intentions and the long-term implications of its efforts to bolster its military capabilities.

There are several aspects to Iran's military build-up. It is seeking nonconventional—nuclear, biological, and chemical—weapons and the means to deliver them. It is attempting to expand and modernize its conventional forces, with particular emphasis on enhancing its naval capabilities. And, together with the Lebanese Hezbollah, it has created a logistical infrastructure capable of supporting terrorist operations in the Middle East, Europe, and South America.

Iran's economic woes, however—which have been exacerbated by U.S. sanctions—have forced it to pare back its military procurement plans. Iran's economy is in a crisis spurred by declining oil revenues (due to low oil prices), rapid population growth,¹ the lingering costs of its war with Iraq, government mismanagement of the economy, and a rapidly growing foreign debt (more than \$35 billion) that has impaired its access to international credit markets.² Iran's economic problems have led to a general deterioration in socio-economic conditions in the country, sapping popular support for the regime and sparking a series of riots that have wracked many of its major cities since 1991.

Iran's economic problems have forced it to reduce defense spending, cut procurement by half, cancel arms contracts,³ defer or stretch out procurement of key items, and prioritize the allocation of scarce financial resources among the various branches of its armed forces. Lacking the funds to sustain a major, across-the-board military build-up, Iran has had to content itself with selectively enhancing its military capabilities.

¹ Until recently, the birth rate exceeded 3 percent per year. According to Iranian government sources, however, the birth rate has now fallen to 1.8 percent annually; see *Economist*, August 5, 1995, 41-42. If true, this reflects either a resounding success for government birth control policies or profound pessimism and socio-economic distress on the part of the population.

² Patrick Clawson, *Iran's Challenge to the West: How, When, and Why* (Washington, DC: The Washington Institute for Near East Policy, 1993), 24-37.

³ For instance, Iran has reportedly canceled more than \$5 billion in arms deals, including a contract for a MiG-29 assembly line; see *MEDNEWS*, March 1, 1993, 4.

The amount of money Iran is spending on its defense effort is unknown.⁴ The magnitude of Iranian defense expenditures can be gauged, however, from the amounts spent on arms imports. In 1989, the Majlis (Iran's legislature) allocated \$10 billion over a five year period for foreign military procurement. Actual spending on arms imports, however, fell short of this goal, with outlays reaching \$1.625 billion in 1989-90; \$1.6 billion in 1990-91; \$1.678 billion in 1991-92; \$808 million in 1992-93; and \$850 million in 1993-94.⁵

Iran's economic situation is likely to deteriorate further in the near- to mid-term. Oil is central to Iran's economy, and real oil prices are unlikely to rise significantly in the coming years as world oil supplies are expected to increase faster than demand.⁶ Thus, Iran's oil income is likely to remain more or less flat, while its debt burden⁷ and population are expected to grow, leading to a long-term decline in *per capita* income and a further deterioration in economic conditions.⁸ Under these circumstances, Iran will find it increasingly difficult to sustain even current levels of military spending.

IRAN'S MOTIVATIONS

In seeking to build up its military capabilities, Iran is motivated by a desire to attain power, prestige, and influence; achieve military self-sufficiency; and strengthen its deterrent capability. More specifically, the build-up is intended to accomplish several objectives:

- replace equipment destroyed or damaged in combat during the Iran-Iraq War;

⁴ Expenditures for Iran's nonconventional weapons programs are unpublished or hidden in other parts of the budget, so the dimensions of this effort cannot be accurately assessed. For instance, Iran hid the costs of its now (presumably) defunct military reconnaissance satellite program (estimated at between \$900 million and \$1.95 billion) in the budget for its civilian communications satellite program. See *Resalat*, August 16, 1993, 3, 5, 6, and 15 in FBIS-NES, September 21, 1993, 11.

⁵ These are Iran Central Bank figures; see *Iran Brief*, December 4, 1995, 11. They are calculated on the basis of the Iranian fiscal year, which starts in March, and are generally consistent with estimates of Iranian spending published elsewhere. See, for example, *FT*, February 8, 1993, 4; IRNA, March 2, 1993, in FBIS-NES, March 3, 1993, 39; and Andrei Volpin, *Russian Arms Sales Policy toward the Middle East*, Policy Focus, no. 23 (Washington, DC: The Washington Institute for Near East Policy, 1993), 14.

⁶ *MEED*, April 19, 1996, 2-3.

⁷ Although Iran succeeded in renegotiating more than \$12.7 billion in short-term debts in 1994, the debt service crunch associated with these outstanding obligations is expected to reach \$4.6 billion a year for the next four or five years. At this rate, it will siphon off more than 25 percent of Iran's anticipated annual oil income, imposing a major burden on Iran's economy. See *MEED*, January 14, 1994, 14; *MEED*, August 19, 1994, 2-3; and *Iran Brief*, February 6, 1995, 4.

⁸ Eliyahu Kanovsky, "The Economy of Iran: Past, Present, and Future," System Planning Corporation, Rosslyn, VA, April 1992, 4-5, 74-79.

- enable Iran to dominate the Persian Gulf;
- enable Iran to intimidate its Arab neighbors in order to influence oil production and price decisions and to press outstanding territorial claims;
- acquire the capability to close the Strait of Hormuz during a crisis in order to control the flow of oil from the Gulf (20 percent of the world's total) and thereby enhance its political and economic leverage;
- defend against the possibility of a resurgent Iraq;
- provide Iran with the ability to undermine U.S. influence in the region and deter it during a crisis by hindering its ability to project power in the Gulf;
- deter Israel or the United States from attacking its nuclear infrastructure;
- counter the post-Desert Storm military build-up by the Arab Gulf states.

These motives are critical to understanding Iran's intentions and the potential implications of its efforts to expand and modernize its armed forces.

Power, Prestige, and Influence

Iran's clerical leadership believes that the Islamic Republic plays a key role in world affairs as the standard bearer of revolutionary Islam and guardian of oppressed Muslims everywhere. Accordingly, they believe that the fate of the Islamic community at large depends on Iran's ability to transform itself into a regional military power that can defend and advance the interests of that community. This also leads Tehran to support radical Islamic movements throughout the Middle East—to undermine U.S. influence in the region, make the regional and international environment more conducive to Iranian interests, and to burnish the regime's revolutionary Islamic credentials at home and abroad.⁹

Iran's leadership also believes that Iran is a regional power by dint of geography, demography, and resource endowments, and that destiny dictates that it be *the* dominant power in the *Persian* Gulf because it is the largest Gulf state, it has the longest coastline, and because it has vital economic interests there. This implies an ability to control the Gulf militarily and deny its use by others, to initiate and influence developments in the region, and to defend Iran's vital interests in the Gulf against the United States, Iraq, and Saudi Arabia. Thus far, however, the regime's image of Iran as a regional power has not been matched by corresponding military capabilities. Iran's military build-up is therefore intended to bridge this gap and allow Iran to assume what its leaders (and many Iranians) consider to be its rightful role as a key actor in the region and on the world stage.

⁹ Shaul Bakhash, "Iran's Islamic Foreign Policy" (paper presented at the U.S. Institute for Peace, Washington, DC, May 1994).

International Isolation and Military Self-Reliance

Revolutionary Iran's experience has fostered a strong emphasis on self-reliance. Under the Shah, Iran enjoyed the support of a superpower patron—the United States—and depended on the United States and the UK for nearly all of its arms. Following the 1979 revolution, Iran was isolated internationally and during the Iran-Iraq War faced Iraq virtually alone. Tehran's sense of isolation was heightened by the apathetic international response to Iraq's use of chemical weapons against it. In addition, a U.S.-led arms embargo during the war (Operation Staunch) greatly complicated Iran's efforts to replace its wartime losses and sustain its war effort. The bitter legacy of the Iran-Iraq War has therefore bred a determination that these experiences not be repeated. As a result, Iran has tried to develop its military industries in order to reduce its reliance on foreign arms suppliers, diversify its arms supply sources to minimize the potential impact of future embargoes, and to build a large, effective military, capable of dealing with the range of potential threats facing the country.¹⁰

Deterring Perceived Threats

Iran's build-up is also motivated by a desire to enhance its deterrent capability. At various times in the past, revolutionary Iran has seen the Soviet Union, Iraq, the United States, and Israel as potential threats. Although the disintegration of the Soviet Union and the 1991 Gulf War enhanced Iran's security situation in the short term, Tehran believes that in the long term it must be able to counter threats it could face from Iraq, the United States, and Israel.

The Soviet Union was the only country capable of invading and occupying large parts of Iran. Thus, the demise of the Soviet Union and the creation of a number of independent republics along Iran's northern border eliminated the only real threat to its independence—although this has created a whole new set of concerns that instability in Central Asia (as well as Afghanistan) could spill over into Iran and undermine government control of peripheral regions.¹¹

The defeat of Iraq in the Gulf War likewise enhanced Iran's military situation. The war and its aftermath resulted in the dismantling of Iraq's known nuclear infrastructure and significant reductions in its missile force and chemical and biological warfare capabilities. Iraq's conventional military capabilities have also been greatly reduced, and though Baghdad's armed forces are still the largest in the Gulf region, war and sanctions have significantly weakened them.¹²

¹⁰ Shahram Chubin, *Iran's National Security Policy: Capabilities, Intentions, and Impact* (Washington, DC: Carnegie Endowment for International Peace, 1994), 17-28.

¹¹ *Ibid.*, 6-8.

¹² Michael Eisenstadt, *Like a Phoenix from the Ashes? The Future of Iraqi Military Power* (Washington, DC: The Washington Institute for Near East Policy, 1993).

Since the 1991 Gulf War, the United States has reduced the size of its armed forces in a way that could limit America's future ability to intervene in the Gulf, particularly if it has to respond simultaneously to another crisis in a different part of the world. This is potentially a net gain for Iran. On the other hand, the United States has dramatically augmented its permanent presence in the Gulf since Operation Desert Storm, and Tehran sees this as a negative development.

Finally, Iran's civilian and military leadership remember Israel's June 1981 air strike on Iraq's Osiraq nuclear reactor, particularly because senior Israeli military leaders have openly alluded to the possibility of a similar attack on Iran's nascent nuclear infrastructure.¹³

Senior Iranian officials, however, have expressed a broad range of views concerning Iran's post-Gulf and Cold War threat environment. Former Iranian Defense Minister Akbar Torkan provided one perspective in a 1993 interview:

Around us we do not see any country which would be a threat. We have the best of relations with Pakistan. Afghanistan is a poor country which for the next 20 years will have to spend whatever money it has on reconstruction. We have very good relations with Turkey and [they] do not feel we are a threat to them. Iraq is a country which is trying to avoid being dismembered. The countries to the south of us are very small and weak and need us to help defend them. So no-one is threatening us. Our priority is to rebuild the country.¹⁴

Concerning the United States, Torkan added:

I do not subscribe to the view that the Americans are looking for trouble and want to attack us. The U.S. does not have any reason to attack us. Right now the Americans have many problems throughout the world and have to deal with them first. It is not logical for a country which is reducing its military bases around the world, and wants to reduce its military budget, to attack us. At the same time, we do not want to enter a war with the Americans either.¹⁵

More recently, in a 1995 interview Army Chief of Staff Major General 'Ali Shahbazi reached a similar conclusion, albeit for somewhat different reasons:

¹³ In a June 1992 interview, IAF Commander Major General Herzl Bodinger warned that if Israel receives a report that "any country in the region is getting close to achieving a nuclear capability" and if efforts to prevent that eventuality "by political means" fail, it "may consider an attack" on the facilities; see Kol Yisrael, June 15, 1992, in FBIS-NES, June 16, 1992, 16-17. For the response by Iranian air force commander Brigadier General Mansur Sattari, in which he warned that "any adventurism on [Israel's] part against Iran would cost it dearly," see IRNA, June 17, 1992, in FBIS-NES, June 18, 1992, 40. See also the December 1994 comments by Major General 'Uzi Dayan, chief of the IDF Planning Branch, that "a significant leap forward in Iran and Iraq's nuclear capability could force Israel to make a decision [concerning the use of force] as early as 1995," in *Yediot Aharonot*, December 30, 1994, 2, in FBIS-NES, January 3, 1995, 40.

¹⁴ *FT*, February 8, 1993, 4.

¹⁵ *Ibid.*

[The] domineering U.S. attitude toward the Persian Gulf region poses immense dangers for the region, its security, and also for all the countries of the world. [It is] obvious that the extensive U.S. presence in the Persian Gulf should be considered an overt threat to us. However, in the event of a military incident, the Armed Forces of the Islamic Republic of Iran . . . will be able to counter any kind of threat. But a military confrontation by these forces with Iran would be counter to U.S. interests in the region and ultimately would be to their disadvantage. This is because the United States or some country incited by it may be able to begin a military conflict but it will not be strong enough to end it. This is because only Muslims believe that "whether we kill or are killed, we are the victors." Others do not think this way.¹⁶

Not all Iranian defense officials share this assessment, however. Washington's condemnation of Iran's nuclear ambitions and subsequent efforts to isolate it by imposing a total trade ban in May 1995, its creation of a U.S. Fifth Fleet for the Persian Gulf, and its support for the United Arab Emirates in the latter's conflict with Iran over Abu Musa island and the Tunbs have reinforced the paranoia of some of Iran's leaders, and encouraged alarmist assessments of American intentions.

Thus, immediately after the United States announced in April 1995 its intent to impose a total trade ban on Tehran, Iranian Revolutionary Guard Corps (IRGC) Commander Major General Mohsen Reza'i declared in a speech to IRGC personnel that

All the provocations and evidence indicates that the United States is preparing for war against the Islamic Republic of Iran, and we, too, . . . are prepared to respond to any threatening action. Our fight with the United States is inevitable, and the fate of everything will be determined by this fight and conflict. One day, ultimately, we must begin our fateful operations against the United States; hence, the forces and the commanders of the Guard Corps must have the necessary capability and readiness. . . .¹⁷

Reza'i has traditionally toed a hard line toward the United States, although under current circumstances his assessment may be shared by other Iranian leaders.¹⁸ It is significant, however, that Razai's warnings have not been echoed by others, nor has Iran taken any visible steps to prepare for hostilities. Moreover, while senior officials such as Supreme Guide 'Ali Khamene'i, President 'Ali Akbar Hashemi-Rafsanjani, Majlis Speaker 'Ali Akbar Nateq-Nuri, and Foreign Minister 'Ali Akbar Velayati have expressed

¹⁶ *Ettela'at*, September 24, 1995, 3, in FBIS-NES, October 3, 1995, 75.

¹⁷ *Jomhuri-ye Eslami*, May 1, 1995, 3, in FBIS-NES, August 23, 1995, 68-69; *Mideast Mirror*, May 1, 1995, 16-17; and *al-Muharrir*, May 8, 1995, 8, in FBIS-NES, June 6, 1995, 58-59. Interestingly, Reza'i has evinced little concern over the possibility of an Israeli preventive strike against Iran's nuclear installations, stating that Iran would "undoubtedly respond sharply" to such an attack, although "I think Israeli threats against us are not serious, because if they were they would not have announced them in the first place"; see *Resalat*, September 24, 1995, 4, in FBIS-NES, October 5, 1995, 54.

¹⁸ Thus, army ground forces commander Brigadier General Ahmad Dadbin, in a June 1996 interview, warned "the Americans [to] think twice before attacking us," although he gave no indication that he believed an attack was likely. See *JDW*, June 12, 1996, 27.

anger over the U.S. embargo and anxiety over the U.S. military presence in the Gulf, they have not expressed the belief that a confrontation with the United States is imminent or inevitable. Rather, they have emphasized that recent U.S. actions are consistent with previous efforts to isolate Iran and undermine its regime, and that they will backfire on Washington by rallying the Iranian people behind the regime and isolating the United States from its allies in Europe and the Gulf.⁹⁹

Given the confusing picture that emerges from the various contradictory statements issued by senior Iranian officials, it is prudent to assume that worst-case assumptions about the nature of the threat guide Iranian long-term planning. Accordingly, the possibility of a confrontation with the United States or a revitalized Iraq, or of an Israeli preventive strike against Tehran's nascent nuclear program, probably forms the basis of contingency planning by the Iranian military. And in light of rising tensions between Tehran and Washington, some Iranians may believe that the period of reduced threat that followed the 1991 Gulf War—which offered Iran an opportunity to fill the power vacuum created by the defeat of Iraq, to mend fences with the Arab Gulf states, and to rebuild its military capabilities unhindered—may now be over.

The impact that Iranian perceptions of the regional threat environment and U.S. intentions could have on Iranian behavior and risk-taking is not clear. The fact that some senior IRGC officers may believe that war between the United States and Iran is inevitable could increase the potential for a miscalculation by Iranian commanders in the Persian Gulf. U.S. and Iranian forces operate in proximity to each other twenty-four hours a day, and in the confined waters of the Persian Gulf, they may have very little time—in some cases just seconds—to react to moves they perceive as threatening. In such circumstances, there is an ever-present possibility of an inadvertent clash, perhaps along the lines of the accidental downing of an Iranian civilian airliner by the *U.S.S. Vincennes* in July 1988.

Iran's leaders, however, have demonstrated that they are not inclined to rash action. They are averse to risk, shun direct confrontation, and generally prefer to act through surrogates (using covert action or terrorism) in order to preserve deniability and create ambiguity about their intentions. For now, they seem determined to avoid a confrontation with the United States that they are certain to lose. Barring blatant provocations on their part, there is no reason to believe that the United States and Iran are headed toward a confrontation, although tensions between the two are likely to remain high as long as Tehran continues with its current policies.

⁹⁹ See, for example, the comments of Iranian Foreign Minister Velayati carried by IRNA, May 31, 1995, in FBIS-NES, May 31, 1995, 60; and by *Le Figaro*, June 9, 1995, 3, in FBIS-NES, June 9, 1995, 61-62. See also Iranian President Rafsanjani in an interview on Iran TV, May 9, 1995, in FBIS-NES, May 16, 1995, 59-60.



I IRAN'S NONCONVENTIONAL FORCES

Iran's nonconventional weapons programs are among the regime's top priorities. As a result, Tehran continues to invest significant resources in these efforts despite severe economic constraints. Its current efforts focus on the creation of the infrastructure needed to produce nuclear weapons, the stockpiling of chemical and biological weapons, and the acquisition or production of rockets and missiles to deliver them.

NUCLEAR WEAPONS

Iran is pursuing the acquisition of nuclear weapons, despite being a signatory to the Nuclear Nonproliferation Treaty (NPT). Because Iran's nuclear program is believed to be in the early stages, at this time there are few unambiguous indicators of nuclear intent. The U.S., German, Israeli, and Russian intelligence services are unanimous, however, in their belief that Tehran is trying to develop or acquire nuclear weapons.¹ Moreover, Iran's procurement activities during the past decade are not entirely consistent with a peaceful nuclear program and thus raise suspicions about its intentions.

Iran is still probably assessing its options, and may not yet have settled on a particular proliferation route.² Most public estimates of the time Iran will need to attain a nuclear capability range between seven and fifteen years, although Tehran could probably acquire a nuclear capability sooner if it were to receive fissile material and extensive help from abroad.

¹ R. James Woolsey, director of central intelligence, testimony to the Senate Governmental Affairs Committee, February 24, 1993, 8; Hamburg Deutsche Presse Agentur, December 5, 1992, in FBIS-WEU, December 7, 1992, 23; *Welt Am Sonntag*, December 6, 1992, 26, in FBIS-NES, December 16, 1992, 61; and Major General Uri Saguy, director of Israeli Military Intelligence, remarks to Israel TV, February 28, 1993, in FBIS-NES, March 3, 1993, 22. A 1993 Russian FIS (successor to the Soviet KGB) report asserted that Iran "has a program for military-applied research in the nuclear sphere" although it indicated that "without outside scientific and technical assistance, the appearance of nuclear weapons in Iran in the millennium is unlikely"; see *A New Challenge After the Cold War: Proliferation of Weapons of Mass Destruction* (Moscow: Russian FIS, 1993), in JPRS-TND, March 5, 1993, 28. A 1995 Russian FIS report updating this earlier assessment stated that "there is not sufficient evidence that [Iran] has a *coordinated* and *integrated* military nuclear program" [*emphasis added*]. See *Treaty on the Non-Proliferation of Nuclear Weapons: Problems of its Prolongation* (Moscow: Russian FIS, 1995), 56-59. Notwithstanding the carefully crafted language, the latter assessment essentially confirms the earlier judgment that Iran is seeking to develop nuclear weapons, although it implies that the program lacks focus and direction.

² David Albright, "An Iranian Bomb?" *Bulletin of the Atomic Scientists*, July-August 1995, 23, 25.

Because of the uncertainties involved, it is impossible to predict how long it could take Iran to develop nuclear weapons (see Appendix II).³ There is no question, though, that the acquisition of civilian research reactors, nuclear power plants, and nuclear technology from Russia and China will ultimately aid this effort. Without such outside help, Iran will face formidable obstacles to realizing its nuclear ambitions.

Iran's Motives for Acquiring the Bomb

There are a number of reasons why Iran is trying to develop or acquire nuclear weapons:

- Nuclear weapons would transform Iran into a regional military power, provide it with the means to intimidate its neighbors, and enable Iran to play the role that its leadership believes is rightfully its due.
- Nuclear weapons may be the only way for Iran to become a regional military power without destroying its economy. A bomb could cost billions; rebuilding its conventional military would cost *tens* of billions.⁴
- The Iran-Iraq War highlighted Iran's strategic vulnerability and the importance of having a powerful deterrent to deal with Iraq, which probably still harbors nuclear ambitions and retains a significant conventional edge and residual chemical and biological warfare capabilities.
- It is surrounded on three sides by nuclear possessor or threshold states: Israel and Iraq to the west; Russia, Ukraine, Belarus, and Kazakhstan to the north; Pakistan and India to the east; and a nuclear-armed U.S. Navy to the south.

In addition, because Iraq's chemical and biological warfare capabilities did not deter the United States during the Gulf War, Tehran may believe that in the event of a military confrontation with Washington, only a nuclear capability could deter the United States, and thereby enable Iran to avert a disaster. This consideration may have been behind the recent comment by former Defense Minister Akbar Torkan when he told an interviewer:

³ The most frequently cited estimates posit an eight- to ten-year timeframe. See, for example, remarks by Robert M. Gates, director of central intelligence, to the Comstock Club, Sacramento, California, December 15, 1992; and testimony by his successor, R. James Woolsey, to the U.S. Senate Governmental Affairs Committee. By comparison, a 1993 Russian FIS report estimated that even with the necessary levels of investment and outside assistance, Iran would probably need *at least* ten years to develop nuclear weapons; see FIS, *A New Challenge After the Cold War*, 57-58. The seven- to fifteen-year estimate was offered jointly by U.S. Defense Secretary William Perry and Israeli Prime Minister Yitzhak Rabin; see *NYT*, January 10, 1995, A3.

⁴ The South African nuclear program, for example, reportedly produced seven bombs at a cost of only \$500 million, which is less than a squadron of modern fighter aircraft; see Waldo Stumpf, "South Africa's Nuclear Weapons Program: From Deterrence to Dismantlement," *ACT* 25, no. 10 (December 1995-January 1996): 6. This figure, however, does not account for the fact that much of the infrastructure required to build the South African bomb was already in place when the program started; the Iranian effort is starting almost from scratch.

Can our air force . . . take on the Americans, or our navy take on the American navy? If we put all our country's budget into such a war we would have just burned our money. The way to go about dealing with such a threat requires a different solution entirely.⁵

Finally, statements such as those of Deputy President Ataollah Mohajerani, who in an October 1992 interview said that "because the enemy [Israel] has nuclear facilities, the Muslim states too should be equipped with the same capacity," have fed concerns about Iran's nuclear ambitions. Although this statement was subsequently repudiated, it nonetheless raises questions about Iran's ultimate intentions.⁶

Iran's Nuclear Infrastructure

Iran's nuclear effort dates to the era of the Shah, who established ambitious programs in both civilian and military spheres. The civilian program entailed the construction of twenty-three nuclear power plants; work on two had begun at the time of the Islamic revolution. The military program is not believed to have gone much beyond basic research concerning the fundamentals of producing plutonium and enriched uranium and basic weapons-design work. Both programs were shelved following the overthrow of the Shah in 1979.⁷ The Islamic Republic, however, revived the civilian program by 1984, and the military program by 1987.⁸

Iran's known nuclear technology base is at present rather rudimentary, although it is building an extensive civilian nuclear infrastructure that could serve as the basis for a weapons program.

Iran's largest reactor is a 5 MWt research reactor in Tehran that was built by the United States and commenced operation in 1967.⁹ Tehran is also the location of a small "hot cell" facility capable of separating gram quantities of plutonium from spent reactor fuel (not nearly enough for a weapon) as well as a small uranium ore concentration facility that is reportedly non-operational. The reactor and the associated reprocessing

⁵ *FT*, February 8, 1993, 4.

⁶ *WP*, November 17, 1992, A30.

⁷ For details, see Leonard S. Spector, *Nuclear Ambitions: The Spread of Nuclear Weapons, 1989-1990* (Boulder, CO: Westview Press, 1990), 203-18.

⁸ *Ibid.*, 204; and *NYT*, January 5, 1995, A10. For background, see Betsy Perabo, "A Chronology of Iran's Nuclear Program," *Eye on Supply*, fall 1992, 45-71; *al-Hayat*, November 25, 1992, 1, 4, in FBIS-SOV, November 27, 1992, 17; *Welt Am Sonntag* December 6, 1992, 26, in FBIS-NES, December 16, 1992, 61; *MEDNEWS*, June 8, 1992, 1-8; AFP, December 19, 1993, in FBIS-NES, December 20, 1993, 68; and *al-Sharq al-Awsat*, December 24, 1993, 1, in FBIS-NES, January 4, 1993, 48.

⁹ For years, the reactor operated sporadically due to a lack of fuel. In 1987, however, Iran signed an agreement with Argentina to replace the spent highly enriched uranium fuel core in the reactor with low enriched uranium fuel. This was accomplished recently. See Albright, "An Iranian Bomb?" 25; and Greg Gerardi and Maryam Aharinejad, "An Assessment of Iran's Nuclear Facilities," *Nonproliferation Review* 2, no. 3 (spring-summer 1995): 209-15.

facility are considered too small to support a clandestine nuclear program.¹⁰

Other major elements of Iran's overt civilian nuclear infrastructure include:

- at Karaj, a small Chinese calutron and a cyclotron supplied by Belgium;
- at Esfahan, a 27 KWt miniature neutron source reactor for producing radioisotopes, a heavy water moderated zero-power reactor, and two sub-critical assemblies (a light-water moderated sub-critical reactor and a graphite moderated sub-critical reactor), all supplied by China;¹¹
- at Saghand, uranium ore mines currently being assessed for their industrial potential.¹²

None of these facilities can produce fissile material for nuclear weapons, although some of the equipment now in Iran could help it to master the technologies and processes required to do so.

In all, Iran has approached officials and firms in more than twenty countries in its efforts to acquire nuclear technology, materials, and expertise.¹³ China is currently Iran's main supplier of nuclear technology, although if current contracts and agreements with Russia are consummated, Moscow will supersede Beijing in this role. In addition, Pakistan, Argentina, and perhaps North Korea may have provided some assistance at various times in the past.¹⁴ Iran may have also acquired nuclear know-how through its participation in the International Center for Theoretical Physics in Trieste, Italy. (The center, which hosts hundreds of nuclear physicists from the third world each year for advanced research, is run by a Pakistani scientist.)¹⁵ Finally, Iran has invited expatriate nuclear scientists and technicians who fled the country after the fall of the Shah to return home and resume their former positions, although it is not clear how many have done so.¹⁶

¹⁰ Albright, "An Iranian Bomb?" 25. See also Gerardi and Aharinejad, 213.

¹¹ The miniature reactors and sub-critical assemblies replicate processes that occur in larger reactors and are thus useful for training nuclear scientists and technicians and conducting basic physics experiments.

¹² Albright, "An Iranian Bomb?" 25; Gerardi and Aharinejad, 211-13; and Leonard S. Spector, Mark G. McDonough, and Evan S. Medeiros, *Tracking Nuclear Proliferation: A Guide in Maps and Charts, 1995* (Washington, DC: Carnegie Endowment for International Peace, 1995), 123.

¹³ These include Argentina, Azerbaijan, Brazil, China, Cuba, the Czech Republic, France, Germany, India, Italy, Kazakhstan, North Korea, South Korea, Mexico, Pakistan, Russia, South Africa, Spain, Sweden, Turkmenistan, and Ukraine. See Perabo, 47-63.

¹⁴ The status of Iran-Pakistan nuclear cooperation is unclear. In 1991, Pakistani Chief of Staff Mirza Aslam Beg argued in favor of nuclear collaboration with Iran but was overruled by the country's political leadership. Pakistan has since denied providing Iran with any nuclear assistance; see *NYT*, October 31, 1991, A7.

¹⁵ The center was rescued from bankruptcy in 1991 by a \$3 million Iranian loan; see *WP*, December 24, 1992, A8.

¹⁶ Perabo, 47-63.

IRAN'S NUCLEAR INFRASTRUCTURE

<u>Location</u>	<u>Activity</u>
Bonab	Nuclear research center; agricultural research.
Bushehr	Unfinished nuclear power plant (two 1,300 MWe reactors) built by Germany and slated for completion by Russia (one or two 1,000 MWe reactors). An additional power plant (two 440 MWe reactors) and a nuclear desalinization plant may be planned.
Darkhovin	Unfinished nuclear power plant (one 935 MWe reactor) that was to be built by France (construction never progressed beyond a site survey), and proposed site of nuclear power plant (two 300 MWe reactors) to be built by China.
Esfahan	Nuclear research center: site of Chinese-supplied 27 KWt miniature neutron source reactor, zero power reactor, and light-water and graphite moderated sub-critical assemblies.
Karaj	Center for Agricultural Research and Nuclear Medicine: agricultural radiochemistry lab, dosimeter lab, site of Chinese calutron and Belgian cyclotron.
Ma'alleh Kaleyah	Proposed site for canceled 10 MWt research reactor from India.
Saghand	Planned site for uranium mines.
Tehran	Nuclear research center at Tehran University: site of safeguarded 5 MWt research reactor, radioisotope production facility equipped with "hot cells," small lab-scale yellowcake production facility, laser research lab.
Yazd	University geology department: research relating to mining and exploitation of indigenous uranium ore deposits.

Nuclear Power

The centerpiece of Iran's overt nuclear effort is its civilian nuclear power program run by the Atomic Energy Organization of Iran (AEOI). According to AEOI chairman Reza Amrollahi, Iran plans to build ten nuclear reactors to produce approximately 20 percent of its electricity requirements.¹⁷ As a first step, Iran intends to complete the unfinished German nuclear power plant begun in Bushehr in 1975 but halted by the 1979 revolution, consisting of two 1,300 MWe reactors. Since 1984, Iran had tried unsuccessfully to enlist the help of nearly a dozen countries in an effort to restart construction on the plant.¹⁸ Finally, as part of a January 1995 nuclear cooperation accord, Moscow agreed to install one VVER-1000 reactor in Bushehr for a cost of \$800 million. About 300 Russian technicians are reportedly already at work on the project, although the total could reach 3,000. Work should be completed within four years.¹⁹

The Bushehr reactor faces several potential obstacles, however, including questions about the structural integrity of the original foundation and containment building (which was bombed during the Iran-Iraq War), the viability of installing Russian reactor hardware into structures configured for German components, and Iran's ability to pay. These problems could drive up costs and further delay the project.²⁰ Moreover, though the VVER-1000 is safer than earlier generations of Soviet reactors, it is a less reliable design more prone to breakdowns.²¹

As part of the January 1995 accord, Russia also offered Iran low-enriched uranium fuel (to be returned to Russia for reprocessing), training for personnel to operate the reactor, an option to purchase a 30-50 MWt light water research reactor, additional low power (less than 1 MWt) training reactors, an APWS-40 nuclear-powered desalination plant, 2,000 tons of natural uranium, training for ten to twenty AEOI employees annually (at the graduate student and Ph.D. level), a gas centrifuge plant (dropped at U.S. insistence during the May 1995 U.S.-Russia summit in Moscow), and a uranium mine.²² And according to press reports, Iran and Russia have also discussed the sale of two VVER-440/213 reactors.²³ The

¹⁷ *Mideast Mirror*, March 15, 1993, 27; and *Mideast Mirror*, January 10, 1995, 9.

¹⁸ These include Argentina, Brazil, China, the Czech Republic, France, Germany, India, Italy, South Korea, Spain, and Sweden.

¹⁹ *WP*, January 9, 1995, A18; *MEED*, March 17, 1995, 7; *CSM*, April 5, 1995, A1; *WP*, April 29, 1995, A8; and *WP*, May 4, 1995, A17.

²⁰ *NYT*, May 19, 1995, A1, A10.

²¹ R. Mussapi, R. Spiegelberg Planer, and S.D. Thomas, "An Evaluation of the Availability Factors of the WWER-440/230," in *The Nuclear Power Option*, IAEA, proceedings of an international conference in Vienna, September 5-8, 1994, 212-13.

²² For the full text of this agreement, see Appendix III. See also Albright, "An Iranian Bomb?" 22. The APWS-40 desalination plant is made by OKBM Mechanical Engineering and is powered by a BN-350 reactor; see *FR*, June 15, 1995, 6-7.

²³ *WT*, September 6, 1995, A13. An MOU concerning the sale of two VVER-440/213s was originally signed in March 1990, but negotiations have not yet led to a contract of sale. Iran considered building the two VVER-440/213s at Gorgan, but apparently abandoned the site because the region is earthquake prone. Bushehr is now considered a likely location.

fulfillment of these various follow-on deals would significantly augment Iran's overt nuclear infrastructure.

Iran has also reportedly concluded an agreement with China for the sale of two 300 MWe Qinshan-type reactors worth \$800-900 million for a nuclear power plant in the southwest of the country.²⁴ Disputes over the design, terms, and location of the facility, however, have delayed construction, and the future of the project is uncertain. The prototype reactor in China has experienced technical problems and uses a pressure vessel manufactured in Japan and coolant pumps from Germany; these countries are unlikely to approve the transfer of such items to Iran (although China claims that it can now manufacture them on its own). Press reports indicate that China informed the United States in September 1995 that the deal had been canceled, although Beijing subsequently claimed that the deal had simply been suspended for the time being.²⁵ China is also believed to be helping Iran build fuel cycle-related facilities.²⁶ It reportedly has discussed the provision of technology required for the mining and milling of uranium and the fabrication of reactor fuel (including the construction of facilities to produce uranium metal), and it recently began construction of a uranium conversion plant near Esfahan to produce uranium hexafluoride, which is used in various enrichment processes.²⁷

While Iran claims that its interest in nuclear power is motivated by a desire to eliminate shortfalls in its electric power generation capacity, this explanation is difficult to accept because Iran has the second largest natural gas reserves in the world. Natural gas is a much cheaper source of

²⁴ An MOU setting down the terms of the Chinese reactor deal was originally signed in September 1992, although it remains unclear whether a contract has actually been signed.

²⁵ *WP*, April 17, 1995, A1, A12; *WP*, April 18, 1995, A13; *NYT*, April 18, 1995, A1; *NYT*, May 14, 1995, A1; *WP*, May 18, 1995, A22; *NYT*, September 28, 1995, A1; and *NYT*, September 30, 1995, A4.

²⁶ The term "nuclear fuel cycle" refers to a sequence of stages through which nuclear fuel passes. The so-called "front end" of the cycle includes the mining of uranium; milling it into yellowcake; conversion to uranium metal or uranium oxide for use in natural uranium reactors, or to gaseous form for enrichment for use in other reactor types; and its fabrication into fuel. The "intermediate stage" of the cycle, in which the fuel is used to produce a controlled chain reaction in the reactor, is referred to as "irradiation." The "back end" of the cycle includes spent fuel storage (usually in pools at the reactor site that are filled with water, which helps reduce the radioactivity of the spent fuel); reprocessing (to reclaim residual amounts of uranium and plutonium in the fuel for recycling, and to separate out highly radioactive fission products); and the disposal of these radioactive waste products. The process is referred to as a cycle because the reclaimed uranium or plutonium from spent fuel can be recycled and reused as fresh fuel. For details, see William C. Potter, *Nuclear Power and Nonproliferation: An Interdisciplinary Perspective* (Cambridge, MA: Oelgeschlager, Gunn & Hain, 1982), 69-80; and Frank Barnaby, *How Nuclear Weapons Spread: Nuclear Weapons Proliferation in the 1990s* (New York: Routledge, 1993), 2-11.

²⁷ *WP*, April 17, 1995, A1, A12; *WT*, May 8, 1995, A1; *WT*, April 17, 1996, A1; and Albright, "An Iranian Bomb?" 25. China is also reported to have provided Iran with small quantities of uranium hexafluoride, which is used in the gas centrifuge, gaseous diffusion, and laser isotope methods of enrichment; see *Iran Brief*, December 5, 1995, 8.

energy than nuclear power when one considers total lifecycle costs (fossil fuels generally cost one-quarter to one-half the price of nuclear power), not to mention the risks posed by nuclear power and the problem of disposing of spent fuel. In light of this, it is likely that Iran's interest in nuclear power is at least partly due to its desire to use its overt civilian nuclear power program as a cover for a clandestine nuclear weapons effort.²⁸ Two special visits (in February 1992 and November 1993) by the International Atomic Energy Agency (IAEA) have failed, however, to reveal any clandestine weapons-related facilities or activities, either because the wrong sites were visited or because such facilities did not yet exist.

Possible Routes to the Bomb

Iran's procurement activities in the past decade indicate an interest in several possible proliferation routes and raise suspicions about its claims of peaceful nuclear research. Of greatest concern are its attempts to acquire:

- enriched uranium from poorly guarded facilities in Kazakhstan and Georgia;
- fuel fabrication and reprocessing technologies from Argentina;
- research reactors from Argentina, India, China, and Russia;
- nuclear power plants from Russia and China;
- gas centrifuge enrichment technology from Switzerland, Germany, and Russia;
- a uranium conversion plant from China.

Taken together, these activities point to a broad-based effort to acquire materials and technologies potentially useful to the production of nuclear weapons by way of all three routes available to potential proliferators: diversion, plutonium production, and uranium enrichment.

The Diversion Route. Among the most alarming of the aforementioned activities are Iran's apparent efforts to acquire fissile material from facilities in the former Soviet Union. Iran reportedly tried to purchase quantities of enriched uranium from Kazakhstan in 1992 and possibly Georgia in 1996.²⁹ According to senior U.S. officials, the former effort helped spur Operation Sapphire, the removal of 600 kg of poorly guarded highly enriched uranium from the Ulba Metallurgical Plant in Kazakhstan in October 1994.³⁰ Moreover, in January 1996, German secret service head Konrad Porzner reportedly told a parliamentary committee that his agency had information that Iran (as well as Iraq) was trying to purchase nuclear materials on the black market.³¹

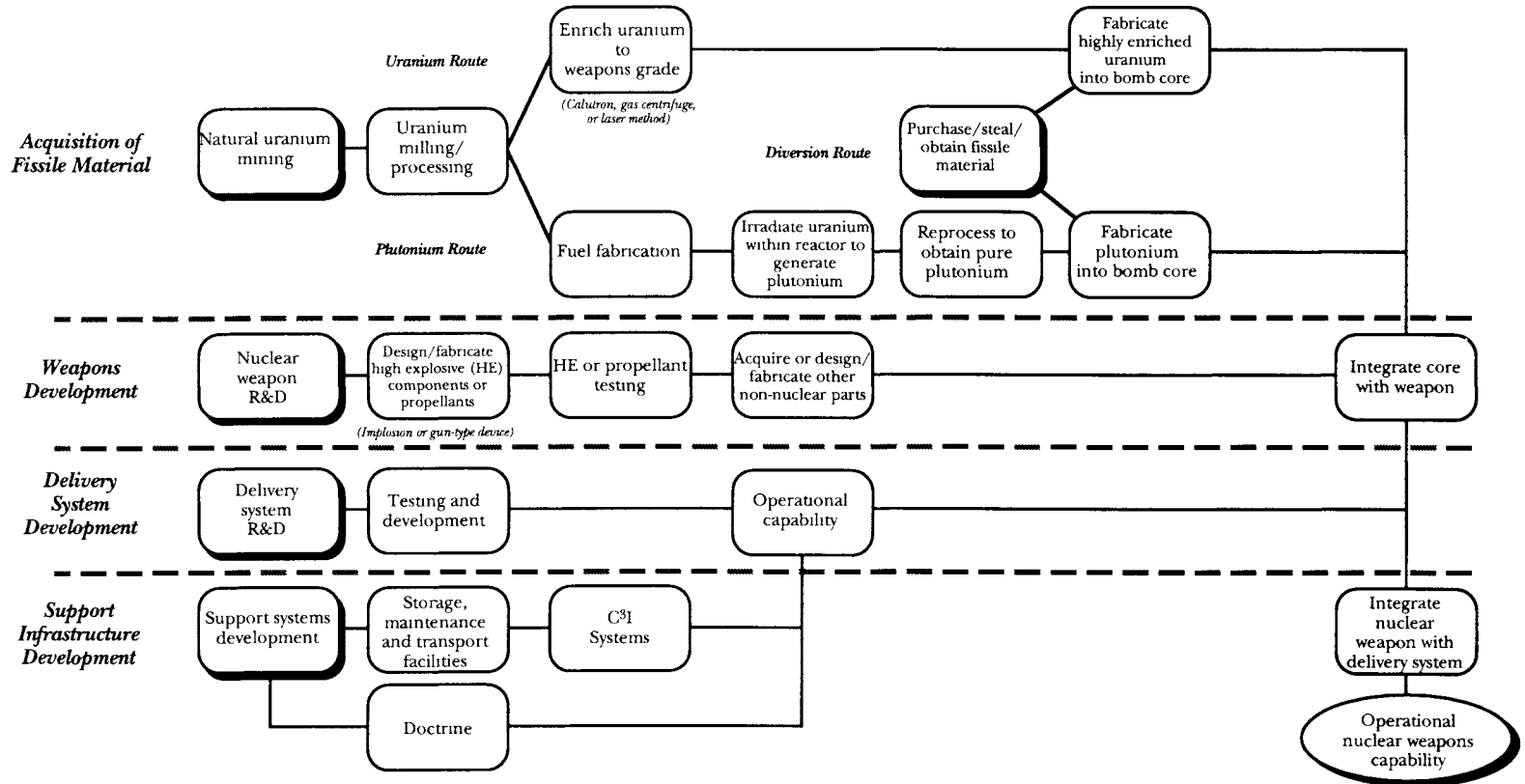
²⁸ David A. Schwarzbach, "Iran's Nuclear Program: Energy or Weapons?" Nuclear Weapons Databook, Natural Resources Defense Council, Washington, DC, September 7, 1995.

²⁹ *WT*, November 24, 1994, A1. See also Herbert Krosney, *Deadly Business: Legal Deals and Outlaw Weapons—The Arming of Iran and Iraq, 1975 to the Present* (New York: Four Walls Eight Windows, 1993), 267-68; and *USN&WR*, March 18, 1996, 27.

³⁰ *NYT*, May 2, 1995, A6; William C. Potter, "The 'Sapphire' File: Lessons for International Nonproliferation Cooperation," *Transition*, November 17, 1995, 14-19.

³¹ Reuters, February 29, 1996.

Iran: Potential Nuclear Proliferation Routes



The production of fissile material is considered the most difficult step in the nuclear weapons production process. The acquisition of diverted fissile material on the black market would enable Iran to bypass this step and concentrate exclusively on “weaponization” (the process of building a nuclear explosive device small and rugged enough to be safely and reliably delivered).³² At its present level of technology, Iran probably could create much if not all of the infrastructure needed to weaponize fissile material on its own, using equipment on hand or specially acquired for this purpose.³³ This point was made in a recent study by the United States Office of Technology Assessment, which estimated that:

Weapon fabrication would . . . probably not present major technical hurdles to a proliferant. Assembly of a gun-type weapon is relatively straightforward. Implosion-type designs would require lathes, other machine tools, and possibly isostatic presses to fabricate explosive lenses and other components, but . . . little of the equipment for final assembly of a weapon is sufficiently specialized to be easily controllable by export laws.³⁴

The infrastructure and manpower base required for the weaponization of fissile material is much smaller and hence more difficult to detect than the infrastructure required to produce the material itself. Thus, if Iran were to succeed in acquiring sufficient fissile material for one or more weapons, it could be extremely difficult to identify its clandestine nuclear infrastructure.

Furthermore, Iran may believe that it does not need more than just a handful of weapons in order to achieve its strategic objectives. In this regard, the relevant model for Iran may be North Korea (which may have one or two weapons) rather than Iraq (which aimed to produce up to twenty weapons per year).³⁵ And depending on the type and design of the weapon, Iran might not need to test it to be confident that it would work as intended (indeed, most nuclear threshold states have not tested their weapons).³⁶

³² For more, see U.S. Congress OTA, *Technologies Underlying Weapons of Mass Destruction*, OTA-BP-ISC-115, (Washington, DC: U.S. Government Printing Office, 1993), 149-75.

³³ Iran has tried to obtain items that could be used to assist weapons design, such as high-speed cameras and flash x-ray equipment from the United Kingdom. These “dual use” items also have non-nuclear applications, however—such as for designing armor for combat vehicles—and are therefore at best ambiguous indicators of nuclear intent. See David Albright, “Iran and Nuclear Weapons,” unpublished paper, May 26, 1995, 10.

³⁴ OTA, *Technologies Underlying Weapons of Mass Destruction*, 152.

³⁵ David A. Kay, “Bomb Building in North Korea and the Middle East” (paper delivered at the Washington Roundtable on Science and Public Policy, George C. Marshall Institute, Washington, DC, March 12, 1994).

³⁶ For instance, the designers of the “Little Boy” bomb dropped on Hiroshima in August 1945 had such a high degree of confidence in the “gun type” weapon design that they felt no need to test it prior to first use. See OTA, *Technologies Underlying Weapons of Mass Destruction*, 149-50.

The acquisition of significant quantities of fissile material would thus enable Iran to structure its clandestine program to provide few if any observable indicators; this could make it extraordinarily difficult for foreign intelligence agencies to follow nuclear developments in Iran.

There are a number of reasons why the diversion route—assuming fissile material is available—would be especially attractive for Iran. Most importantly, it would dramatically reduce the personnel, material, organizational, and financial demands of a nuclear program and dramatically enhance Tehran's chances for success. The overall performance of Iranian industry is dismal, and it has not generally demonstrated the skills needed to manage large, complex projects. Centers of industrial excellence and innovation do exist in Iran,³⁷ however, and if it were to succeed in obtaining fissile material, it could probably overcome the obstacles to successfully producing a nuclear explosive device, if not a deliverable weapon. It is worth noting that no country has ever failed to produce a nuclear weapon once it had sufficient fissile material on hand, and there is no reason to believe that Iran would prove an exception.

The Plutonium Route. Iran has tried since 1987—thus far without success—to acquire 20-30 MWt range research reactors from Argentina, India, China, and most recently Russia. The transfer to Iran of a research reactor of this size would pose a significant proliferation risk; most run on highly enriched (i.e., weapons grade) uranium fuel which, if diverted, could be used to produce nuclear weapons. Moreover, research reactors can generally produce weapons grade plutonium more economically than power reactors. Iran has also tried to obtain from Argentina and elsewhere “hot cells” to separate plutonium from spent reactor fuel as well as the technology to produce yellowcake (uranium ore concentrate), to fabricate reactor fuel, and to produce heavy water for the reactors.³⁸ Had Iran succeeded in acquiring all of these, it would have been able to produce plutonium on its own (although it would have had to circumvent IAEA safeguards to divert the material for weapons use). It would have also obtained the know-how needed to build and operate a parallel clandestine plutonium production reactor and reprocessing facility.³⁹ So far, the

³⁷ For instance, Iran's Esfahan Steel Company is evaluating the commercial viability of a new direct-reduction steel technology process that may be a world-class innovation. Iran also has a thriving auto industry; the Sazeh Gostar Company will soon begin production of a reverse-engineered Renault 5 automobile. This effort is expected to employ some 20,000 people. See *MEED*, February 10, 1995, 14-15; and *MEED*, February 24, 1995, 2-3.

³⁸ Krosney, 240; *Time*, December 16, 1991, 48; and *Nucleonics Week*, September 24, 1992, 2-3. Iran also bought large quantities of yellowcake from South Africa in 1988 and 1989, presumably as a fuel source for these reactors; see Krosney, 250.

³⁹ For what this would entail, see John R. LaMarsh, “On the Construction of Plutonium-Producing Reactors by Small and/or Developing Nations,” in *Nuclear Proliferation Factbook*, U.S. House of Representatives Committee on International Relations and U.S. Senate Committee on Governmental Affairs, September 23, 1977, 550-51. See also OTA, *Technologies Underlying Weapons of Mass Destruction*, 156-57.

United States has succeeded in blocking these transfers, although the January 1995 nuclear cooperation accord between Russia and Iran provides for the possible sale of a 30-50 MWt research reactor to Tehran.

Iran's attempts to acquire enrichment and reprocessing technologies are especially worrisome. Most reactor operators in the developing world have found it more economical to acquire reactor fuel from traditional suppliers in Western Europe or Russia and return spent fuel to these countries for reprocessing and disposal, than to develop an enrichment or reprocessing capability themselves. Those that have pursued such capabilities—India, Pakistan, Israel, Iraq, Argentina, and Brazil—have usually done so in the framework of a clandestine nuclear weapons program. Attempts to acquire enrichment or reprocessing capabilities are thus often key indicators of non-peaceful intent.

Iran's abiding interest in nuclear power may derive at least in part from a desire to acquire a plutonium production capability.⁴⁰ The low-enriched uranium fuel used in the type of pressurized water reactors (PWRs) Russia and China plan to sell Iran cannot be used in a weapon without further enrichment. However, the possibility that Iran might divert *spent* nuclear fuel from these power plants in order to reprocess it and extract plutonium is a source of concern, though it would be very difficult for Iran to do so undetected. The PWRs that Iran hopes to acquire from Russia and China cannot be refueled while "on line" (operating); they must be shut down for a period of weeks to permit removal of the reactor fuel. Reactor shut-down is an observable event that increases the likelihood that clandestine attempts to remove fuel would be detected.⁴¹ An unannounced reactor shut-down or frequent reactor shut-downs and refuelings would provide an indication of possible Iranian intent to violate its NPT commitments and could trigger an IAEA special inspection or military action by the United States or others.⁴²

⁴⁰ Nuclear reactors are inherently "dual use" in nature. Thus, for many years, both France and the Soviet Union used civilian nuclear power plants to produce plutonium for their nuclear weapons programs, while Great Britain used military plutonium production reactors to generate electricity for the civilian sector. See Thomas B. Cochran, William B. Arkin, Robert S. Norris, Jeffrey I. Sands, *Soviet Nuclear Weapons*, Nuclear Weapons Databook, vol. 4 (New York: Harper & Row, 1989), 81-87; and Robert S. Norris, Andrew S. Burrows, Richard W. Fieldhouse, *British, French, and Chinese Nuclear Weapons*, Nuclear Weapons Databook, vol. 5 (Boulder, CO: Westview Press, 1994), 76-78, 202-4.

⁴¹ For a discussion of the technical characteristics of PWRs and their relative "proliferation resistance" compared to other reactor types, see Potter, 59-98.

⁴² The isotopic composition of plutonium in spent reactor fuel varies depending on the nature of the reactor and time spent therein. Military grade plutonium is produced by subjecting uranium to relatively brief periods of irradiation in a reactor (typically just a few weeks), and is rich (more than 93 percent) in Pu-239, the isotope of plutonium that is most desirable for bomb-making. Nuclear reactor fuel, by contrast, may spend up to several years in a reactor core; as time passes, the proportion of Pu-239 decreases relative to other plutonium isotopes such as Pu-240, -241, and -242, which are less desirable for bomb-making. Thus, a potential proliferator would typically shut down and refuel a PWR more frequently than civilian operation would warrant, in order to maximize production of Pu-

Furthermore, the plutonium yielded by reprocessing spent reactor fuel from power plants (reactor grade plutonium) is less desirable for weapons use than the plutonium produced by dedicated plutonium production reactors (weapons grade plutonium).⁴³ For these reasons, PWRs are not the ideal means for producing fissile material for a weapons program. Nonetheless, reactor grade plutonium can be used to create a bomb, and this route remains a potential option for Iran. PWRs are prodigious producers of plutonium, and even though Russia has agreed to take back Iran's spent fuel,⁴⁴ there are likely to be very large quantities of it in cooling pools in Iran, awaiting shipment, at any given time. A decision by Iran to withdraw from the NPT could thus endow it with potentially large quantities of plutonium for bomb building.⁴⁵

Finally, both research and power reactors produce radioactive fission products that could be used to produce radiological weapons. (Radiological weapons consist of a bomb or missile warhead filled with materials that pose a radiation hazard for humans.) These can be used as area denial weapons on the battlefield, or against enemy population centers.

The Uranium Route. Iran also appears to be interested in various uranium enrichment technologies that could provide the foundation for a nuclear weapons program. Of the various methods available, gas centrifuge enrichment—a highly efficient means of enriching uranium, that does not require large facilities or large amounts of energy—is its most likely choice.

Iran's procurement activities relating to gas centrifuges are reminiscent of those of Pakistan in the 1970s and Iraq in the 1980s; it reportedly has used many of the same procurement strategies and many of the same companies (mostly in Europe) employed by these earlier proliferators.⁴⁶

Iran is believed to have acquired early generation URENCO⁴⁷ gas centrifuge designs, and it tried to acquire gas centrifuge components from Germany and Switzerland in 1991. It also tried to obtain a centrifuge enrichment plant from Russia as part of its January 1995 nuclear

239. Frequent reactor shut-downs are thus a key indicator of potential intent to use a PWR to produce plutonium for a weapons program. See Frank Barnaby, *The Plutonium Legacy: Nuclear Proliferation Out of Control?* Current Decision Report, no. 12, Oxford Research Group, Oxford, UK, April 1993, 1-6; and OTA, *Technologies Underlying Weapons of Mass Destruction*, 159, 163, 184, 186, 188.

⁴³ J. Carson Mark, "Reactor Grade Plutonium's Explosive Properties," Nuclear Control Institute, Washington, DC, August 1990.

⁴⁴ WT, August 8, 1995, A9.

⁴⁵ Albright, "An Iranian Bomb?" 23, 26.

⁴⁶ There have been reports that Pakistani officials helped Iran develop its clandestine nuclear procurement plan several years ago; see WP, May 17, 1995, A23.

⁴⁷ URENCO, a West European nuclear energy consortium, operates several gas centrifuge enrichment facilities that produce fuel for civilian nuclear power reactors. Pakistan's nuclear weapons program employed gas centrifuges based on URENCO designs stolen by a Pakistani scientist, Dr. Abdul Qader Khan, who worked at a Dutch centrifuge enrichment plant in the early 1970s and went on to head Pakistan's nuclear weapons program.

cooperation accord (highlighting its interest in this technology) although Russia subsequently withdrew this offer due to U.S. pressure. Finally, China is expected soon to commence construction of a uranium hexafluoride conversion plant in Iran which will produce the feedstock required for the centrifuge enrichment process.⁴⁸ This is a critical indicator that Iran is still seriously pursuing gas centrifuge technology. To succeed, however, Iran will have to overcome the significant technological challenges of producing gas centrifuges⁴⁹ or locate a potential foreign supplier such as Russia, which has hundreds of thousands of excess centrifuges in storage.⁵⁰

Iran has also acquired from China a small (one milliamper) calutron located at Karaj. Although unsuitable for producing enriched uranium for nuclear weapons, it could provide Iran with sufficient experience with the technology to enable it to build larger calutrons. (Iraq used a small calutron—identical in size to the one Iran has—to test various concepts later employed by the giant calutrons it built for uranium enrichment.) Calutron enrichment is a relatively inefficient, energy-intensive process, however, and thus may be less attractive to Iran than other routes.⁵¹

Likewise, Iran investigated laser enrichment techniques under the Shah and is believed to be continuing research in this area.⁵² However, due to the sophistication of the technology required for these techniques, and the fact that more advanced countries have had problems with this method, laser enrichment seems an unlikely proliferation route for Iran.⁵³

Finally, according to Iranian officials, Tehran hopes to commence domestic uranium production at mines near Saghand with the intention of eventually producing for domestic use and export.⁵⁴ The development of domestic uranium sources would be critical to a clandestine weapons program—whether based on the plutonium or uranium route to the bomb—since it would end Iran's dependence on foreign uranium, and better enable it to hide its activities. It will be several years, however, before the mines at Saghand are operational.⁵⁵

⁴⁸ Iran has also attempted to acquire fluorine from the UK—presumably to produce uranium hexafluoride feedstock—and has received small quantities of uranium hexafluoride from China. See Albright, "An Iranian Bomb?" 23, 26; Krosney, 263-66; *WP*, April 17, 1995, A12; *Iran Brief*, December 5, 1994, 8; *WT*, May 8, 1995, A1; and *WT*, April 17, 1996, A1.

⁴⁹ Even Iraq, which had relatively advanced military-industrial capabilities relative to Iran, was unable to produce useable centrifuge components and had to obtain them abroad. See David Albright, "Engineer for Hire," *Bulletin of the Atomic Scientists*, December 1993, 34-35.

⁵⁰ For more on the Russian centrifuge program, see David Albright and Kevin O'Neill, "The Proliferation Threat Posed by Russian Centrifuges," *Monitor*, winter 1995-96, 22-23.

⁵¹ *WP*, November 5, 1991, A16. See also Albright, "An Iranian Bomb?" 25-26.

⁵² *MEDNEWS*, June 8, 1992, 1-8. See also *Ettela'at*, April 4, 1993, 5, 7, in FBIS-NES, April 9, 1993, 42-44; and Krosney, 251-52.

⁵³ OTA, *Technologies Underlying Weapons of Mass Destruction*, 126.

⁵⁴ *Mideast Mirror*, March 15, 1993, 27.

⁵⁵ Krosney, 257.

The NPT: Constraint or Cover?

Iran's membership in the NPT might complicate, but ultimately is unlikely to seriously hinder, its efforts to build a bomb. Its status as a signatory in "good standing" enables Tehran to acquire civilian nuclear facilities and technology from Russia, China, and elsewhere. The experience and expertise Iran gains by operating its overt reactors and facilities using safeguarded materials could help it build a parallel clandestine weapons program.

Alternatively, Iran could formally withdraw from the NPT after it had created the infrastructure needed to produce nuclear weapons—if it were willing to accept the potential political, military, and economic consequences of doing so. This possibility cannot be lightly dismissed; recent revelations about Iraq's "crash" effort after August 1990 to build a bomb by diverting safeguarded enriched uranium reactor fuel and North Korea's March 1993 threat to withdraw from the NPT demonstrate that some states are prepared to violate their NPT commitments, or withdraw from the NPT when their vital interests are threatened. In light of what the world now knows about the Iraqi crash program, the transfer of either research or power reactors to Iran—an anti-status quo power in an unstable region—is an unwise and irresponsible step.

Outlook

Without significant outside help, Iran will face major obstacles to realizing its nuclear ambitions. Among these are a lack of personnel with technical training or experience in successfully managing large, complex projects; an underdeveloped industrial-technological base; and a lack of key materials and expertise required to build nuclear weapons.⁵⁶ Moreover, the strengthening of export controls on nuclear "dual-use" items following the 1991 Gulf War, and the focus of world attention on Iran as a potential proliferator are likely to complicate efforts to acquire sensitive technology and materials from abroad.⁵⁷ U.S. diplomatic *demarches* and interdiction operations have already complicated Iran's search for nuclear technology and expertise. In the past two or three years, the United States and its allies have thwarted efforts to transfer nuclear technology from a number of countries, including Argentina, China, Czechoslovakia, India, Italy, and Poland.⁵⁸

It is far from certain, however, that these efforts will ultimately succeed in thwarting Iran's nuclear ambitions. The technology and expertise Tehran acquires from China, Russia, and elsewhere for its civilian nuclear

⁵⁶ FIS, *A New Challenge After the Cold War*, 28.

⁵⁷ Roland Timerbaev, "A Major Milestone in Controlling Nuclear Exports," *Eye on Supply*, no. 6 (spring 1992): 58-65; and Tadeusz Strulak, "The Nuclear Suppliers Group," *Nonproliferation Review*, fall 1993, 2-10.

⁵⁸ *WP*, November 17, 1992, A1, A30; R. James Woolsey, statement to the U.S. Senate Select Committee on Intelligence, January 25, 1994; *DN*, December 13-19, 1993, 3; and *La Repubblica*, November 12, 1993, 23, in JPRS-TND, December 8, 1993, 54.

power program will also advance its efforts to acquire nuclear weapons. It is worth noting that nearly every nuclear threshold state has used a "peaceful" civilian nuclear program as a stepping stone to realizing its nuclear ambitions. In addition, Iran's overt nuclear program could provide a cover for acquiring equipment and technology required for a clandestine nuclear effort, as well as access to foreign individuals and companies that, for the right price, might be willing to aid its clandestine effort. In this way, Iran might circumvent obstacles that would otherwise hinder its progress toward acquiring a nuclear capability were it left to its own devices.

In addition, the break-up of the Soviet Union may provide Iran with other opportunities to advance its nuclear program. The emergence of a black market for nuclear materials from the former Soviet Union raises the possibility of the diversion of fissile material or other special materials to proliferators. Thus, the acquisition of fissile material may no longer be the most difficult obstacle to the development of nuclear weapons. Moreover, there have been unconfirmed reports that Iran has hired former Soviet scientists to work on its nuclear program. These scientists could help Iran resolve problems relating to the design and development of enrichment technologies (such as gas centrifuges) and nuclear weapons.⁷⁹

Finally, a breakdown in control over nuclear weapons in the former Soviet Union could enable Iran to acquire tactical nuclear weapons (such as landmines or artillery rounds) that would provide Iran with a small nuclear arsenal or a source of fissile material and components.⁸⁰ Due to the dimensions of the problem, it seems unlikely that the United States would learn of the diversion of fissile material, expertise, or even finished weapons before such activities had occurred.

The outcome of Iran's effort to obtain the bomb depends on the interplay of several variables, making it very difficult to accurately assess Iran's prospects for success or to estimate how long it might take. Although the obstacles facing Iran should not be underrated, neither should Iran's ability to exploit its status as an NPT member to obtain nuclear technology for its weapons program, nor the dangers posed by the existence of a black market for fissile material in the former Soviet Union.

⁷⁹ According to an alleged 1992 German intelligence report cited by the Russian press following the collapse of the Soviet Union, fourteen Russian nuclear scientists found employment in Iran, and fifty engineers and 200 technicians concluded contracts with Tehran; see *Izvestiya*, October 20, 1992, 7, in FBIS-SOV, October 22, 1992, 4; and *Der Spiegel*, February 24, 1992, 146-50, in JPRS-TND, March 13, 1992, 26-27. According to a recent report in the American press, Russian scientists are working as paid consultants to Iranian research organizations and are solving problems related to ballistic missile design and development via the Internet; see *USN&WR*, April 17, 1995, 45, 48.

⁸⁰ Richard Garwin, "Post-Soviet Nuclear Command and Security," *ACT* 22, no. 1 (January-February 1992): 19-21. Reports that Iran acquired two to three nuclear weapons from Kazakhstan several years ago are believed to be untrue. See Kenneth Timmerman, *Weapons of Mass Destruction: The Cases of Iran, Syria, and Iraq*, Simon Wiesenthal Center, Los Angeles, CA, August 1992, 52-53. The possibility that this could occur in the future, however, must be taken seriously.

Implications of a Nuclear Iran

How Iran would employ nuclear weapons is unclear. The experience of the past fifty years, however, has shown that nuclear weapon possessor states have often been unable to translate the military potential represented by nuclear weapons into political influence. It is therefore difficult to say how the acquisition of nuclear weapons would affect Iran's stature—especially if the country's leadership decides that for political reasons it must adopt an ambiguous posture concerning its nuclear capabilities. At the very least, however, Iran's acquisition of nuclear weapons would complicate U.S. power projection in the Persian Gulf and raise the potential risks and costs of U.S. intervention there; under any circumstance, this would be an undesirable development for the United States and its allies in the region.

Moreover, arguments based on Chinese, Soviet, and American experience during the Cold War—that the logic of deterrence moderates the behavior of nuclear weapons states, inclines their leaders to caution, and thereby enhances stability—seem excessively sanguine.⁶¹ Such arguments are based on a selective reading of the historical record that ignores contrary examples elsewhere. Thus, Iraq's increasingly aggressive regional policies in 1989-90 and North Korea's nuclear brinkmanship in 1993-94 probably derived from the increased self-confidence that leaders of both countries drew from their growing nonconventional arsenals (in the case of Iraq, missiles and chemical and biological weapons, and in the case of North Korea, nuclear weapons).

In the Iranian case, acquisition of nuclear weapons would dramatically transform the regional balance of power and could therefore alter the decision calculus of Iran's clerical leadership. Thus, past Iranian behavior, which has often (though not always) been characterized by caution and even pragmatism in the pursuit of extreme ideological goals,⁶² may not be a valid guide for predicting the behavior of a nuclear Iran. For this reason, averting such an outcome will be a key U.S. interest in the coming years.

CHEMICAL AND BIOLOGICAL WEAPONS

The evidence for Iran's involvement in the production of chemical and biological weapons is less ambiguous than that relating to its nuclear effort. The official position concerning these weapons was set down by Iran's current president (then Majlis speaker and acting armed forces commander-in-chief) 'Ali Akbar Hashemi-Rafsanjani in a 1988 speech to military officers in which he said that:

⁶¹ See, for instance, Shahram Chubin, "Does Iran Want Nuclear Weapons?" *Survival* 37, no. 1 (spring 1995): 97-98, 100.

⁶² Shaul Bakhash, "Iran's Islamic Foreign Policy" (paper presented at the U.S. Institute for Peace, Washington, DC, May 1994).

Chemical and biological weapons are poor man's atomic bombs and can easily be produced. We should at least consider them for our defense. Although the use of such weapons is inhuman, the [Iran-Iraq] war taught us that international laws are only scraps of paper.⁶³

Iran has the most active chemical warfare program in the developing world. It can produce several hundred tons of chemical agent annually and may have already produced as much as 2,000 tons of agent to date, including blister (mustard), choking (cyanidal), and possibly nerve (sarin) agents, at plants near Qazvin, Parchin, and Esfahan.⁶⁴ It has produced bombs and artillery rounds filled with these agents and probably deployed chemical warheads on missiles.⁶⁵ Iran initially obtained chemical agent precursors from the United States, Germany, and Japan, but the imposition of stricter export controls by these countries in the mid- to late-1980s forced Iran to find alternative sources for precursors, such as India. In the past several years, China has emerged as Iran's principal source of chemical weapons precursors as well as production technology.⁶⁶ Due to its difficulties obtaining chemical agent precursors, however, Iran is working to become self-sufficient in the production of these materials.⁶⁷

Because Iran was the victim of extensive Iraqi chemical weapon attacks during the Iran-Iraq War—suffering over 50,000 casualties (including 5,000 killed)⁶⁸—it has devoted significant resources to enhancing its chemical warfare capabilities.⁶⁹ Iran employed chemical weapons on a limited basis against Iraqi troops toward the end of the war (1987-88), largely in retaliation for large-scale Iraqi chemical weapon use. These incidents, however, had little if any impact on the course of the fighting.⁷⁰

⁶³ IRNA, October 19, 1988, in FBIS-NES, October 19, 1988, 55-56.

⁶⁴ *MEDNEWS*, December 21, 1992, 4; Gates, remarks to the Comstock Club; Woolsey, testimony to the Senate Governmental Affairs Committee; FIS, *A New Challenge After the Cold War*, 29; *MEDNEWS*, April 19, 1993, 4-6; and Krosney, 195. By comparison, Iraq has acknowledged producing about 4,500 tons of chemical agents such as the blister agent mustard and the highly lethal nerve agents sarin, tabun, and VX. It also manufactured a wide range of chemical munitions—including tube and rocket artillery rounds, bombs, and missile warheads. At the height of the Cold War, U.S. and Soviet chemical agent stocks totaled 30,000 and 40,000 tons, respectively; these are currently being reduced to 5,000 tons by mutual agreement.

⁶⁵ Zalmay Khalilzad, "Iran's Strategy for the Outer Ring," in *Islam and the U.S.: Challenges for the Nineties*, Proceedings of The Washington Institute's Soref Symposium, Washington, DC, April 27, 1992, 4.

⁶⁶ *WP*, March 8, 1996, A26.

⁶⁷ *NYT*, January 29, 1989, A1, A10; *MEDNEWS*, April 19, 1993, 6; *LAT*, August 10, 1993, A3; and *WT*, June 23, 1996, A7.

⁶⁸ See the speech by Foreign Minister 'Ali Akbar Velayati to the January 1989 Paris Conference on the Prohibition of Chemical Weapons in FBIS-WEU, January 9, 1989, 7. Another Iranian source, also apparently drawing on official data, offers a higher tally: 10,000 killed (including at least 5,000 civilians); 50,000 moderately and severely injured; and 50,000 mildly injured; see Dr. Amir Saghafinia, "Emergency Treatment of Chemical Weapons Casualties—Field Experiences," *ASA Newsletter*, issue 91-3, no. 24, June 6, 1991, 12.

⁶⁹ *NYT*, January 29, 1989, A1, A10.

⁷⁰ Anthony H. Cordesman and Abraham R. Wagner, *The Lessons of Modern War: The Iran-Iraq*

Although Iran signed the Chemical Weapons Convention in January 1993 (obligating it to destroy its stocks of chemical weapons), it has not yet ratified this treaty.⁷¹ It is hard to believe that Iran would give up the core component of its strategic deterrent while Baghdad may retain residual chemical and biological warfare capabilities. Thus, although Iran may yet ratify the treaty, it probably will do so with the intention of hiding stocks of chemical weapons for future contingencies.

Iran is also developing biological weapons. It probably is researching such standard agents as anthrax and botullin toxin (two agents also produced by Iraq), and it has shown interest in acquiring materials that could be used to produce various other toxins.⁷² At this time, Iran can probably deploy biological weapons and disseminate them via either terrorist saboteurs or spray tanks on aircraft or ships, although more advanced means of dissemination—by unmanned aircraft or missiles, for instance—may currently be beyond its means.⁷³

Biological weapons can be produced quickly and cheaply and can kill thousands of people in a single attack; their destructive potential thus approaches that of nuclear weapons. Moreover, no timely early warning capability currently exists for biological weapons, and vaccines are not stocked by the United States in sufficient numbers or variety to be of use in an emergency. As a result, Tehran's biological warfare program provides Iran with a genuine mass destruction capability for which the United States lacks an effective counter—beyond deterrence.

BALLISTIC AND CRUISE MISSILES

Due to its experience in the Iran-Iraq War, Iran believes that a strong missile force is critical to the country's security, and it has given the highest priority to the procurement and development of various types of missiles.

During the war, Iraq launched air and missile strikes against Iranian towns and economic targets near the border in order to force an end to the fighting (although Tehran also suffered occasional air raids). Iran retaliated in kind with missile strikes on Baghdad and other major cities in

War (Boulder, CO: Westview Press, 1990), 513, 517-18.

⁷¹ For Iran's stance toward the Chemical Weapons Convention and other arms control treaties, see Javed Ali, "Iran's Attitude toward Arms Control" (unpublished paper prepared for the Chemical and Biological Arms Control Institute, Alexandria, VA): 48-59.

⁷² Toxins are poisons that are produced by living organisms and disrupt victims' physical processes in much the same way as chemical agents. In 1989, Iran tried to acquire mycotoxin-producing fungus from Canada and the Netherlands. In the early 1990s, it reportedly acquired 120 tons of castor beans, which can be used to produce the deadly toxin ricin (see *NYT*, August 13, 1989, A11; and *Newsweek*, June 22, 1992, 42) and tried to acquire technology for producing biological agents, including fermenters and reactors, in Germany and Switzerland; see Krosney, 195-99; and *Iran Brief*, May 1, 1995, 11-12.

⁷³ See *MEDNEWS*, April 19, 1993, 5; and Anthony H. Cordesman, *Iran & Iraq: The Threat from the Northern Gulf* (Boulder, CO: Westview Press, 1994), 100-103.

order to compel Iraq to cease its attacks. Because the Iraqi regime was sensitive to the casualties these strikes inflicted and their impact on morale, Iran was able, on several occasions, to force Iraq to curtail its attacks on Iranian population centers.⁷⁴

The February to April 1988 "War of the Cities" changed all that. Iraq had developed extended-range ballistic missiles and, for the first time, was able to hit Tehran on a daily basis. These missile strikes had a particularly devastating effect on Iran's morale; more than a quarter of the population of Tehran fled the city, contributing to Iran's decision to seek an end to the war in the summer of 1988. As a result of this experience, Iran saw the need to be able to respond in kind to similar threats in the future.⁷⁵

Iran may also see its missile force as a way to compensate for the weakness of its air and air defense forces, to counterbalance the air forces of its neighbors, and to deter air attacks. Furthermore, Iraq's missile attacks against Israel and Saudi Arabia during the 1991 Gulf War and the inability of coalition forces to locate and destroy these missiles underscored their survivability on the modern battlefield and highlighted the fact that they are likely to be used in future conflicts. Finally, Israeli threats to use force to prevent Iran's acquisition of nuclear weapons have lent additional impetus to Iranian efforts to acquire long-range missiles such as the North Korean Nodong-1 that are capable of reaching Israel.

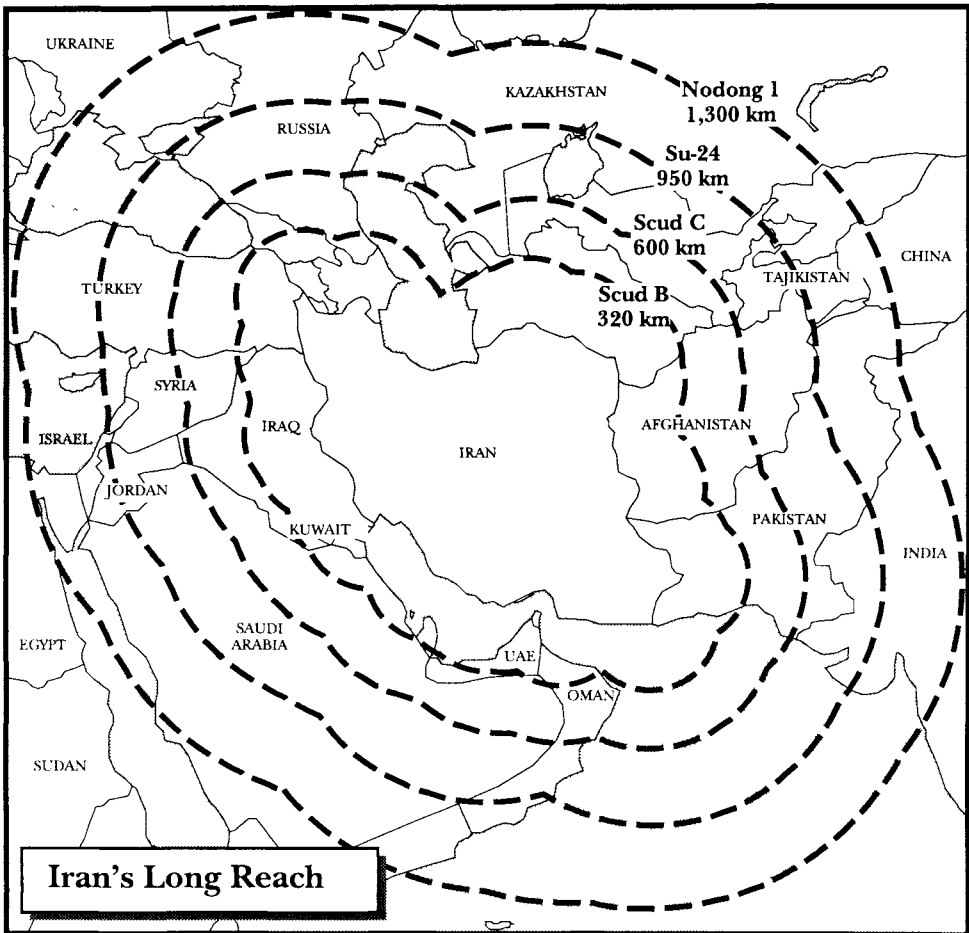
The backbone of Iran's strategic missile force consists of 200-300 North Korean SCUD-B and -C missiles (with ranges of 320 km and 500 km respectively) armed with conventional and perhaps chemical warheads and mounted on ten to fifteen mobile launchers.⁷⁶ Iran's missiles can reach major population centers in Iraq, Saudi Arabia, and the smaller Arab Gulf states. In addition, it is funding North Korea's development of the Nodong-1 missile which, with a range of 1,300 km, will be capable of reaching Israel. The program, however, is reportedly plagued by technical and financial problems; the Nodong-1 has been tested only once (in May 1993) and it may be a year or more before the missile attains operational status and is transferred to Iran.⁷⁷

⁷⁴ Aharon Levron, ed., *MEMB: 1987-88* (Boulder, CO: Westview Press, 1988), 215-18.

⁷⁵ The "War of the Cities" was not the last time Iran used its SCUD missiles. In November 1994, Iran launched one to three SCUD-B missiles against an opposition Mojahedin-e Khalq base in Iraq; see AFP, November 6, 1994, in FBIS-NES, November 7, 1994, 63; and Voice of the Mojahed, November 6, 1994, in FBIS-NES, November 7, 1994, 64.

⁷⁶ Joseph S. Bermudez Jr., *Ballistic Missile Development in Iran*, unpublished paper, August 28, 1992, 8-19; *MEDNEWS*, May 18, 1992, 1-2; *MEDNEWS*, December 21, 1992, 4-5; and *DW*, May 1, 1995, 1, 14. While all or nearly all of Iran's missiles and mobile launchers are from North Korea, it is also trying to acquire Transporter-Erector-Launchers from Belarus, which produces the MAZ-543 (for the SCUD-B or -C). See *LAT*, July 20, 1995, A3.

⁷⁷ Iran is a little more than 1,000 km from Israel at its closest point. For a detailed technical assessment of the Nodong-1, see David C. Wright and Timur Kadyshev, "An Analysis of the North Korean Nodong Missile," *Science and Global Security* 4 (1994): 1-32. According to this assessment, the inaccuracy of the Nodong-1 (which has a CEP of 2-4 km) limits its utility against anything but large area targets such as cities.



Iran also signed a contract in 1989 for some 200 Chinese CSS-8 missiles. These are SA-2 (HQ-2) surface-to-air missiles which have been modified for use against ground targets and are now produced in Iran.⁷⁶ Though possessing limited range, payload, and accuracy, they enabled Iran to dramatically increase its missile inventory at a time when its stock of SCUD-Bs was nearly exhausted. They would also be important in the event of a future war with Iraq because of their ability to hit major Iraqi population centers near the border with Iran and because they offer Iran a cheap and effective way to dramatically augment its offensive punch.

Iran is working to acquire a capability to produce ballistic missiles locally in order to end its reliance on external sources of supply. Several times during the Iran-Iraq War, it nearly exhausted its supply of missiles and

⁷⁶ Bermudez, *Ballistic Missile Development*, 30-31. The CSS-8 is referred to as the 8610 in the Iranian press.

had great difficulty replenishing its inventory. Iran has since obtained equipment, machinery, components (including guidance systems), and special materials from North Korea and China to produce missiles. It is believed to be interested in producing the North Korean SCUD-C and Nodong-1, and possibly the Chinese M-9 or M-11 missiles. At present, it assembles SCUD-C missiles acquired in kit form from North Korea.⁷⁹

IRAN'S MISSILE AND ROCKET FORCES⁸⁰

	<u>Range (km)</u>	<u>Payload</u>	<u>Source</u>	<u>Comments</u>
<i>Missiles:</i>				
CSS-8	150	HE/CW(?)	China	Produced locally
SCUD-B	320	HE/CW(?)	N. Korea	Local prod. planned
SCUD-C	500-600	HE/CW(?)	N. Korea	Local prod. planned
Nodong-1	1,000-1,300	HE/CW(?)	N. Korea	Local prod. planned
<i>Rockets:</i>				
Shahin-1/2	20	HE/CW(?)	Local	—
Oghab	45	HE/CW(?)	Local	—
Fajr-3/5	45	HE/CW(?)	Local	—
Naze'at-4/6/10	90	HE/CW(?)	Local	—
Zelzal-2	100+	HE/CW(?)	Local	—

Despite the importance Iran has placed on this effort, it has experienced major problems and delays in creating a domestic missile production capability. A shortage of funds, skilled personnel, key production technologies, and special materials has led to production bottlenecks.⁸¹ Thus, although it has been trying since 1986 to create the infrastructure for the indigenous production of the SCUD-B, this effort has yet to bear results.⁸² This is particularly striking in light of the fact that this effort has received priority emphasis, and that the SCUD-B is based on

⁷⁹ *MEDNEWS*, May 18, 1992, 1-2; *MEDNEWS*, December 21, 1992, 4-5; *WT*, December 5, 1994, A14; *Iran Brief*, January 9, 1995, 8-9; *DW*, May 1, 1995, 1, 14; *DN*, June 19-25, 1995, 1, 50; and *NYT*, June 22, 1995, A1.

⁸⁰ Bermudez, *Ballistic Missile Development*, 53. Iran received SCUD-B missiles from Libya in 1985 and North Korea in 1987, although few, if any, are believed to remain in its inventory. It has also reportedly negotiated the purchase of M-9 and M-11 solid-fuel missiles from China. The M-11 was designed as a solid-fuel replacement for the SCUD-B: it has about the same range (280 km) and can be launched from the same MAZ-543 launcher. The M-9 is slightly larger and has a range of about 500 km; see *MEDNEWS*, December 21, 1992, 5. Iran is also reportedly developing or producing several other rockets and missiles, including the Ran and the Tondar 68, although little is known about these; see Bermudez, *Ballistic Missile Development*, 53.

⁸¹ FIS, *A New Challenge After the Cold War*, 29.

⁸² Joseph S. Bermudez Jr., "Ballistic Missiles in the Third World: Iran's Medium-Range Missiles," *JIR*, April 1992, 148; and W. Seth Carus, "Proliferation and Security in Southwest Asia," *Washington Quarterly* 17, no. 2 (spring 1994): 134.

World War II-era technology.⁸³ Likewise, Iran has reportedly lagged in the development of chemical warheads for these missiles. Due to its close military ties with North Korea and Syria, however—two countries that produced chemical warheads for their own missiles more than a decade ago—Iran has almost certainly acquired or developed this capability by now.

Iran also produces a range of artillery rocket systems, including the Shahin, Oghab, Fajr, Naze'at, and Zelzal. Although these rocket systems were developed primarily for a battlefield support role, Iran used the Oghab in a strategic role during the February-April 1988 "War of the Cities," to bombard Iraqi cities and towns, as well as military targets along the border. In a future war with Iraq, they would almost certainly be used in such a fashion again.

Iran was reportedly impressed by the performance of U.S. Tomahawk cruise missiles during the Gulf War and is said to be working on its own cruise missile to deliver conventional and nonconventional payloads.⁸⁴ A first-generation Iranian cruise missile would probably be based on currently deployed missiles such as the Chinese HY-1 Silkworm or C-802 antiship missiles, which would simplify and expedite initial production efforts. Indeed, there are reports that Iran is developing an extended-range version of the HY-1.⁸⁵

Relatively simple modifications to the guidance systems of these missiles, such as the installation of satellite navigation technology, and the use of radar absorbent materials and coatings could turn them into relatively accurate and somewhat stealthy cruise missiles for use against ground targets. Launched in large numbers and flying below the engagement envelope of current and future anti-missile defenses, Iranian cruise missiles could pose a danger to its neighbors. This effort, however, is likely to experience many of the same problems that have plagued Iran's attempts to produce ballistic missiles, and it could be years before Iran actually fields an operational cruise missile.

Cruise missiles are ideal means of delivering biological agent payloads against enemy population centers because they can be programmed to fly attack profiles that would facilitate the dispersal of these agents over a large area at lower altitudes, where the effect of unfavorable atmospheric conditions (high wind speeds or lapse conditions) would be minimized. In addition, cruise missiles could deliver advanced conventional payloads (such as anti-runway or anti-armor munitions) against high-value targets in

⁸³ Carus, 134.

⁸⁴ *AW&ST*, February 1, 1993, 26-27.

⁸⁵ See *MEDNEWS*, December 21, 1992, 4. Prior to the Gulf War, Iraq was also developing an extended-range version of the HY-1 that it called the Faw (with planned ranges of 70, 150, and 200 km) and probably intended to use in a ground-to-ground role; see Christopher F. Foss, ed., *Jane's Armour and Artillery: 1989-90* (Coulson, UK: Jane's Information Group, 1990), 728. North Korea is also believed to have tested an extended-range (160-200 km) version of the HY-1 in May-June 1994.

the enemy rear. Although the delivery of nonconventional payloads by cruise missiles is probably not far beyond Iran's current technological capability, it will be years before it can produce advanced conventional submunitions payloads for delivery by cruise missiles.

Strategic Reconnaissance

As Iran extends its strategic reach through the acquisition and development of missiles and aircraft with longer ranges and greater accuracy, locating and identifying targets at greater ranges and in near real time will become increasingly important. Accordingly, Iran has acquired commercial satellite imagery for military purposes⁸⁶ and at one point was planning to develop a military reconnaissance satellite with the help of China.⁸⁷ Little is known about the satellite program, which probably would have been a derivative of the China-Brazil Earth Resources Satellite (CBERS), which is capable of producing twenty meter-resolution images.⁸⁸ This would have enabled Iran to locate and identify large, fixed targets far from its borders; assess the effects of air and missile strikes against area targets; and track or target maritime traffic plying the Persian Gulf. It appears, however, that the program has been canceled for financial reasons.

ASSESSMENT

Iran's nonconventional weapons programs are the most dangerous component of its military build-up. Despite economic hardships, Tehran is devoting significant resources to its nuclear program because it believes that only nuclear weapons offer a short-cut to regional superpower status and a solution to the potential long-term threats facing the country. Consequently, Iran is likely to do everything possible to spare its nuclear program the cuts affecting nearly every other part of its armaments plan.

Iran's generally unimpressive efforts in the field of ballistic missiles raises doubts about whether it has either the financial means or the managerial, scientific, and technical skills needed to develop nuclear weapons on its own. Moreover, Iran's heavy dependence on foreign technology and technical assistance, coupled with the weakness of its economy, holds out the prospect that its nuclear ambitions may be thwarted by strategies of technology and finance denial. Thus, Iran will have to overcome major economic and organizational roadblocks and

⁸⁶ Radio Tehran, May 7, 1990, in FBIS-NES, May 9, 1990, 37; and *Abrar*, December 24, 1991, 3, in JPRS-NEA, March 17, 1992, 19.

⁸⁷ *Resalat*, August 16, 1993, 3, 5, 6, 15, in FBIS-NES (Daily Report Supplement), September 21, 1993, 10-11; IRNA, July 6, 1993, in FBIS-NES, July 7, 1993, 69; and *JDW*, May 27, 1989, 1006-7.

⁸⁸ OTA, *The Future of Remote Sensing From Space: Civilian Satellite Systems and Applications* (Washington, DC: U.S. Government Printing Office, 1993), 184-85.

succeed in tapping foreign sources of nuclear technology, materials, and expertise, if it is to succeed in its efforts to acquire nuclear weapons. In any case, it clearly faces difficult challenges ahead. As a result, Iran will continue to develop and produce chemical and biological weapons, and perhaps radiological weapons, as an interim measure, to strengthen its military capabilities and deter preventive action against its nascent nuclear program.

While preventive military action, by the United States or Israel, might offer a short-term solution to the problem of Iranian nuclear proliferation, such a course of action could encounter significant obstacles. Iran has almost certainly learned the lessons of Osiraq in 1981 and the Gulf War in 1991 and will disperse and conceal any clandestine nuclear facilities it builds, making it difficult to identify viable targets (although hitting components of its overt civilian nuclear infrastructure—such as nuclear power plants—could help hinder its military effort). Moreover, Tehran's ability to retaliate by using chemical and biological weapons, disrupting the flow of oil from the Persian Gulf, and engaging in terrorism means that the use of force to thwart Iran's nuclear ambitions could entail major risks.

Finally, while Iran will continue to develop and acquire missiles as a means of delivering nonconventional weapons, it will also seek to develop the capability to deliver nonconventional weapons by non-traditional means, including terrorist saboteurs, trucks, remotely piloted aircraft, or boats. Because such methods offer the possibility of covert delivery, they are likely to become important adjuncts to traditional delivery systems such as missiles, and in situations in which deniability is a critical consideration, they are likely to be the delivery means of choice.



II IRAN'S CONVENTIONAL FORCES

War, embargo, and revolution have exacted a heavy toll on Iran's armed forces. The Iran-Iraq War was a military catastrophe from which Iran has not yet recovered. It emerged from the war with much smaller and less capable armed forces due to attrition and an international arms embargo that made it very difficult for Iran to replace its losses or obtain spare parts for equipment.¹ Even now, many of Iran's U.S. and British weapons remain non-operational and much of the equipment that is operational is not fully mission capable, due to a lack of trained maintenance personnel and spare parts.²

Much of Iran's operational equipment stocks consists of Soviet or Chinese systems acquired in recent years, though many of these are older models (F-7 fighters; Type-59 and -69 tanks; and SA-2, -5, and -6 surface-to-air missiles). Maintaining its aging arms inventory is one of the most critical problems Iran's armed forces face. This problem is unlikely to be resolved soon, moreover, because Iran lacks the funds needed to replace Western equipment with comparable models from Russia or China. Thus, for years to come, Iran will face the challenge of maintaining equipment of both Western and Eastern origin and obtaining spare parts for its aging inventory of Western arms.

Iran's armed forces also have major manpower problems. Many talented and experienced officers, non-commissioned officers, and technical support personnel were purged from the armed forces early in the revolution and their absence is still felt, particularly in the technology intensive services—the air force and navy. Iran's leadership came to recognize this problem as a result of its experiences during the Iran-Iraq War, and is trying to raise the level of professionalism in the ranks, though the armed forces will continue to suffer from this legacy for some time.³

Against this background, Iran has undertaken to rebuild, expand, and modernize its forces. As part of this effort, it has contracted for large

¹ Peter Burleigh, "Lessons of 'Operation Staunch' for Future Conflicts," in Eric H. Arnett, *Lessons of the Iran-Iraq War: Mediation and Conflict Resolution* (Washington, DC: American Association for the Advancement of Science, 1990), 9-14.

² Thus, in a 1993 interview, former Iranian Defense Minister Akbar Torkan described Iran's procurement priorities as follows: "The first priority is spare parts, the second priority is spare parts, and the third priority is spare parts." See *FT*, February 8, 1993, 4.

³ Shahram Chubin, *Iran's National Security Policy: Capabilities, Intentions, and Impact* (Washington, DC: Carnegie Endowment for International Peace, 1994), 17-18; and Ahmed Hashim, "Resurgent Iran: New Defense Thinking and Growing Military Capabilities," in W. Thomas Wander and Eric H. Arnett, eds., *The Proliferation of Advanced Weaponry: Technology, Motivations, Responses* (Washington, DC: American Association for the Advancement of Sciences, 1992), 180.

numbers of tanks, combat aircraft, and warships—mainly from Russia, China, and several Eastern European states (see opposite page). It has, moreover, solicited help from these and other countries to upgrade and maintain the older equipment it already owns. Financial constraints, however, have forced it to cancel a number of these contracts and dramatically cut procurement.

THE PERSIAN GULF MILITARY BALANCE⁴

	<u>Personnel</u>	<u>Tanks</u>	<u>APCs</u>	<u>Artillery</u>	<u>Aircraft</u>	<u>Warships</u>
Iran	500,000	1,200	1,000	2,000	215	28
Iraq	400,000	2,200	2,500	1,650	300	0
Saudi Arabia	160,000	900	2,800	350	245	17
Kuwait	16,000	200	310	55	48	2
UAE	70,000	125	730	200	60	10
Oman	43,500	90	40	100	25	4
Qatar	11,000	24	210	40	12	3
Bahrain	10,700	100	235	55	24	7

While the total number of items delivered since 1989 is significant, it constitutes only a fraction of the items on Iran's military wish list. Accordingly, Iran has had to content itself with the selective modernization of its armed forces. Major transfers since 1989 include twenty-five MiG-29 fighters and twelve Su-24 strike aircraft from Russia, twenty older F-7 fighters from China, small numbers of SA-2 SAMs from China and SA-5 and SA-6 SAMs from Russia, thirty-four T-72 tanks from Poland and 150 T-72s from Russia, eighty BMP-2 IFVs from Russia, 106 artillery pieces from China, ten Houdong-class fast attack craft and C-802 antiship cruise missiles from China, and two Kilo-class submarines from Russia.

IRAN: MAJOR WEAPONS DESIRED AND ACQUIRED

1989-96

	<u>Quantity Desired</u>	<u>Quantity Acquired</u>
Tanks	1,000-1,500	184
IFVs	250-500	80
Artillery	200-300	106
Combat Aircraft	100-200	57
Warships	10-15	12

⁴ Michael Eisenstadt, Washington Institute; IISS, *The Military Balance: 1995-96* (London: Oxford University Press, 1995); Jaffee Center for Strategic Studies, Shlomo Gazit, ed., *MEMB: 1993-94* (Boulder, CO: Westview Press, 1994). Figures include known operational equipment stocks only, not equipment currently in the arms pipeline.

IRAN'S MILITARY SHOPPING LIST⁵ *1989-96*

Ground Forces

Russia	200-400 T-72 tanks, T-72 assembly line, 500 BMP-2 ICVs, 200 SP guns, 40 Mi-28 or Ka-50 attack helicopters
China	400 Type-69 tanks, hundreds of artillery pieces
Czech Republic	300 T-72s, 1,500 T-55 tanks, antitank weapons plant
Poland	100 T-72s, 1,500 T-55s
Romania	150 T-55s, 200 APCs, 180 tank transporters
India	T-72s, T-55 upgrades, communications upgrades
Ukraine, Hungary, Yugoslavia	vehicle upgrades, maintenance, and spare parts

Air and Air Defense Forces

Russia	forty-eight MiG-29, twenty-four MiG-31, and unspecified numbers of Su-27 fighters; MiG-29 assembly line; twenty-four MiG-27, twenty-four Su-24, and unspecified numbers of Su-25 attack aircraft; twelve Tu-22M bombers; two A-50 AEW aircraft; SA-5, -6, -10, -11, and -13 SAMs; air defense C ³ I equipment; and maintenance of Iraqi aircraft that fled to Iran during the Gulf War
Georgia	Su-25 aircraft
Czech Republic	Tamara passive air defense warning system
China	seventy-two F-7 or F-8 II fighters, twenty-five K-8 training aircraft (and assembly line), SA-2 (HQ-2J) SAMs
Belarus	optical equipment for aircraft
Ukraine	spare parts

Naval and Coastal Defense Forces

China	ten Houdong-class missile patrol boats; HY-2, C-801, and C-802 antiship missiles; EM52 rising mines
Russia	three Kilo-class submarines, advanced torpedoes and mines
unknown	midget submarines

⁵ The list overstates Iran's actual procurement plans (especially for the ground forces): it is based on sometimes inaccurate press reports; it includes equipment for which no contracts were signed; and Iran has approached several sources to fill a single requirement.

THE ARMED FORCES AND THE REGIME

A hallmark of Iranian politics since the 1979 revolution has been the ongoing struggle for power among the various factions—pragmatist, conservative, and radical—that comprise Iran’s clerical leadership. The inconclusive nature of the struggle has often produced inconsistency and paralysis in Iranian domestic and foreign policymaking;⁶ thus, it frequently appears as if Tehran “speaks to the world with more than one voice.”⁷ The future course of the domestic power struggle could potentially have a major impact on Iran’s foreign and defense policies because the different clerical factions advocate contending foreign policy orientations and have conflicting conceptions of the roles of the regular military and the IRGC.

On foreign policy issues, the clerical leadership usually divides into two camps: “pragmatists” on the one hand and “conservatives” and “radicals” (doctrinaire exponents of “the line of the Imam”—the policies of the late Ayatollah Khomeini) on the other.⁸ Pragmatists such as President Rafsanjani generally stress the importance of improving Iran’s relations with the West and the Arab Gulf states (and therefore support exporting the revolution *outside* the Gulf), and for economic reasons, they may be willing to countenance renewed ties with the United States. Conservatives such as Supreme Guide ‘Ali Khamene’i and Intelligence chief ‘Ali Fallahian, and radicals such as former Interior Minister ‘Ali Akbar Mohteshemi, attach greater importance to Iran’s ties with the Muslim world, want fewer restrictions on efforts to export the revolution (although radicals generally prefer a more activist posture in this regard than do conservatives), and oppose *any* contact with the United States.⁹

Likewise, since the end of the Iran-Iraq War, Rafsanjani—a former patron of the Revolutionary Guard—has shown a preference for the regular military and has called for the merging of the regular military and the IRGC in the name of efficiency and professionalism. Conversely, Khamene’i is the main clerical patron of the IRGC and its popular militia, the Basij (which consists of poorly trained but ideologically committed civilian volunteers). Given the strength of the conservatives and the radical IRGC (deriving from its independent power base),¹⁰ it would be very

⁶ For more on Iranian politics, see Ali Banuazizi, “Iran’s Revolutionary Impasse: Political Factionalism and Societal Resistance,” *Middle East Report* 24, no. 6 (November-December 1994): 2-8. See also Patrick Clawson, *Business As Usual? Western Policy Options toward Iran* (Washington, DC: American Jewish Committee, 1995), 8-14; and Ahmed Hashim, *The Crisis of the Iranian State: Domestic, Foreign and Security Policies in post-Khomeini Iran* (London: International Institute for Strategic Studies, 1995), 7-9.

⁷ Haleh Vaziri, “The Islamic Republic’s Policy in the Persian Gulf: Who’s Containing Whom, How, and Why?” *Middle East Insight* 11, no. 5 (July-August 1995): 77.

⁸ *Ibid.*, 76-79.

⁹ Patrick Clawson, *Iran’s Challenge to the West: How, When, and Why* (Washington, DC: The Washington Institute for Near East Policy, 1993), 5-47; Clawson, *Business As Usual?* 8-14; and Vaziri, 76.

¹⁰ Kenneth Katzman, *The Warriors of Islam: Iran’s Revolutionary Guard* (Boulder, CO:

difficult for any government to enforce a merger of the regular military and the Revolutionary Guard. As a result, the division of the armed forces between the regular military and IRGC is likely to continue for the foreseeable future.

The Regular Military and the Revolutionary Guard

The division of the armed forces into two competing entities—the regular military and the IRGC—and the involvement of the latter in internal security and exporting Iran's Islamic revolution, have been major obstacles to creating a modern and effective military.

This division dates to the 1979 Islamic revolution, when the IRGC was formed in order to maintain internal security, safeguard the ideological purity of the revolution, and counterbalance the regular military—which was not trusted by the new regime.¹¹ Originally consisting of poorly trained, irregular mass infantry forces that specialized in human wave attacks during the Iran-Iraq War, the IRGC created organized infantry, armor, and artillery formations as well as naval and air arms in the course of the war.¹² The IRGC is also in charge of Iran's chemical and biological weapons and missile forces. This division of the armed forces into rival organizations has undermined unity of command and degraded military effectiveness.

This organizational division also initially reflected divergent approaches to modern warfare. The regular military tended to embrace a more conventional approach to war, with a balanced emphasis on hardware, technology, and the human component. By contrast, the IRGC elevated the human factor above all others in the belief that faith, ideological commitment, and morale would be sufficient to bring victory. This latter approach came to dominate Iranian thinking during the Iran-Iraq War. In light of lessons learned from the Iran-Iraq and Gulf Wars, however, the armed forces have developed a more balanced appreciation of the relative importance of modern arms, technology, and the human factor, and in exercises have tried to move away from the static attrition warfare practiced in the war with Iraq to combined arms operations and maneuver warfare.¹³

The regime has also tried to resolve some of the problems created by having two competing military organizations. In June 1988, following several major battlefield reversals during the latter stages of the Iran-Iraq War, it created a joint Armed Forces General Staff. This joint staff brought

Westview Press, 1993), 115-46.

¹¹ *Ibid.*, 23-48.

¹² *Ibid.*, 86-91.

¹³ *Ibid.*, 18-19; Chubin, 17-18, 20; Ahmed Hashim, "Iranian National Security Policies under the Islamic Republic: New Defense Thinking and Growing Military Capabilities," Henry L. Stimson Center, Washington, DC, July 1994, 9; and Glen E. Howard, "Zohd-1: An Iranian Combined Arms Exercise," Foreign Systems Research Center of Sciences Applications International Corporation (FSRC) Analytical Note A92-007/UL, Greenwood Village, CO, March 9, 1992.

together the upper echelons of the regular military and the IRGC and was intended to ensure unity of command. After the war, however, Supreme Guide Khamene'i approved the re-establishment of a separate IRGC headquarters in an apparent bid to curry favor with the Guard.¹⁴ In addition, new uniforms and a military rank structure were adopted in an effort to professionalize the IRGC.

Furthermore, the regime has attempted to formalize the division of labor between the regular military and the IRGC. It made the regular military responsible for defending Iran's borders and the IRGC responsible for internal security and the export of the revolution. In practice, however, this division has not been strictly observed; the regular military continues to have an internal security role and the IRGC—particularly its air and naval arms—continues to have a conventional military role. Moreover, the regular military and IRGC have held numerous joint field exercises in recent years.¹⁵

In August 1995, Supreme Guide 'Ali Khamene'i—who also is commander-in-chief of the armed forces—apparently took another step toward redefining the relationship between the regular military, the IRGC, and the Basij. According to press reports, Khamene'i ordered the IRGC to be reduced in size and reorganized as a “rapid deployment force” to defend potentially threatened borders (the Gulf coast and the borders with Iraq, Azerbaijan, and Afghanistan). Its internal security function was reportedly transferred to the Basij. Khamene'i reportedly also took steps—perhaps prompted by questions about the political reliability of the IRGC (see below)—to ensure their subordination to Armed Forces Chief of Staff General Hassan Firuzabadi, a civilian doctor with no military experience who is close to Khamene'i. Finally, the Basij was reportedly strengthened and its training intensified;¹⁶ in the past two years, the regime has held five major exercises involving hundreds of thousands of Basijis rehearsing the quelling of civil disturbances in urban areas.¹⁷

What actually transpired in this recent reorganization is not completely clear. Although the traditional division of labor between the regular military and IRGC was upheld, according to press accounts it was apparently somewhat redefined: the regular military retains primary responsibility for defending the country's borders, the IRGC is now responsible for internal security in border regions (although it retains a secondary mission of helping the regular military defend the country against external threats), and the Basij is now responsible for security in major urban areas.¹⁸

¹⁴ Katzman, *Warriors of Islam*, 105.

¹⁵ Anoushiravan Ehteshami, “The Armed Forces of the Islamic Republic of Iran,” *JIR*, February 1993, 77.

¹⁶ *al-Sharq al-Awsat*, August 2, 1995, 1, 4. See also *Mideast Mirror*, August 8, 1995, 15.

¹⁷ Patrick Clawson, “The Impact of U.S. Sanctions on Iran” (statement to the House International Relations Committee, November 9, 1995), 3.

¹⁸ See the comments of Brigadier General Muhammad 'Ali Ja'fari, IRGC ground forces

The actual division of labor between the regular military, the IRGC, and the Basij, however, is not so clear-cut; for instance, personnel from all three participated in the recent "Zolfiqar" urban defense exercises in Tehran in September 1995.¹⁹ This suggests that the relationship between the regular military, IRGC, and Basij is characterized much more by continuity than change and is much less clearly defined than implied by official pronouncements and press reports.

Civil-Military Tensions

Iran's clerical leadership has long looked with suspicion upon the regular military due to the latter's former ties to the Shah, viewing it as a potential counterrevolutionary force. This distrust was a major factor behind the purges of the military after the revolution, the decision to create the IRGC, and the formation of an ideological control mechanism for the armed forces. Whereas the regular military was the main pillar of support for the Shah's regime, the IRGC and the Basij emerged as the main pillars of support for the Islamic republic.²⁰ In light of this history, relations between the regular military and the IRGC have traditionally been characterized by ambivalence, mistrust, and at times outright hostility.

The riots that have wracked Iran since 1991 have exacerbated latent tensions between the country's political and military leadership and have apparently alienated some senior officers in both the regular military and the IRGC from the regime. The turning point was the refusal of regular army and IRGC units to quash a riot in Qazvin (a major town northwest of Tehran) in August 1994. As a result, the regime had to rely on special, newly formed IRGC and Basij units (such as the so-called Ashura battalions) that specialize in anti-riot tactics.²¹

Following the events in Qazvin, four senior active officers from the regular army, air force, IRGC, and security forces reportedly sent a letter to the country's political leadership on behalf of "a great number of officers, cadets, and soldiers of the armed forces" to "express their concern about the use of the armed forces to quell the people's dissatisfaction." In the letter, they warned that the armed forces "cannot be silent" concerning the "chaotic economic, cultural, and political situation" in the country and urged the "political leadership" to "take the appropriate steps necessary to end" the "dangerous situation."²²

commander, in *Ettela'at*, September 28, 1995, 8, in FBIS-NES, October 18, 1995, 65-66.

¹⁹ Iran TV, September 28, 1995, in FBIS-NES, October 3, 1995, 76-77; and IRNA, September 29, 1995, in FBIS-NES, October 3, 1995, 77.

²⁰ Nikola Schahgaldian, *The Iranian Military Under the Islamic Republic* (Santa Monica, CA: Rand Corporation, 1987), 12-41.

²¹ *WP*, October 7, 1994, A29; *Focus on Iran*, May 1995, 2; *Iran Brief*, May 1, 1995, 7; Edward G. Shirley, "Is Iran's Present Algeria's Future?" *Foreign Affairs* 74, no. 3 (May-June 1995): 36-37; and Hashim, *Crisis of the Iranian State*, 29.

²² These quotes (and those from a second letter cited below) are from versions of the letters circulated among Iranian expatriate circles; their authenticity cannot be verified.

Then, in September 1994, retired army general 'Azizollah 'Amir Rahimi published an open letter calling on Iran's leadership to "step down immediately" and allow free elections.²³ In a subsequent interview, he called on the armed forces to launch a *coup* "to change the existing conditions in Iran."²⁴ Rahimi was arrested in November 1994 for these statements but was subsequently released in March 1995 due to pressure by the armed forces. Rahimi is believed to reflect the private opinions of many active military officers.

Another letter allegedly signed by fifteen senior regular military and IRGC officers was reportedly sent to Ayatollah Khamene'i in March 1995. This letter went beyond the earlier one; after thanking Khamene'i for the release of Rahimi, it urged an end to the "intervention of the respected clergy in all the affairs of the country" and called for the "direct participation of the nation in political decisionmaking" in order to rescue the country from the "social and economic crises" it faces.

If these reports of discontent in the armed forces are true, they are significant for several reasons. First, they indicate that the regime may no longer be able to depend entirely on the country's armed forces in the event of widespread anti-government violence. Second, the apparent refusal of some regular military and IRGC officers to serve as tools of repression and their disenchantment with the country's leadership would be a source of concern for the regime; the clerics surely recall that the event that sealed the fate of the Shah in 1979 was the failure of the armed forces to move against anti-Shah protesters. Third, they would indicate that at least some senior personnel in the regular military and the IRGC—traditionally rival organizations—are in accord over the domestic role of the armed forces, and are willing to work together to achieve limited objectives.

Concerns about the reliability of some IRGC units and commanders may be behind the recently reported transfer of some of the IRGC's internal security functions to the Basij. Conversely, though the armed forces may be divided in their attitude toward the regime, some of the regime's strongest supporters can be found in the ranks of the military and IRGC, and there is no sign that disenchanted commanders will risk attempting a *coup*. At any rate, a military *coup* would almost certainly be thwarted by the intervention of pro-regime elements in the armed forces (particularly the IRGC), and the clerical leadership's ability to rally thousands of Basijis and "Hezbollahis" (hard-core supporters of the regime drawn mainly from the urban and rural poor) to their defense if the regime were threatened.

²³ *Independent*, September 28, 1994, 11, in FBIS-NES, September 28, 1994, 40.

²⁴ *al-Majallah*, November 6, 1994, 29, in FBIS-NES, November 18, 1994, 54.

GROUND FORCES

Iran's standing ground forces consist of about 350,000 men (220,000-230,000 in the regular army and 120,000-130,000 in the IRGC) organized into four army corps and fifteen IRGC regional headquarters, with about thirty mostly understrength divisions (ten to twelve regular army and twenty IRGC), and more than thirty independent brigades. These units are equipped with more than 1,200 tanks, 1,000 APCs, 2,000 artillery pieces, and about 425 helicopters (although only about 275 are operational).²⁵

Until recently, the ground forces received the lowest priority with regard to procurement and modernization. This may be due in part to the fact that none of Iran's neighbors currently poses a major threat on the ground, creating less urgency to rebuild the ground forces relative to the other branches of the armed forces. Moreover, Iran's rugged terrain, large size, and strategic depth are great assets that would pose major challenges to any potential invader.

Nearly all of Iran's major population centers are located in the interior of the country, behind the rugged mountain ranges that ring its heartland and serve as a formidable natural barrier to invasion. Iran's road network is not highly developed (although the regime has made large strides since the revolution in its efforts to expand and update it) and most major highways that permit rapid movement are located in the interior of the country.²⁶ The few roads connecting border regions with the interior can in many cases be cut in various places—at mountain passes, tunnels, and bridges spanning deep gorges. Thus, long stretches of border can be defended by relatively small mechanized and light infantry forces reinforced by airmobile reserves. Almost all of Iran's oil, however, which accounts for 80 percent of its foreign exchange earnings, is located in the flat, exposed region of Khuzistan, near the southwestern border with Iraq; the defense of this area requires large, mobile armored forces.

Since 1989, Iran has signed contracts for hundreds of tanks, IFVs, and artillery pieces from Russia, China, and Poland.²⁷ These contracts, if honored, would more than double the size of Iran's ground forces (although some appear to have been canceled for financial reasons).²⁸ To date, thirty-four T-72 tanks from Poland, 150 T-72 tanks and eighty BMP-2 IFVs from Russia, and 106 artillery pieces from China have been delivered.²⁹ In addition, India has signed a contract to upgrade several

²⁵ Shlomo Gazit, ed., *MEMB: 1993-94* (Boulder, CO: Westview Press, 1994), 288-90, 293-94.

²⁶ Lt. Col. Ye. Gromov, "Principal Iranian Communication Routes and Ground Transportation," *Zarubezhnoye Voyennoye Obozreniye*, November 1987, 70-76, in JPRS-UFM, May 10, 1988, 40-45.

²⁷ *FT*, February 8, 1993, 4; and *Yediot Aharonot*, April 17, 1992, 1, 2, 28, in FBIS-NES, April 22, 1992, 36.

²⁸ Czechoslovakia, for instance, wanted to sell Iran 1,500 tanks but refrained from doing so due to U.S. pressure; see *NYT*, February 13, 1994, A15.

²⁹ United Nations Register of Conventional Arms, report of the secretary general, UNGA, A/49/352, September 1, 1994, 44; and *NYT*, May 17, 1995, A3.

hundred older T-55 tanks,³⁰ and Iran has acquired various types of equipment and components for its ground forces (including night vision devices, military optics, and spare parts) on the international black market.

Iran's ground forces have only a limited ability to conduct modern combined arms operations due to an inappropriate force structure (in which "leg" infantry formations still predominate), poor C³I capabilities, an inability to effectively integrate air and ground operations, the low professional standards of its leadership, and the overall low training standards of its forces. Moreover, its ability to sustain its forces in high intensity combat is limited by an inadequate logistical infrastructure, a lack of trained technical support personnel, and a shortage of spare parts.

Most of the weaknesses of Iran's ground forces are unlikely to be remedied in the near future; its organizational problems are rooted mainly in politics (namely the division of the ground forces between the regular military and IRGC) and thus are unlikely to be corrected by even massive investments of resources, while the modernization of its forces would require the allocation of massive sums of money which Iran just does not have. Moreover, Iran would have to acquire very large quantities of equipment to even begin to address some of the key structural shortcomings of its ground forces.

First, Iran's large force structure (measured by the number of major formations such as divisions and brigades) far exceeds its limited resource base (in terms of manpower and equipment). Most units are under-strength. IRGC armored divisions, for instance, deploy on average a few dozen tanks, and mechanized divisions have about 100 APCs.³¹ As a result, most formations are far less capable than comparable units in other armies and lack the men and equipment needed to accomplish basic missions.

Second, Iran has emphasized the acquisition of major weapons systems such as tanks, artillery, and attack helicopters at the expense of less conspicuous items such as IFVs, modern C³I systems, night vision equipment, and advanced munitions, which are critical to building the kind of balanced force structure that is vital to success on the modern battlefield. Lacking the funds to build a balanced force structure, Iran may simply be doing what many other developing countries do: maximizing force structure at the expense of equally important force multiplier technologies and support capabilities.

Finally, most of the ground forces' equipment is old, worn, and poorly maintained. It would neither survive combat against a modern, well-equipped and trained adversary, nor remain serviceable for long under combat conditions due to an inadequate support infrastructure, a lack of competent technical personnel, and shortages of spare parts.

³⁰ *WT*, June 21, 1995, A17.

³¹ *MEMB*: 1992-93, 147. By comparison, armored divisions in most armies have between 175-350 tanks and mechanized divisions have a similar number of APCs.

At present, Iran's ground forces could not sustain even limited offensive action against any of its neighbors, and the armed forces will be restricted to playing a defensive role in the coming years. Iran's own weakness on the ground, however, is offset by the fact that it does not currently face any serious threat on the ground from any of its neighbors.

AIR AND AIR DEFENSE FORCES

Iran's experience during the Iran-Iraq War underscored its vulnerability in the air; Iraq repeatedly hit military and economic targets and population centers in Iran with relative impunity. The importance of air power was further reinforced by the Gulf War, which demonstrated the potential of modern combat aircraft and the importance of strong air defenses. Accordingly, the late Air Force Commander Brigadier General Mansur Sattari (who was killed in an airplane crash in January 1995) stated that Iran needs to be able to defend its air space so that it can undertake the task of post-war reconstruction unhindered; if it is going to spend billions of dollars rebuilding the country's worn and war-ravaged civilian infrastructure, it needs strong air defenses to protect it against attack from the air.³² Additional duties Sattari mentioned include attacking the enemy's economic and military infrastructure, supporting the ground forces, defending off-shore oil installations, and escorting oil tankers in the Gulf.³³ Because of the importance of these missions, Iran has made rebuilding its air and air defense forces a priority (although less so than the expansion of its strategic missile forces and navy).

Iran's air and air defense forces, however, remain the weakest link in its overall defense posture. Iran has only about 215 operational combat aircraft—including a varied mix of F-4s, F-5s, F-7s, F-14s, Su-24s, and MiG-29s—out of a total inventory of 300 aircraft.³⁴ Its aircraft inventory is divided between the regular air force and the IRGC's small air arm.³⁵ Iran's ground based air defenses are built around a relatively small number of SA-2, SA-5, SA-6, Rapier, and I-HAWK SAMs (many of which are either obsolete or obsolescent); a variety of older air defense radar; and about 3,000 towed and self-propelled AAA guns of various caliber. Iran does, however, possess a network of excellent modern sheltered airbases built by the Shah at various locations around the country.³⁶

³² Mohammed Ziarati, "Iranian National Security Policy," *Middle East International*, April 3, 1992, 18.

³³ Glen E. Howard, "Rebuilding the Iranian Air Force," FSRC Analytical Note A92-055/UL, Greenwood Village, CO, December 10, 1992.

³⁴ *MEMB: 1993-94*, 292.

³⁵ The Revolutionary Guard air arm is equipped largely with low-technology aircraft such as the Chinese F-6 and F-7 and the Brazilian Tucano.

³⁶ Anthony H. Cordesman, *After the Storm: The Changing Military Balance in the Middle East* (Boulder, CO: Westview Press, 1993), 407.

The greatest shortcoming of the air force is its lack of sufficient numbers of modern combat aircraft (like the MiG-29) to meet its minimal operational requirements. Moreover, most of its older operational aircraft (such as the F-4E) are not fully mission capable; their radar and avionics are often non-operational, thereby degrading performance. Nonetheless, Iran has done an impressive job at maintaining at least minimal operational rates under difficult circumstances.³⁷

IRAN: COMBAT AIRCRAFT

	<u>F-4</u>	<u>F-5</u>	<u>F-7</u>	<u>F-14</u>	<u>Su-24</u>	<u>MiG-29</u>	<u>Total</u>
Operational	40	45	25	25	24	30	215
Total	70	75	25	60	30	30	300

Furthermore, Iran's air and air defense forces lack sufficient mass to adequately defend all of Iran's air space—a very small number of fighters, SAMs, and AAA must defend a large number of targets dispersed over a very large area. As a result, there are substantial gaps in Iran's air defenses.³⁸ Moreover, most of Iran's SAMs are older systems that are unable to function in a modern EW environment and are easily jammed.

In addition, the functional incompatibility of many of the Eastern- and Western-origin systems currently in its inventory is a major obstacle to creating a truly integrated air defense system. This is a particularly significant liability because several potential adversaries (the United States, Israel, and—to a lesser extent—Saudi Arabia and the smaller Arab Gulf states) have modern, capable air forces. On the plus side, the air force retains a pool of well-trained, competent pilots, and remains the only service with the flexibility to rapidly respond to threats anywhere along the country's borders.

Iran's air force received a boost during the Gulf War with the arrival of 115 Iraqi combat aircraft seeking safehaven. These included four MiG-29s, twenty-four Mirage F-1s, twenty-four Su-24s, forty-four Su-20/22s, twelve MiG-23s, and seven Su-25 fighter aircraft. Only the MiG-29s and the Su-24s

³⁷ India is expected to help Iran maintain its air force in the near future. One indicator of the combined impact that purges and arms embargoes have had on Iranian air force readiness and safety is the fact that two armed forces chiefs of staff and two air force commanders have died in air crashes since the 1979 revolution (including, most recently, Air Force Commander Mansur Sattari and several key deputies in January 1995). In 1994, some 400 people, including 150 military personnel, were killed in aviation accidents in Iran. See *Mideast Mirror*, January 10, 1995, 11.

³⁸ The magnitude of Iran's problem becomes clear when one considers that Iran has about 200 operational combat aircraft to defend a total land mass of 1,648,000 square km: This translates to an (air) force to (air) space ratio (in kilometers) of 1:8,240 for Iran. By comparison, the air force to air space ratio for Israel is 1:50; for Iraq, it is 1:1,450; and for Saudi Arabia, it is 1:6,500. Although not every kilometer of airspace must be defended, these figures provide a general sense of the air defense challenge Iran faces.

are believed to have been integrated into Iran's air force. Russia and Syria have reportedly helped Iran operate and maintain them by providing spare parts and technical assistance.³⁹ In addition, Iran hopes to buy forty-eight more MiG-29 fighters and twenty-four more Su-24 strike aircraft from Russia and up to seventy-two F-7 or F-8 II fighters from China (twenty-five F-7s were delivered in the past two or three years).⁴⁰ These acquisitions would more than double the operational strength of Iran's air force, significantly enhancing its air defense capabilities and increasing its offensive potential.

Of its recent acquisitions, Iran's Su-24 strike aircraft cause the greatest concern. The Su-24 is an advanced two-seat strike aircraft that offers an excellent range/payload combination with a high-speed low-level penetration capability. It marks a significant improvement in Iran's maritime and strategic strike capabilities.⁴¹ Along with its SCUD-B and -C missiles, Su-24s capable of delivering chemical bombs against enemy population centers form the backbone of Iran's strategic forces.

Despite its problems, Iran's air force retains a modest offensive capability. In April 1992, May 1993, and November 1994, Iranian combat aircraft bombed opposition Mojahedin-e Khalq and Kurdish Democratic Party of Iran bases deep inside Iraq, demonstrating an ability to penetrate Iraqi airspace at will (although the Iranian pilots have had trouble putting ordnance on target). Iran's air force probably could not repeat this feat, however, against the Arab states of the southern Gulf.

Iran is negotiating the purchase of SA-10 SAMs from Russia and tried unsuccessfully to acquire six Tamara passive air defense warning systems (which can reportedly detect stealth aircraft) from the Czech Republic in order to lay the foundation for a modern, integrated air defense.⁴² The SA-10 is a highly capable long-range, all-altitude SAM that can engage several targets simultaneously, including tactical ballistic missiles, low altitude aircraft, and cruise missiles. Its acquisition would be a major step toward rebuilding and modernizing Iran's air defenses. It would have to be deployed in very large numbers, however, to close major gaps in Iran's air defense coverage; this would probably require a larger investment than Iran can currently afford. Consequently, the lack of adequate air defenses are likely to remain a critical Iranian vulnerability for years to come. Recognizing this, Iran has built up its strategic missile force as a cost-effective way of countering the stronger air forces of its neighbors and compensating for the weakness of its air defenses.

³⁹ *Ha'aretz*, November 22, 1991, A5.

⁴⁰ United Nations Register of Conventional Arms, 16.

⁴¹ Flying a "lo-lo-hi" mission profile, the Su-24 can carry 2,500 kg of ordnance for 950 km; flying a "hi-lo-hi" mission profile and carrying two external fuel tanks, it can carry 3,000 kg of ordnance for 1,300 km. See John W. R. Taylor, ed., *Jane's All the World's Aircraft, 1989-90* (London: Jane's Publishing, Inc., 1990), 276-77.

⁴² Glen Howard, "Iran Targets Czech Air Defense Systems," *Notes on Russia and Central Asia*, August 11, 1993, 2. See also *Iran Brief*, April 3, 1995, 6-7.

NAVAL AND COASTAL MISSILE FORCES

Since Operation Desert Storm, the Persian Gulf has been the primary focus of Iran's regional policy. As a result, Tehran has made the expansion and modernization of its naval forces—its chief instrument of influence in this arena—a top priority.

The Persian Gulf is a region of vital importance for Iran. According to Foreign Minister Velayati, "our most important and strategic border is our southern coastline, the Gulf, the Strait of Hormuz, and the Sea of Oman. This region is vital to us. . . . We cannot remain indifferent to its fate."⁴⁵ There are several reasons for this. First, the Gulf is the main export route for Iran's oil, which accounts for some 80 percent of its foreign exchange earnings. Second, key Iranian oil production and refining facilities are located in or near the Gulf. Third, most of Iran's international trade passes through the port of Bandar Abbas; preserving freedom of navigation in the Gulf is therefore a vital Iranian interest. Fourth, Iran sits adjacent to the Strait of Hormuz and could disrupt the flow of oil from the region; this potentially provides it with a degree of leverage over the Arab Gulf states and the West.⁴⁶ Finally, because U.S. and Iranian military forces operate in proximity in the Gulf, it is a potential flash point for conflict between the two countries.

Iran's naval forces (both regular and IRGC) consist of three frigates, three destroyers, fifteen missile patrol boats, two submarines, 175 coastal patrol craft and small boats, twenty-three amphibious landing craft, and three mini-submarines. Its naval air arm includes air force Su-24s and F-4Es (which can be employed in the maritime strike role), SH-3D ASW helicopters, ASUW helicopters armed with AS-12 missiles, and maritime reconnaissance aircraft. Its coastal missile forces include batteries of HY-1 Silkworm, HY-2 Seersucker, and C-801 Sardine antiship missiles.⁴⁷

Iran's navy is capable of limited offensive action, but its arena of action is restricted largely to the waters of the Persian Gulf and coastal areas. It is organized to fulfill a number of missions, including: controlling the Strait of Hormuz; projecting Iranian power in the Gulf; denying its enemies use of the Gulf by attacking their sea lines of communication and port facilities; protecting its own sea lines of communication; and intimidating its Arab Gulf neighbors to achieve political objectives.⁴⁸

⁴⁵ Ziarati, 18.

⁴⁶ During the Iran-Iraq War, senior Iranian officials repeatedly warned that Iran would block the Strait of Hormuz and prevent all oil exports from the region if Iraq were to cripple Iran's ability to export oil. See R. K. Ramazani, *Revolutionary Iran: Challenge and Response in the Middle East* (Baltimore, MD: Johns Hopkins University Press, 1988), 13-18.

⁴⁷ MEMB: 1993-94, 295-97. Of these, the IRGC's naval forces include small boat units, shore-based antiship missile batteries, and naval special forces.

⁴⁸ Glen E. Howard, "Iran: Naval Missions and New Submarines," FSRC Analytical Note A92-056/UL, Greenwood Village, CO, December 16, 1992.

Iran has the largest navy of all the Gulf states. It suffers, however, from a number of major shortcomings due to losses sustained during the Iran-Iraq War and the effects of a crippling international arms embargo. Most of its major surface combatants are not fully mission capable because key radar and electronic subsystems are not operational or do not function reliably due to a lack of maintenance and spare parts. In addition, the operational effectiveness of Iran's navy is further limited by:

- severe shortages of modern antiship missiles, due to the arms embargo and the fact that munitions delivered before the revolution have in many cases exceeded their maximum storage life. (The recent delivery of C-802 antiship missiles, however, should alleviate this problem.)⁴⁷
- a lack of a significant air defense capability. Iran's navy has neither a strong air arm nor a significant at-sea antiair capability, both of which are key to survival in modern naval combat. (During the Gulf War, coalition air power quickly routed the Iraqi navy because it was unable to defend itself against air attacks.)⁴⁸
- an inability to modernize its forces as a result of a long-standing arms embargo. Consequently, much of its force remains obsolete in an arena of warfare where technology is of critical importance.

Iran's navy is essentially a guerrilla navy. During the Iran-Iraq War, Iran emphasized the use of air power (including both fixed- and rotary-wing aircraft), small boats employing hit-and-run type tactics, shore-based antiship missile batteries, and mine warfare, due in part to the vulnerability and poor readiness of its major surface combatants. Iran remains wedded to this style of naval warfare, even though these operations never seriously disrupted shipping in the Gulf (although they did cause much anxiety around the world).⁴⁹

Despite its shortcomings, the Iranian navy is an active force by regional standards. In the last training year (March 1995-February 1996), Iran held nearly sixty naval exercises.⁵⁰ Many of these are major events. For example, in April-May 1992, the navy held an eleven-day combined-arms exercise code-named "Victory 3" which, according to Iranian news reports, simulated an Iranian attempt to "foil [a] hypothetical enemy's penetration of the strategic Strait of Hormuz region." The exercise, which extended over an area covering more than 10,000 square miles, involved more than forty-five major surface combatants, 150 coastal patrol boats, midget submarines, coastal missile units, air force combat aircraft, ASW helicopters, marines, naval special forces, and divers. It reportedly included "operations for blocking the sea routes and mining the waters" as

⁴⁷ Cordesman, *After the Storm*, 412. It may be possible, however, to refill certain types of munitions in order to extend their shelf life.

⁴⁸ David Foxwell, "Operational Lessons: Contending with Iraq's Patrol Boats," *International Defense Review* 24, no. 5 (May 1991): 466. There is no doubt that under similar circumstances, Iran's surface fleet would have fared no better.

⁴⁹ Cordesman, *After the Storm*, 411-12.

⁵⁰ IRNA, October 17, 1995, in FBIS-NES, October 19, 1995, 79.

well as “amphibious operations and the deployment of marines on enemy shores” and concluded with “ground combat units penetrating into the depths of the hypothetical enemy’s coastal positions.” This exercise was typical of others that have been held since then in that it highlighted Iran’s offensive power projection capabilities as well as its putative defensive concerns. Naval exercises in the Gulf are often loudly advertised by Iran’s English-language radio service—presumably to intimidate the Arab Gulf states.

Iran is also seeking closer cooperation with the navies of Pakistan and India. Iran held joint naval exercises with Pakistan for ten days in February–March 1994. Its contribution consisted of four warships, reconnaissance aircraft, and antisubmarine helicopters; the Pakistani contribution consisted of five warships, one submarine, and several air force aircraft and helicopters. This was the first military exercise of any kind that Iran has held with a foreign country since the 1979 revolution.⁵¹ Pakistan has reportedly also transferred several midget submarines to Iran for training and evaluation. Meanwhile, India has helped Iran solve initial problems with the batteries of its newly acquired Kilo-class submarines. Building on this successful start, Iranian-Indian naval cooperation is likely to grow in the future.

Naval Procurement

Iran’s naval expansion and modernization plans call for the acquisition of fast attack craft, maritime strike aircraft, submarines, and advanced antiship missiles, torpedoes, and mines.⁵²

In an effort to strengthen its surface fleet, Iran has acquired ten Houdong-class missile patrol boats from China; five were delivered in August 1994 and five more in March 1996. The Houdong is a modernized version of the old Soviet Komar-class boats and will likely be restricted to use in the Gulf and coastal waters. Moreover, in January 1996 Iran conducted its first test of C-802 antiship cruise missiles recently received from China. These are expected to be fitted on the Houdongs and Iran’s other missile boats. The transfer of the C-802, which has a maximum effective range of sixty to seventy-five miles, is a major milestone for Iran. It is the first new seaborne antiship missile to enter Iranian service since the revolution and thus closes an important gap in its capabilities. Iran will

⁵¹ Radio Tehran, February 7, 1994, in FBIS-NES, February 7, 1994, 68; Radio Tehran, February 24, 1994, in FBIS-NES, February 25, 1994, 44; and Radio Tehran, March 3, 1994, in FBIS-NES, March 3, 1993, 43.

⁵² In a June 1990 interview, Navy Commander Admiral ‘Ali Shamkhani discussed the navy’s procurement plans, stating that Iran’s acquisition of submarines would expand the mission of the navy “in the Persian Gulf and outside the Strait of Hormuz”; that Iran would acquire “more advanced, modern, and more readily available missiles”; that “the engines of some of the vessels will be improved” with foreign help to increase their speed; that “the shore-to-sea missile capability of this force will be strengthened significantly”; and that the navy “will [soon] be equipped with new airplanes.” See *Ettela’at*, June 12, 1990, 3, in FBIS-NES, August 1, 1990, 53.

once again be able to arm most of its surface combatants with antiship missiles, thereby dramatically increasing the offensive punch of its fleet. The C-802 provides Iran with an over-the-horizon targeting capability, and it can be programmed to fly a deceptive zigzag path to a target, enabling it to approach from an unexpected direction. In addition, the C-802 is a sea-skimming missile that flies only a few meters above the water, which makes it very difficult for radar or lookouts to detect in flight.⁵³

Iran has a growing naval air arm that now includes air force Su-24 and F-4E aircraft which—among other things—fulfill the long-range maritime strike role. (During the Iran-Iraq War, Iran used F-4E aircraft armed with Maverick missiles and modified Oghab rockets in the antiship role.) Iran also possesses a number of helicopters configured for ASW and mine sweeping missions, although little is known about their capabilities. Iran's long-range maritime reconnaissance capability consists of one or two operational P-3F Orions with nonfunctioning surface surveillance radar; consequently, its crews use binoculars to scan the ocean for targets. It also uses C-130s and Fokker Friendships in this role.⁵⁴ The overall weakness of Iran's air force puts the navy at a major disadvantage in any future conflict since the latter might have to operate without air cover.

Iran has a modest amphibious capability that provides it with a limited power projection capability in the Gulf. It can transport twenty-five to thirty tanks and 800-1200 troops in a single sortie—enough to seize and hold contested islands or offshore oil terminals in the Gulf.⁵⁵ However, it lacks the ability to support and sustain a large force far from its shores in peacetime (it has had problems supporting forces located on Abu Musa island and the Tunbs, for instance). It would have even more problems doing so in wartime. Logistical shortcomings thus greatly constrain Iran's amphibious options in the Gulf.

Iran has two Kilo-class 877 EKM submarines; the first was delivered in November 1992, the second in August 1993, and it may acquire a third in 1996. These represent a new order of naval threat in the region. Although Iran's interest in submarines pre-dates the revolution, its recent acquisitions may be motivated in part by experiences during the Iran-Iraq War. In October 1987 and April 1988, Iran lost a number of surface ships in clashes with the U.S. Navy—demonstrating the poor survivability of its major surface combatants against a modern navy. Moreover, the *Iran Ajr* incident in September 1987 (involving an Iranian ship caught laying mines in the Gulf) demonstrated the need for a covert mine-laying capability. Iran's acquisition of submarines may thus reflect an effort to extend the striking range, enhance the mine warfare capability, and improve the survivability of its navy. It may also reflect a desire to garner the prestige of being the only state in the region to possess submarines.

⁵³ *NYT*, January 31, 1996, A5; and *WT*, March 8, 1996, A8.

⁵⁴ Cordesman, *After the Storm*, 413.

⁵⁵ *Ibid.*, 412.

The Kilo can carry eighteen torpedoes or twenty-four tube-launched mines. It has an effective operational range of about 400 miles while submerged and can operate in this mode for up to six days. And with a maximum range of about 7,500 miles while snorkeling, it has a maximum endurance of about forty-five days.⁵⁶

Iran's Kilos could be difficult to detect: they can run almost silently, and the shallow and heavily trafficked waters of the Gulf of Oman offer a favorable operational environment for small diesel submarines. Moreover, they have the potential to dramatically extend the reach of Iran's navy by providing it with the ability to interdict sea lanes in the Indian Ocean, covertly lay mines on both sides of the strategic Strait of Hormuz, and covertly insert naval special forces near enemy coastal installations.⁵⁷ Iran has reportedly experienced problems with its Kilos, however. Salt and seaweed have repeatedly clogged the ships cooling intakes and filters, and the ship's original batteries—designed for use in colder northern waters—were reportedly unable to hold a full charge in the warm waters of the Persian Gulf region. Iran overcame the latter problem by replacing the batteries with Indian-manufactured units optimized for warm water use.⁵⁸

Despite the potential offered by these submarines, Iran faces a number of major obstacles to their effective employment:

- Iran lacks experience in undersea warfare—among the most demanding and unforgiving of combat environments, since a single human error or mechanical malfunction can result in the loss of a ship and its crew. Yet according to senior U.S. naval officers, Iran's submarine crews have been making rapid progress. They are probably capable of simple missions such as the covert laying of mines, and in November 1994 they test-launched torpedoes for the first time. It may be several years, however, before Iran's submarine crews can fully exploit the potential of their vessels.⁵⁹
- The effective use of submarines in shallow waters and in high-threat ASW environments requires detailed oceanographic data concerning the intended area of operation, including ocean currents, background noise, pressure and temperature gradients, water depths, and sea-bottom topography; it is unlikely that Iran has this kind of data or the sophisticated technical means to obtain it.⁶⁰

⁵⁶ David Miller, "New Russian Submarine Hunts Export Market," *IDR*, September 1994, 52-59.

⁵⁷ Russia makes the Sirena-UM swimmer delivery vehicle, which can carry two combat divers and be launched from the torpedo tubes of a submarine. It has a range of eleven miles and can travel at two to four knots at depths of up to forty meters. The sale of these underwater vehicles to Iran would give a significant boost to its naval special warfare capabilities; see *JDW*, March 20, 1993, 23.

⁵⁸ *JDW*, October 8, 1994, 4; *JDW*, January 7, 1995, 3; and Anthony Preston, "World Navies in Review," *USNIP*, March 1995, 110.

⁵⁹ *DN*, January 17-23, 1994, 30; and *WT*, January 17, 1995, A11.

⁶⁰ The U.S. Navy, however, plans to release large quantities of formerly classified oceanographic data about the world's major bodies of water in the coming years to support

- In submarine warfare, numbers matter. Iran's small fleet of two or three submarines simply lacks sufficient mass to inflict significant losses on civilian shipping (more than 6,000 tankers ply the waters of the Gulf annually) or absorb the loss of even a single ship.⁶¹ Thus, Iran would probably avoid using its submarines to engage maritime shipping with torpedoes (the launch of which produces a large acoustic signature that would compromise the submarine's location and thereby facilitate its destruction). It might, however, be willing to incur such risks to attack a high-value military target such as an aircraft carrier. Iran would more likely use its submarines to covertly lay mines that could be activated days or weeks after the submarines had departed the area, thereby enhancing the survivability of its small submarine fleet.
- Geography imposes significant limits on Iran's submarines. Currently based at Bandar Abbas, they will have to return to their home base periodically (every few days or weeks) to refuel, rearm, and undergo repairs; as they depart and return to base, they will be vulnerable to enemy ships lying in wait offshore. And if deployed to the Persian Gulf, they will have to transit the narrow Strait of Hormuz, increasing the likelihood of detection.
- The United States is a world leader in ASW. For decades it poured immense resources into preparations to fight the Soviet Union, which had the largest submarine fleet in the world. Thus, the United States has the expertise, experience, and hardware to accomplish this demanding mission. It is preparing for ASW in the Gulf by charting the waters there⁶² and holding regular ASW exercises with several Gulf states. Although the shallow, noisy, heavily trafficked waters of the Persian Gulf are a challenging ASW environment for any country,⁶³ the United States and its allies clearly have an important edge over Iran in this area.
- Iran has only a rudimentary submarine command and control capability because it lacks Very Low Frequency (VLF) radio

environmental research; some of this information could be useful to Iranian naval planners. See *NYT*, November 28, 1995, C1, C12. For the problems involved in shallow water submarine and antisubmarine operations, see Michael J. Carron, Steve Haeger, and Paul LaViolette, "The Challenge of Coastal Shallows," *USNIP*, December 1994, 79-81.

⁶¹ During the Iran-Iraq War, hundreds of attacks by both sides' surface ships and aircraft on maritime shipping in the Gulf had little effect on the volume of maritime traffic or the price of oil (although Iran had to pay increased insurance rates that drained away hard currency that could otherwise have been used for arms purchases). Iran's two submarines could inflict only a fraction of the damage inflicted during the war. See Anthony H. Cordesman and Abraham R. Wagner, *The Lessons of Modern War: The Iran-Iraq War* (Boulder, CO: Westview Press, 1990), 568. For historical background on the importance of numbers in submarine warfare, see Karl Lautenschlager, "The Submarine in Naval Warfare, 1901-2001," *International Security* 11, no. 3 (winter 1986-87): 248, 253-54, 278-82.

⁶² *NYT*, November 5, 1992, A3.

⁶³ For the problems of shallow water ASW, see Eugene Miasnikov, "Submarine Collision off Murmansk: A Look from Afar," *Breakthroughs*, winter 1992-93, 21.

communications equipment needed to contact submerged submarines. That may be why Iran has used ASW helicopters with dipping sonar to “ping” coded messages to submerged submarines.⁶⁴ This method of communication, however, limits the operating range of the submarines to that of the helicopter couriers (which are vulnerable to enemy air power) and risks compromising the location of the submarines.

- Iran’s submarines have only a limited over-the-horizon tracking and targeting capability, reducing their potential effectiveness. The Iranian navy’s long-range maritime reconnaissance assets—such as the P-3F Orion aircraft—provide only a visual-range target acquisition capability and are of limited help in this regard.⁶⁵ The Kilo’s on-board signals intercept and direction-finding systems provide a modest over-the-horizon target acquisition capability, but they can be defeated if potential victims carefully limit their use of radar and employ good radio discipline. And the submarine’s periscope and surface surveillance radar offer only a short-range, line-of-sight target acquisition capability.

Despite all this, Iran’s Kilos remain a potential threat that the United States and its allies cannot afford to ignore, particularly in light of Iran’s recent acquisition of advanced wake-homing and wire-guided acoustic-homing torpedoes from Russia.⁶⁶ The Kilos provide Iran with the ability to threaten shipping in the Gulf of Oman and beyond. And in the event of a conflict involving the United States, Iran’s Kilos might succeed in inflicting some damage on U.S. warships and civilian merchant vessels, although they probably would not survive beyond the first few days of fighting or the first few engagements.

Iran is also reportedly interested in expanding its small inventory of mini-submarines. At present it has three (one from North Korea, one from Germany, and one developed locally) but only one is believed to be operational.⁶⁷ Iran would reportedly like to acquire as many as five additional mini-subs, and has reportedly obtained at least two Pakistani SX 756 mini-subs for evaluation and training (these are seventy-five ton boats built in the mid-1970s by Cosmos of Italy).⁶⁸ The acquisition of additional

⁶⁴ *DN*, January 17-23, 1994, 30.

⁶⁵ Cordesman, *After the Storm*, 413.

⁶⁶ U.S. Navy, *Worldwide Submarine Proliferation in the Coming Decade* (Washington, DC: Office of Naval Intelligence, 1995), 13. See also *JDW*, January 7, 1995, 3. Wake-homing torpedoes find their targets by following the turbulence created by ships’ hulls and propellers. Acoustic-homing torpedoes do so by following the noise created as ships move through the water.

⁶⁷ One of these is a West German Seahorse II civilian utility submersible designed for underwater repair and maintenance; it apparently has been modified to perform military missions. For more on the Seahorse and midget submarines, see Massimo Annati, “Underwater Special Operations Craft,” *Military Technology*, March 1996, 85-89.

⁶⁸ Andres de Lionis, “Pakistan’s Naval Special Service Group,” *JIR*, March 1994, 137. For details concerning Russian and North Korean midget subs, see *JDW*, March 20, 1993, 23; *IDR*, June 1993, 428; and Joseph S. Bermudez Jr., “North Korea’s Intelligence Agencies and

mini subs could greatly enhance Iran's operational capabilities in the Persian Gulf; they are small, difficult to detect, invulnerable to many traditional ASW countermeasures, and probably appeal to Iran's unconventional approach to naval warfare.⁶⁹ Within the shallow confines of the Gulf, they could attack surface shipping with torpedoes or mines or insert naval special forces to attack harbor installations, oil terminals, and off-shore oil platforms with limpet mines—freeing the larger Kilos to operate outside the Gulf where they would be less vulnerable.⁷⁰

Iran also has a significant mine warfare capability. During the latter stages of the Iran-Iraq War, it laid about 200 mines in the Gulf in an effort to disrupt maritime traffic and punish the southern Gulf states and the West for supporting Iraq.⁷¹ A total of ten ships were struck by mines; several were badly damaged (including the U.S. tanker *Bridgeton* and the frigate *Samuel B. Roberts*) and two—a small support ship and a small research ship—were sunk.⁷² The Iranian mining of the Gulf created problems out of proportion to the resources and effort expended.⁷³

Mines are cheap to produce, easy to deploy, and difficult to counter, and counter-mine operations are extremely resource-intensive and time consuming. Mines pose a difficult threat even for modern navies and are thus particularly attractive to countries such as Iran that are otherwise unable to meet more powerful enemies on equal terms. Iran reportedly has about 2,000 naval mines of various types, including the Soviet M-08 and MYaM moored contact mines (which it initially acquired from North Korea and now produces locally) and possibly bottom-influence and limpet mines of Soviet and Yugoslav origin that it acquired from North Korea and Libya. It is also believed to be seeking more advanced mines.⁷⁴

Infiltration Operations," *JIR*, June 1991, 269-77.

⁶⁹ For the use of midget submarines in World War II, see Richard Compton-Hall, "The Menace of the Midgets," *Submarine Review*, April 1989, 11-17.

⁷⁰ In a recent naval special warfare exercise, for example, Iranian combat divers helocasted into the Persian Gulf and Strait of Hormuz, conducted "underwater demolition" and "beach reconnaissance" exercises, and simulated "attacks on marine installations, jetties and platforms defended by an imaginary enemy." See Radio Tehran, December 18, 1993, in FBIS-NES, December 21, 1993, 72.

⁷¹ Cordesman and Wagner claim that 176 M-08 and MyAM mines were neutralized as part of the international counter-mine effort. See Cordesman and Wagner, 565.

⁷² Ted Hooton, "The Tanker War in the Gulf: 1984-88," *JIR*, May 1992, 220.

⁷³ At about \$1,000 per mine—for a total cost to Iran of about \$200,000—it caused damage totaling well over \$100,000,000; see Rear Admiral Thomas Brooks, director of naval intelligence, statement to the Seapower, Strategic, and Critical Materials Subcommittee, Armed Services Committee, U.S. House of Representatives, March 7, 1991, 68. Likewise, during the 1991 Gulf War, a series of dense Iraqi minefields off the coast of Kuwait deterred the United States from undertaking an amphibious landing and greatly complicated naval operations in the western half of the Gulf; see David K. Brown and David Foxwell, "Report from the Front: MCM and the Threat Beneath the Surface," *IDR*, July 1991, 735-38; and DoD, *Conduct of the Persian Gulf War*, April 1992, 199-208.

⁷⁴ Rear Admiral William O. Studeman, director of naval intelligence, statement to the Seapower and Strategic and Critical Materials Subcommittee, Armed Services Committee on Intelligence Issues, U.S. House of Representatives, March 1, 1988, 60-61; and *DN*, March

The Strait of Hormuz presents less than ideal conditions for mine warfare. The currents in the strait are often too strong for moored mines (causing the mines to dip or anchor cables to break) and it is too deep for bottom-influence mines; moreover, Iran lacks mines designed for use in deep waters, such as rising mines.⁷⁵ As a result, Iranian mining efforts during the Iran-Iraq War were confined largely to the lower rim of the Persian Gulf, which is shallow enough for moored mines.⁷⁶ Iran is known, however, to be interested in obtaining rising mines (such as the Chinese EM52) which can be used in the strait itself.⁷⁷ The acquisition of rising mines would for the first time enable Iran to mine the Strait of Hormuz; this would close a major gap in its mine warfare capability.

Iran can use civilian or military surface ships, its Kilo class submarines, and mini-submarines to lay mines, although only its surface ships can lay mines in numbers sufficient to have a significant impact on shipping in and near the Gulf (due to the total number of surface vessels available and their large carrying capacity). By relying on surface ships, however, Iran would risk compromise, political embarrassment, and loss of these assets. Iran's two Kilos can covertly lay mines, but each can lay only twenty-four mines per sortie. This may not be enough to have a significant impact on shipping, although it could cause problems.

Iran's shore-based antiship missile forces are organized around large numbers of mobile HY-1 Silkworm, HY-2 Seersucker, and C-801 Sardine missile batteries. Most of these are located near the Strait of Hormuz and on Qeshm and Sirri islands; Iran has also prepared missile launch positions on Abu Musa Island.⁷⁸ The HY-1 is an old system that could threaten civilian shipping but can probably be defeated by most warships with modern EW capabilities.⁷⁹ Iran reportedly intends to upgrade their guidance systems, probably in order to improve their accuracy and effectiveness in an EW environment.⁸⁰ The HY-2 is a modernized version of

1-7, 1993, 29. Moored contact mines float just below the water's surface and detonate when they make contact with the hull of a passing ship. Bottom-influence mines sit on the sea bed and detonate when a ship passes over them. For this reason, they are effective only in shallow water. Limpet mines are attached to an enemy ship's hull by frogmen and are detonated by a time-delay fuse.

⁷⁵ W. Seth Carus, "Proliferation and Security in Southwest Asia," *Washington Quarterly* 17, no. 2 (spring 1994): 12.

⁷⁶ Cordesman and Wagner, 589 n. 57.

⁷⁷ Rising mines—like bottom mines—sit on the sea bed, and when a ship passes overhead, they release a self-propelled explosive charge that rises toward the surface and explodes under the ship's hull.

⁷⁸ Andres de Lionis, "The Coastal Missile Threat in the Middle East," *JIR*, January 1994, 25-28. Reports that Iran has acquired eight SS-N-22 Sunburn supersonic antiship missiles from Ukraine and deployed them as part of its coastal defenses appear to be false (only ship-launched versions of this missile are believed to have been produced). See *DW*, September 27, 1993, 1, 10; and *DW*, October 4, 1993, 1, 13.

⁷⁹ Michael A. Palmer, *On Course to Desert Storm: The United States Navy and the Persian Gulf* (Washington, DC: Naval Historical Center, 1992), 122.

⁸⁰ *DN*, January 17-23, 1994, 29.

the HY-1 and is probably more accurate and more effective in an EW environment. Little is known about the C-801, which reportedly is based on the French MM-38 Exocet antiship missile. It is a surface-skimmer—making it difficult to detect in flight—and may have a significant ECCM capability that could make it difficult to jam. All three are mobile systems, and thus could be difficult to destroy by preemptive action (the Gulf War highlighted the difficulty of locating and destroying Iraqi mobile coastal missile batteries).⁸¹ In a crisis or a war, U.S. naval vessels in the Persian Gulf might have little advance warning and time to respond to missiles launched from numerous pre-surveyed sites along Iran's coast.

Build-Up in the Gulf

In October 1994, Tehran commenced a major military build-up on three islands in the Gulf—Abu Musa and the Greater and Lesser Tunbs—that are also claimed by the UAE. The build-up began during the U.S.-Iraq crisis in October 1994 and continued for several months thereafter. At the height of the build-up in February-March 1995, about 4,000-5,000 regular army and navy and IRGC troops equipped with tanks, artillery, and surface-to-air missiles were deployed on these islands.⁸² Of greatest concern is Iran's construction of concrete missile launch ramps on Abu Musa, possibly foreshadowing the deployment of antiship missiles there.⁸³ Doing so would further extend Iran's reach across the entire Gulf. During the Iran-Iraq War, foreign tankers hugged the UAE coast to avoid Iranian minefields in the middle of the Gulf; in the future, tankers plying this coastal route could be vulnerable to antiship missiles on nearby Abu Musa. By May-June 1995, however, Iran had put some of the tanks and armored personnel carriers on these islands into storage and withdrawn about 10 percent of its troops—at least in part because it had difficulty sustaining such a large presence there; just providing fresh water for these forces was a challenge.⁸⁴

While the reasons for Iran's build-up on these islands are not clear, it may have been intended to:

- Deter the United States. Tehran apparently felt that the U.S. deployment in October 1994 was a prelude to an American attack on Iran, and its build-up may have been a defensive countermove.
- Rebuff the GCC, which insists that these islands belong to the UAE. The military build-up thus underscores Iran's determination to retain control of these islands.
- Undermine U.S. influence in the Gulf by increasing the risk to the United States of military intervention there, as the deployment of

⁸¹ Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey Summary Report* (Washington, DC: U.S. Government Printing Office, 1993), 101.

⁸² *NYT*, March 1, 1995, A11.

⁸³ *Iran Brief*, January 9, 1995, 10; *DN*, February 6-12, 1995, 1, 42; and *NYT*, March 23, 1995, A9.

⁸⁴ *WP*, November 18, 1995, A22.

antiship and surface-to-air missiles on these islands could make U.S. intervention more costly.

- Enhance its ability to retaliate for a U.S. or Israeli strike on Iran's nuclear or other facilities by disrupting the flow of oil from the region. The build-up thus underscores Tehran's retaliatory option if threatened.
- Better protect Iran's maritime littoral. Bandar Abbas is its most important port, and during the Iran-Iraq War, Iran moved its Kharg Island oil pumping operation, located at the western end of the Gulf, to Sirri and Larak islands near Abu Musa.⁸⁵

Iran's deployments on Abu Musa and the Tunbs, however, are not likely to greatly alter the military balance in the Gulf. In the event of a military confrontation with the United States, the forces on these islands would probably be destroyed within a few days, because the islands are largely flat and featureless and thus offer little cover and concealment. By comparison, Iran's mines, shore-based antiship missiles, and submarines pose a much greater threat to U.S. naval forces and maritime traffic in the Gulf.

Iranian Naval Strategy

Iran's naval build-up is intended to achieve three objectives: to undermine the position of the United States, Tehran's main competitor for influence in the Gulf; to increase its own influence in this area of vital concern; and to enable Iran to disrupt the flow of oil from the region should its vital interests be threatened. To achieve these objectives, Iran has tried to foster the belief that it could *block* the Strait of Hormuz, thereby stopping the flow of oil from the region, rendering U.S. military intervention more risky, and raising questions about the credibility of U.S. security guarantees to the Arab Gulf states.

Iran could certainly *disrupt* the flow of oil from the region by using mines, shore-based antiship missiles, and submarines to attack shipping in the Gulf. Although oil would continue to flow from the region, conflict there would cause panic in world economic markets and almost certainly bring about U.S. military intervention.

As for Iran's ability to *block* the Strait of Hormuz, this is easier said than done:

- Large tankers are very difficult to sink. During the Iran-Iraq War, only four tankers—out of more than 300 that were attacked—were sunk. Their large size and the strength and compartmentalization of their hulls reduces their vulnerability to attack.⁸⁶

⁸⁵ The importance of Bandar Abbas as a transit point for much of Iran's non-oil exports is growing; in the past year or two, Tehran has dramatically increased the port's handling capacity; see *Keyhan*, January 7, 1995, 1, in FBIS-NES, March 1, 1995, 66; and *Jomhuri-Ye Eslami*, January 25, 1995, 4, in FBIS-NES, March 1, 1995, 64-65.

⁸⁶ Ted Hooton, "The Tanker War in the Gulf: 1984-88," *JIR*, May 1992, 221; and Martin Navias, "Lessons from Iraq's Antishipping Campaign, 1980-88," *JIR*, November 1992, 509.

- Mines can be swept and sea lanes cleared. (These efforts, however, are rarely 100 percent effective; this applies *a fortiori* if Iran uses modern rising mines which are extremely difficult to locate and counter. Transiting the strait after clearing operations would therefore not be without risk.)
- The strait is sufficiently broad and deep to enable tankers to bypass the hulks of wrecked or sunken ships.⁸⁷ (However, alternate shipping routes would be closer to Iran—and thus more vulnerable to Iranian coastal missile batteries than is currently the case.)⁸⁸

Iran could, however, *temporarily close* the strait or stop the flow of oil from the region if it were to attack ships, port facilities, and oil platforms and pumping terminals in the Gulf with chemical or biological agents. (In fact, during recent naval exercises in the Persian Gulf, Iranian helicopters equipped with spray tanks simulated chemical or biological attacks against “enemy” ships.)⁸⁹ Civilian crews manning oil tankers and oil pumping facilities are not trained or equipped to operate in a chemical or biological environment. Consequently, attacks against soft targets such as these are likely to produce dramatic results, until the crews are issued protective gear and trained in their use, or the threat is neutralized by military means.

Closing the strait, however, would harm Iran at least as much as it would harm any of its adversaries because Tehran presently has no other way to bring its oil to market, and such a step would almost certainly prompt swift retaliation and massive intervention by the United States. It is thus an option of last resort for Tehran, to be used only if it were denied use of the strait itself or if other vital interests were threatened.

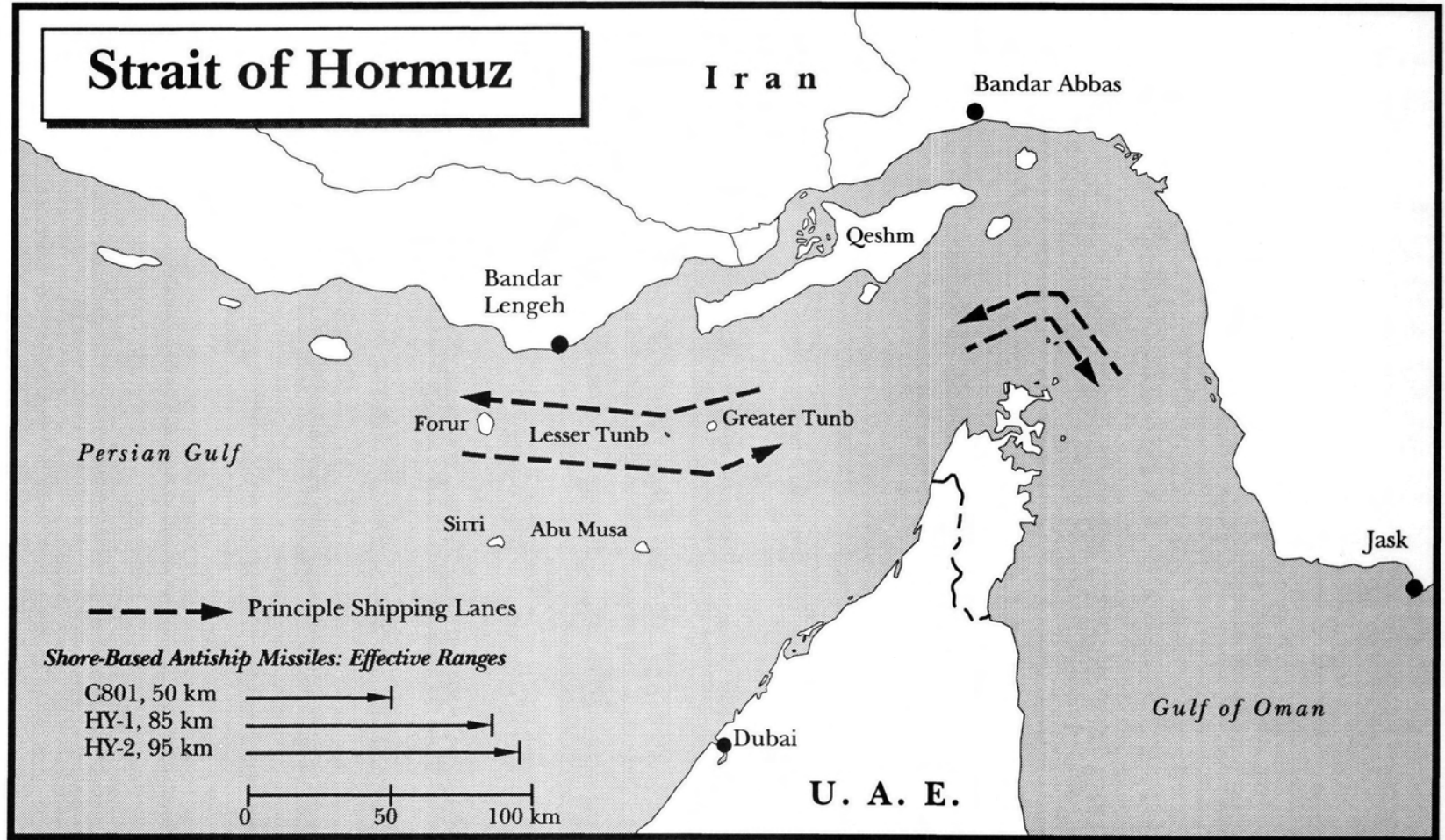
More likely, Iran might try to use subtle threats of subversion and terror to influence OPEC oil production and pricing decisions. Specifically, it could try to pressure OPEC to increase oil prices or raise Iran’s production quota to allow Tehran to generate more income and thereby obtain relief from its economic woes. Such a gambit, however, would probably not succeed. As long as the United States retains a significant military presence in the Gulf, the Arab Gulf states will not be vulnerable to Iranian coercion or intimidation.

⁸⁷ Marshall Lee Miller, “Will Iran or Iraq Close the Strait of Hormuz?” *AfJl*, December 1983, 24-26.

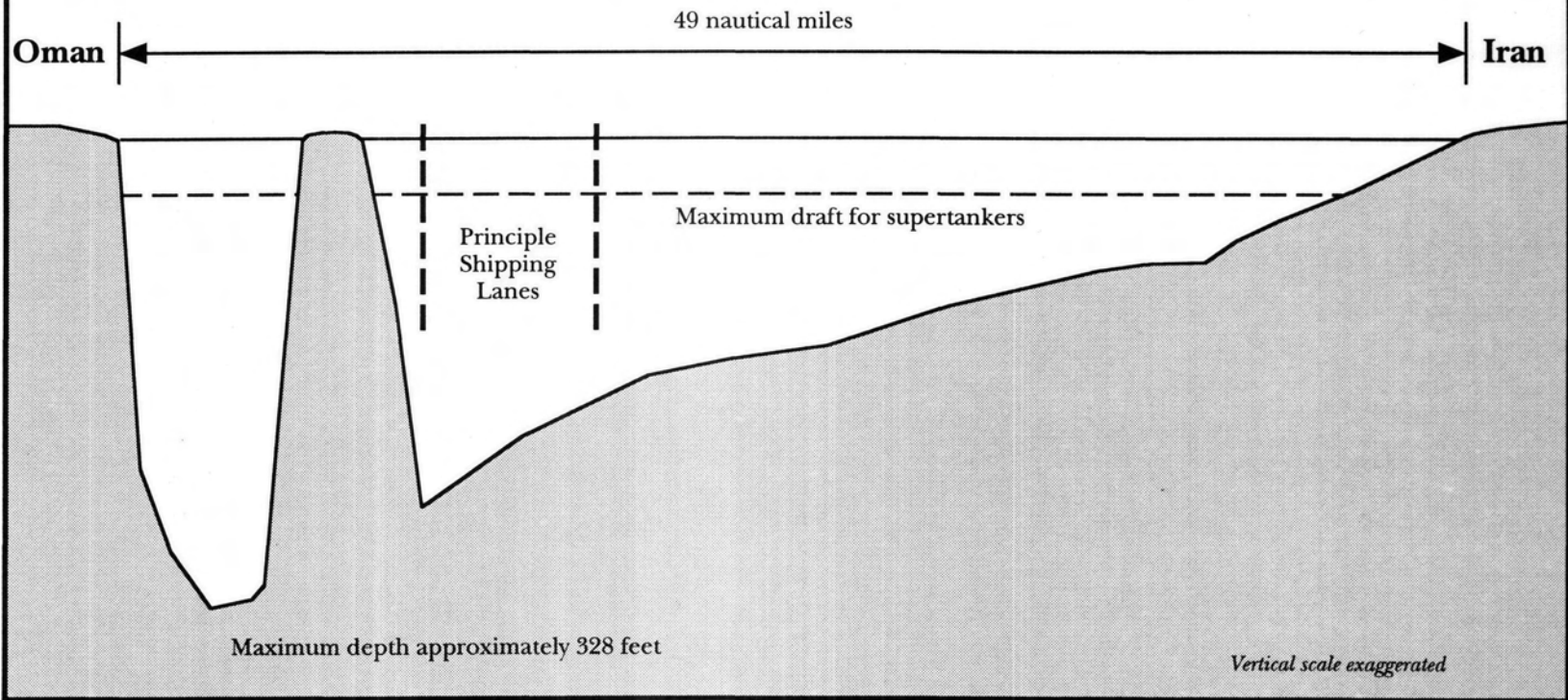
⁸⁸ In an emergency, an alternate overland shipping route exists from the port of al-Fujayrah on the Gulf of Oman, across the Musandam Peninsula (several hours drive), to the port of Dubai on the Persian Gulf. The use of this route, however, would require the augmentation of the existing port infrastructure in al-Fujayrah and the acquisition of a fleet of trucks to transport goods across the peninsula.

⁸⁹ “Centcom Cinc Hints at Iranian Helicopter Threat,” *Helicopter News* 21, no. 2, October 27, 1995, 4. Biological agents might be the weapon of choice in such a scenario. Because they take hours or days to take effect, they offer the advantage of deniability; by the time anyone realized that a biological attack had occurred (i.e., the appearance of symptoms in affected personnel), it might be impossible to identify the perpetrator.

Strait of Hormuz



Strait of Hormuz: Cross-Section



Even if Iran could obtain favorable production or pricing decisions, its success would be short-lived. OPEC accounts for only 40 percent of world oil production, and within a year or two the international oil market would adjust in a way that would undermine any benefits Iran had obtained.⁹⁰ Moreover, attempts to intimidate the Arab Gulf states might drive these countries deeper into the embrace of the United States—a development Iran would rue—and could even prompt the very foreign intervention Iran seeks to avoid. Nonetheless, Tehran's capacity for miscalculation—particularly in light of its current economic distress and growing signs of unrest in the Arab Gulf states—should not be underestimated.

CONVENTIONAL ARMS PRODUCTION

Prior to the 1979 revolution, Iran relied on foreign arms suppliers—mainly the United States and Britain—to meet its military requirements. After the revolution, Iran had significant problems obtaining arms due to an international arms embargo (Operation Staunch) imposed in late 1983. As a result of this experience, Iran has devoted significant resources to establishing an indigenous military-industrial base in order to reduce its dependence on foreign suppliers.

Iran's Ministry of Defense and Armed Forces Logistics (MODAFL) runs its military industries.⁹¹ It oversees over 240 factories employing 45,000 people engaged in the development or production of surface-to-surface and surface-to-air missiles, the Zolfaqar tank, Cobra and Buraq armored personnel carriers, rocket artillery, light helicopters, RPVs, mini-sub, small patrol boats, mortars, antitank missiles, ammunition, small arms, naval mines, tactical communications systems, and spare parts.⁹²

This impressive list, however, exaggerates Iranian military production capabilities. Although Iran manufactures a wide range of arms, production levels (except perhaps for ammunition and spare parts) are actually quite modest. Many of the weapons that Iran produces are crude, reverse-engineered copies of obsolete foreign systems; production is focused largely on low-tech infantry weapons; and quality control is questionable.⁹³

⁹⁰ There are several ways this could occur. Saudi Arabia (which does not produce at capacity) could increase production, or oil consumers could draw on strategic reserves. Either step would push down oil prices and thus reduce Iranian income.

⁹¹ Ahmed Hashim, "Iranian National Security, 1988-1994: Threat Perceptions and the Development of the Armed Forces," unpublished paper, 22-26.

⁹² *JDW*, February 1, 1992, 158-59; *JDW*, February 11, 1989, 219; and *JDW*, November 19, 1988, 1252-53. Iran recently announced that it had produced its first tank, the Zolfiqar, although photos suggest that it is probably a hybrid vehicle based in part on the U.S. M-48 and M60 and the Brazilian Osorio tanks; see *JDW*, January 7, 1995, 4. Iran hopes eventually to mass produce the Zolfiqar and Cobra, which thus far exist only as prototypes; see *Keyhan*, September 26, 1995, 7, in FBIS-NES, October 17, 1995, 94.

⁹³ *DN*, February 22-28, 1993, 1, 21.

As a result, Iran will remain dependent on foreign suppliers for all but a few categories of arms and spare parts for the foreseeable future. And despite attempts to diversify its sources to reduce dependence on any one supplier, it essentially relies on one country—Russia—for nearly all of its modern arms. This is a source of vulnerability on two counts: the disarray in Russia's economy makes the latter a potentially unreliable supplier, while the quality of some of the arms it produces (particularly tanks, armored vehicles, and military electronics) lags behind world standards.⁹⁴

ASSESSMENT

Iran's conventional capabilities are relatively modest. It would take tens of billions of dollars—which Iran simply does not have at this time—to make it a major conventional military power. Nonetheless, Iran is trying to build on its strengths while attempting to redress its most critical weaknesses through the selective modernization of its armed forces.

Iran's offensive options are limited. It does not pose a ground threat to any of its neighbors due to the small size and poor condition of its ground forces, although it can launch limited air strikes against neighboring countries (and has done so several times in Iraq in recent years). From the point of view of the United States and its allies in the Gulf, the main conventional threat from Iran is in the naval arena—specifically, the threat Iran poses to the flow of oil from the region, the security and stability of the southern Gulf states, and the ability of the United States to project power in the region.

Iran could *disrupt* maritime traffic in the Persian Gulf using mines, shore-based antiship missiles, and submarines, and it could *temporarily* close the Strait of Hormuz were it willing to use chemical or biological weapons against shipping. It cannot, however, *block* the strait; it is simply too wide and too deep to be obstructed. Moreover, although the Gulf itself presents a significant barrier to major acts of aggression against the southern Gulf states, Iran could conduct limited amphibious operations to seize and hold lightly defended islands or offshore oil platforms in the Gulf, or use its naval special forces to disrupt oil production and maritime traffic by sabotaging harbor facilities, oil platforms and terminals, and attacking ships in port throughout the lower Gulf.

It is unclear, however, what Iranian policy objective would be served by closing the strait; such a step would harm Iran as much as any other state because it has no other way to bring its oil to market. This is an option of last resort for Iran, to be used only if denied use of the strait or if other vital interests were threatened. In the near term, Iran is more likely to use the *implied* threat of disrupting shipping or closing the strait to intimidate

⁹⁴ For a critical evaluation of Russian tank and IFV designs based on recent combat in Chechnya, see *DN*, February 27-March 5, 1995, 1, 36.

its neighbors and deter its adversaries. Nonetheless, the United States must plan to deal with Iran's ability to disrupt the flow of oil from the Gulf, even if Iran seems unlikely to do so under current circumstances.

Iran's defensive capabilities are also limited, although its strategic depth, nonconventional retaliatory capability, and the military weakness of its neighbors offset—to some degree—its own weakness in this area. In the event of a military conflict with the United States, Iran's air and air defense forces could do little to oppose U.S. air power, which would roam Iran's skies at will, and its navy (which has been routed by the U.S. Navy in the past) would be rapidly defeated. It might, however, succeed in inflicting some losses on U.S. forces and disrupting shipping in the Gulf. Perhaps the most effective weapon in Iran's hands in such a scenario would be its ability to strike directly at the United States and its interests in the Gulf through terror and subversion.

III IRAN'S ROLE IN TERRORISM AND SUBVERSION

Terrorism and subversion have been key instruments of Tehran's foreign policy since the Islamic Revolution in 1979.¹ Since then, Iranian sponsored and inspired terror has claimed more than 1,000 lives worldwide. Terrorist tactics used by Iran over the past fifteen years include kidnappings, suicide and car bombings, aircraft hijackings, acts of sabotage and subversion in support of its efforts to export the Islamic revolution, and assassinations of expatriate opponents of the regime.

The scope and nature of Iranian terrorism have varied over time. Iran's involvement in terrorism was most intense in the decade following the 1979 revolution.² After peaking in the mid-1980s, the number of Iranian sponsored terrorist incidents declined due to changes in Iran's regional and international environment:

- With the end of the Iran-Iraq War in August 1988, Tehran ceased attacks on Western and Arab states that had supported Iraq during the fighting.
- The death of Ayatollah Khomeini in 1989 brought to power the more pragmatic leadership of 'Ali Khamene'i and 'Ali Akbar Rafsanjani, who were intent on mending ties with the West and rebuilding Iran's economy through massive foreign borrowing.³
- Iran sought to exploit Iraq's defeat in the 1991 Gulf War by improving its ties with the Arab Gulf states. Thus, it curtailed efforts to destabilize and subvert these states, redirecting its efforts further afield—to Turkey, Egypt, and North Africa.

As a result, Iran has taken a much more careful approach to terrorism in recent years. According to the U.S. State Department, the number of terrorist incidents in which Iran was directly involved has declined from forty-five in 1987 to thirty-two in 1988, twenty-four in 1989, ten in 1990, five in 1991, twenty in 1992, six in 1993, four in 1994, and seven in 1995.⁴

¹ The definition of terrorism contained in Title 22 of the United States Code, Section 2656f(d) is used here. It defines terrorism as premeditated, politically motivated violence perpetrated against noncombatant targets by subnational or clandestine agents, usually intended to influence an audience. This definition thus includes military personnel who are unarmed and/or not on duty at the time of an incident, as well as armed military personnel when a state of military hostilities does not exist at the location in question. See DoS, *Patterns of Global Terrorism: 1994* (Washington, DC: Department of State, 1995), v-vi.

² Bruce Hoffman, *Recent Trends and Future Prospects of Iranian Sponsored International Terrorism*, Research Report No. F-3783-USDP, RAND, Santa Monica, CA, March 1990, 16-17.

³ Thus, in 1991-92, Iran intervened with Hezbollah to free the last of the Western hostages held in Lebanon. At any rate, the Shi'i terrorists, whose December 1983 incarceration in Kuwait provided the initial impetus for the hostage-taking, escaped from jail when Iraq invaded Kuwait in August 1990.

⁴ DoS, *Patterns of Global Terrorism: 1987, 35-36; 1988, 44-45; 1989, 46-47; 1990, 33-34; 1991,*

Nonetheless, Iran continues its efforts to hunt down dissidents abroad, sabotage the Arab-Israeli peace process, and subvert pro-U.S. governments in Turkey, Egypt, and North Africa. Thus, in December 1995, Jordan expelled an Iranian diplomat from Amman for trying to incite Jordanians to murder Israeli tourists visiting that country.⁵ And in the first half of 1996:

- Iranian agents are believed to have been responsible for the murder of five oppositionists: an MKO activist and sympathizer in Turkey in February, and two Iranian-born Sunni Muslim clerics in Pakistan and an MKO activist in Iraq in March, nearly equaling in six months the toll of the entire previous year.
- Iranian agents were caught trying to smuggle a mortar and ammunition off of an Iranian ship docked in Antwerp, Belgium, in March. The ordnance is believed to have been intended for use in Iranian terrorist operations in Europe.⁶
- A Hezbollah terrorist—severely injured when he inadvertently blew himself up in an East Jerusalem hotel in April 1996—is believed to have been sent by Iran to blow himself up in Jerusalem or to plant a bomb on an El Al airliner.⁷
- Iran resupplied Hezbollah with 500-900 Katyusha rockets during Operation Grapes of Wrath in April,⁸ thereby violating an earlier pledge by President Rafsanjani that Tehran would not attempt to sabotage the Arab-Israeli peace process.⁹
- Bahrain arrested about fifty of its citizens in June, claiming that they had received military training in Iran and Lebanon and were involved in a plot to overthrow the government and install an Islamic republic there.¹⁰

In general, Tehran has become more careful about masking its involvement in terrorism and in selecting targets and venues for assassinations. In recent years, the locus of assassinations has shifted from the politically sensitive heart of Europe (France and Germany) to its periphery (Italy, Sweden, Denmark, and Romania), to the Middle East (Turkey and Iraq), and to South Asia (Pakistan). And as Iran has tried to minimize its direct involvement in terrorism, it has come to rely increasingly on surrogate groups such as Lebanon's Hezbollah, Hamas, and Palestinian Islamic Jihad (PIJ).

30-31; 1992, 22; 1993, 22-23; 1994, 20-21; and 1995, 24-25.

⁵ *Mideast Mirror*, December 11, 1995, 11.

⁶ *NYT*, May 1, 1996, A8.

⁷ *NYT*, May 17, 1996, A5; and *WT*, May 17, 1996, A14.

⁸ *WT*, May 14, 1996, A9.

⁹ For these comments, see George A. Nader, "Interview with President Ali Akbar Hashemi Rafsanjani," *Middle East Insight* 11, no. 5 (July-August 1995): 11.

¹⁰ *NYT*, June 6, 1996, A12.

IRANIAN AND IRANIAN-SPONSORED TERRORISM¹¹ 1979-96

Hostage Taking

- Fifty-two U.S. embassy personnel held hostage in Tehran from November 1979 to January 1981.
- More than thirty Westerners taken hostage in Lebanon from 1984-92 by Hezbollah and its offshoots. Iran had close ties to the kidnappers and used the hostages as bargaining chips in negotiations with various Western governments.

Assassinations

- More than sixty Iranian expatriate dissidents assassinated from 1979-96. Most had been members of the Shah's regime or the opposition MKO or KDP-I.
- The 1989 *fatwa* by Ayatollah Khomeini sentencing British author Salman Rushdie to death for blasphemy inspired at least one attempt to hunt Rushdie down, and spurred attacks on translators and publishers of Rushdie's controversial work, *The Satanic Verses*, in Italy, Japan, and Norway.

Subversion

- Attempts to export the revolution, including an aborted revolution in Bahrain in December 1981, an unsuccessful attempt on the life of the Emir of Kuwait in May 1985, and possible support for efforts to foment another revolution in Bahrain in June 1996.

Bombings

- Attacks on U.S. and Western interests in the Middle East, including the bombing of the U.S. embassy in Beirut in April 1983, the French and U.S. Marine barracks in Beirut in October 1983, the U.S. and French embassies in Kuwait in December 1983, and the U.S. embassy annex in East Beirut in September, 1984.
- Attacks on Western and Arab Gulf states that supported Iraq during the Iran-Iraq War, including a series of bombings in Paris in September 1986 and the bombing of Kuwaiti oil installations in June 1986 and January 1987.
- Attacks on Saudi interests, including the bombing of Saudia airline offices in Vienna (April 1986), Karachi (May 1986), and New Delhi (August 1986). In August 1986, 113 Iranian pilgrims to Mecca were arrested while trying to smuggle explosives into the kingdom.
- Attacks on Jewish and Israeli interests, including the March 1992 bombing of the Israeli embassy in Buenos Aires, and possibly the July 1994 bombing of the Argentine Israel Mutual Association, also in Buenos Aires.

Aircraft Hijackings

- Two U.S. Agency for International Development (AID) officials murdered when Kuwait Airways Flight 221 was hijacked to Tehran in December 1984; U.S. Navy diver Robert Stethem murdered when TWA Flight 847 was hijacked to Beirut in June 1985.

¹¹ Source: DoS *Bulletin*, January 1988, 50-53, and press reports.

Tehran's efforts to ensure deniability by relying on surrogates such as Hezbollah and the complex web of relationships and personal and institutional ties that bind Iran to these groups often make it difficult to discern Iran's hand or its precise role in particular terrorist acts. As a result, Iran often escapes retribution for acts of terror it instigates or from which it benefits. When U.S. hostages held in Lebanon were released by Hezbollah in 1991, for instance, the United States thanked the government of Iran—despite the fact that Tehran was the chief patron of the hostage-takers and had benefited from their actions.¹²

There are several reasons why Tehran uses terrorism as an instrument of policy (though it rejects the “terrorist” label for many of these activities and denies any involvement in them):

- Due to its military weakness, the regime favors ambiguity, indirection, and covert action over direct confrontation as means of dealing with its enemies.
- The rejection of foreign norms and standards of interstate behavior (except when they serve Tehran's interests)¹³ is a fundamental element of the regime's revolutionary legitimacy.
- The regime believes that Iran has suffered so greatly at the hands of its enemies that it is justified in using any means to strike back.

But perhaps most importantly, Tehran resorts to terrorism because it has often yielded important policy successes without provoking military retaliation against Iran.

Who Gives the Orders?

Some analysts question whether Iran's terrorism is authorized at the highest levels of the government—by Ayatollah Khamene'i or President Rafsanjani—and believe that such acts are in fact the work of rogue elements in the regime intent on pursuing their own radical agenda. Senior CIA officials, however, have stated unequivocally (presumably on the basis of hard intelligence) that these terrorist attacks are “not acts of rogue elements” but rather are “authorized at the highest levels of the Iranian regime.”¹⁴

For those inclined to doubt the CIA, a very strong case can nonetheless be made that terrorism is an official Iranian policy approved by the country's top leaders:

- Iranian terrorism has conformed to the policy objectives of the regime; as Iran's policy has changed, so has the scope and nature of its terrorism. This “fit” between official policy and terrorism seems too close to be coincidental.

¹² Statement of George Bush Regarding the Release of Terry Anderson, Federal News Service, December 4, 1991.

¹³ In its efforts to free Iranian assets frozen in the United States and elsewhere, for example, Tehran has argued its case on the basis of international law.

¹⁴ R. James Woolsey, director of central intelligence, address to The Washington Institute for Near East Policy, Washington, DC, September 23, 1994.

- Iran's involvement in terrorism has been relatively consistent under both Khomeini and the dual leadership of Khamene'i and Rafsanjani, indicating a degree of policy consensus over time.¹⁵
- Most terrorist acts have required a high degree of coordination among diverse government agencies and entities, which would not be possible without consensus within the government on these operations.¹⁶
- Several Iranians involved in terrorism have had close personal or family ties to key figures in the regime such as Khomeini and Rafsanjani.¹⁷

Moreover, Iranian leaders have, in moments of candor, openly endorsed the use of terror. In a 1989 Friday prayer sermon, for instance, then-Majlis speaker Rafsanjani advised the Palestinians to "kill and execute . . . five Americans or Britons or Frenchmen . . . for every Palestinian" killed during the *intifada*.¹⁸ In a 1992 television interview, hard-line Intelligence Minister 'Ali Fallahian described his ministry's efforts to deal with Iranian opposition groups such as the MKO and KDP-I by stating that "we are following them and keeping them under surveillance outside the country" and that "we were able to deal vital blows to their leadership last year."¹⁹ And in 1995, IRGC commander Mohsen Reza'i stated that in the event of a future confrontation between Iran and the United States, thousands of Americans would be kidnapped and held hostage by Iran and used as a bargaining chip in negotiations.²⁰

Finally, and perhaps more to the point, under international law the government of Iran is accountable for terrorist acts committed by its agents and members of its intelligence services or ministries, regardless of who authorized these actions.

The Key Players

Several organs of the Iranian state—the intelligence services, the IRGC, the Foreign Ministry, and the Islamic Culture and Guidance Ministry—play important roles in Tehran's sponsorship of terrorism and subversion.

¹⁵ Anonymous, "Iran's Islamic Fundamentalism and Terrorism: A View from the Pulpit," *Terrorism* 12 (1989): 401-16.

¹⁶ Thus, according to a French official interviewed in 1994, "the whole Iranian state apparatus is at the service of these operations." See *Time*, March 21, 1994, 52.

¹⁷ In fact, these individuals were probably selected for such politically sensitive missions because of their ties to these leaders. Anis Naccache, for instance, a Lebanese Sunni Muslim who led a pro-Iranian squad that attempted to kill former Iranian Prime Minister Shahpour Bakhtiar in June 1980, was a close friend of Ayatollah Khomeini's son Ahmed; Wahid Gorji, the Iranian agent who helped organize the September 1986 bombings in Paris, was the son of Khomeini's personal physician during his brief exile in France; and Massoud Hendi (Khomeini's grand-nephew) and Zeinolabedine Sarhadi (a grand-nephew of President Rafsanjani) played supporting roles in the August 1991 assassination of Bakhtiar in Paris (Hendi was subsequently convicted, Sarhadi was acquitted of charges of complicity). See *Le Monde*, July 4, 1987, A3; *Le Monde*, January 1, 1994, A3; *Time*, March 21, 1994, 52-53; AP, December 8, 1994; and Reuters, March 22, 1995.

¹⁸ IRNA, May 5, 1989, in FBIS-NES, May 5, 1989, 45.

¹⁹ IRIB Television, August 30, 1992, in FBIS-NES, September 1, 1992, 52-54.

²⁰ *Resalat*, September 24, 1995, 4, in FBIS-NES, October 5, 1995, 55.

Iran has three main intelligence organizations: the Ministry of Intelligence and Security, the IRGC's Directorate of Intelligence, and Military Intelligence. The Ministry of Intelligence and Security (Vezerat-e Ettela'at va Amminiyat-e Keshvar, or VEVAK), headed by former revolutionary court judge Hojjat ol-Islam 'Ali Fallahian, plays the lead role in organizing and executing terrorist operations abroad.²¹ In addition to its internal security function, the Intelligence Ministry runs operations out of Iranian embassies, consulates, and cultural centers overseas including the acquisition of sensitive technology, support for radical Islamic organizations, and covert operations against exiled opponents of the regime.²² VEVAK, for instance, was behind the August 1991 murder of exiled former premier Shahpour Bakhtiar in France; in fact, Fallahian personally recruited Bakhtiar's killers.²³

IRGC intelligence, headed by another *mullah*, 'Ali Sa'idi, has a key internal security role. It works both independently and in tandem with VEVAK to procure sensitive technology and organize and conduct terrorist operations overseas. IRGC intelligence personnel are based in Iranian embassies, overseas branches of Iranian-owned businesses, and charitable foundations.²⁴ Finally, Military Intelligence is responsible for monitoring armed forces personnel, procuring weapons and spare parts, and collecting and assessing information concerning the countries surrounding Iran. It is not believed to play a major role in the promotion of terrorism, however.²⁵

The Revolutionary Guard's Qods (Jerusalem) Force, headed by former head of IRGC intelligence Brigadier General Ahmed Vahidi, is a major IRGC command. Its primary function is exporting the revolution.²⁶ It is responsible for training foreign personnel in Iran and abroad to organize and participate in terrorism and subversion. The Qods Force runs a number of military training camps in Iran, Lebanon, and Sudan, for Islamic militants from around the Middle East.²⁷ It is organized into several directorates with different geographic areas of responsibility (including the Middle East, Central and South Asia, Europe, and North America) and functional specializations (such as assassinations and bombings).²⁸

²¹ Mohammad Mohaddessin, *Islamic Fundamentalism: The New Global Threat* (Washington, DC: Seven Locks Press, 1993), 102.

²² *Frankfurter Rundschau*, March 28, 1995, 6, in FBIS-NES, March 31, 1995, 53-57.

²³ *WP*, November 27, 1994, A30.

²⁴ *Frankfurter Rundschau*, 56.

²⁵ *Ibid.*, 53, 56.

²⁶ Although efforts to export the revolution need not necessarily entail the use of terrorism, Iran's efforts to do so have. For this reason, the apparatus to export the revolution is considered here.

²⁷ Members of Turkish Islamic Action arrested for assassinating prominent Turkish secularists and Iranian dissidents in the early 1990s received military training at one of these camps; see *Mideast Mirror*, February 4, 1993, 15-16.

²⁸ Mohaddessin, 102-11, 200-201.

The Ministry of Foreign Affairs under Foreign Minister 'Ali Akbar Velayati plays an important supporting role by providing logistical assistance to Iran's agents overseas through Iranian embassies and consulates. IRGC and intelligence ministry agents often travel and serve overseas under diplomatic cover,²⁹ and weapons and explosives are frequently transported to them by diplomatic pouch via regularly scheduled Iran Air flights. Iranian agents also sometimes benefit from the support and hospitality of local expatriate Iranian and Shi'i communities cultivated by diplomats.

Moreover, the International Directorate of the Ministry of Islamic Culture and Guidance is responsible for staffing the cultural affairs departments of embassies around the world and operating Iranian cultural centers in countries such as Germany, where there are large Iranian expatriate populations. Its agents work under diplomatic or other cover to identify and recruit local sympathizers often drawn from the ranks of local Muslim student, professional, or cultural organizations. In addition, embassy cultural affairs departments help establish Iranian student, professional, or cultural front organizations in order to conduct propaganda work and promote the interests of the regime.³⁰

Iranian *bonyads* (quasi-official charitable foundations) play an indirect role in the sponsorship of terrorism. These foundations were originally created to dispose of the assets seized from the Shah and his inner circle, and to aid the poor and disabled as well as families of those killed in the Iran-Iraq War. They have evolved, however, into multibillion dollar, profit-making conglomerates with diverse business interests in manufacturing, trade, real estate, and tourism.³¹ The foundations play a role in efforts to export the revolution by funneling money to Islamic groups and organizations overseas—some of which engage in terrorism.³² The most important of the *bonyads* are the Foundation of the Oppressed and Disabled (Bonyad-e Mostazafan va Janbazan) headed by former Revolutionary Guard chief Mohsen Rafiqdust, and the Martyr's Foundation (Bonyad-e Shahid) headed by Mohammad Hasan Rahimiyan. Another *bonyad*, the Fifteenth of Khordad Foundation (Bonyad-e Panzdeh-e Khordad) headed by Ayatollah Hassan Sane'i, placed a \$2 million bounty on the head of author Salman Rushdie, who was accused of blasphemy and sentenced to death in a 1989 *fatwa* by Ayatollah Khomeini.³³ Iran has consistently refused to withdraw the death sentence on Rushdie and has rebuffed appeals from the EU and others to do so. The Iranian

²⁹ Hosein Sheikh ol-Eslam, deputy foreign minister for Arab affairs and a leader of the "students" involved in the 1979-81 U.S. embassy hostage crisis, has reportedly played a pivotal role in placing IRGC personnel in Iranian embassies in Europe, Africa, and Asia; see Katzman, *Warriors of Islam*, 100.

³⁰ Mohaddessin, 101-2. See also *Frankfurter Rundschau*, 54-56.

³¹ *WSJ*, December 7, 1994, A10. See also *NYT*, January 8, 1995, A8.

³² *WP*, August 3, 1993, A1.

³³ *NYT*, November 3, 1992, A9.

government claims that while it cannot retract Khomeini's *fatwa* for religious reasons, it will not send murder squads after him.³⁴

Surrogates and Allies

Iran supports various radical Islamic and secular nationalist groups active in the Middle East and elsewhere. Some of these organizations, such as the Lebanese Hezbollah, work very closely with Iran and sometimes act as its surrogate. Other groups, while independent of Iran, receive political, military, or economic support because their goals parallel those of Tehran. These organizations can be divided into three general categories:

- radical Shi'i Muslim groups such as the Lebanese Hezbollah (by far the most important), Iraqi al-Da'wa, the Islamic Front for the Liberation of Bahrain, and other organizations active in the Arab Gulf states;³⁵
- radical Sunni Muslim groups such as Hamas and Palestinian Islamic Jihad, Turkish Islamic Action, Kurdish Hezbollah, Egypt's al-Gama'a al-Islamiyya, Tunisia's al-Nahda, and Algeria's Islamic Salvation Front;³⁶
- radical secular nationalist groups such as the Popular Front for the Liberation of Palestine-General Command and the Kurdish PKK.³⁷

Iran has scored its greatest successes among Shi'i groups, which naturally turn to it for inspiration and guidance.³⁸ During the first years of the revolution, Iran also made inroads among Sunni activist circles in the Arab world. Tehran's silence, however, during the February 1982 massacre of Muslim Brethren rebels and civilians by Syrian troops in Hama, discredited Iran among many Sunni Arab Islamists and led to the regime's estrangement from these groups throughout the 1980s.³⁹ Their common opposition, however, to the August 1990 Iraqi invasion of Kuwait and the revival of the Arab-Israeli peace process in October 1991 has enabled Tehran to reconcile with these groups.⁴⁰

Iran provides the Lebanese Hezbollah with a variety of political, military, and economic support—including as much as \$100 million

³⁴ *Independent*, May 31, 1995, 15; *Guardian*, June 6, 1995, 3; *Le Figaro*, June 9, 1995, 3, in FBIS-NES, June 9, 1995, 62; and *NYT*, June 25, 1995, A12.

³⁵ Ken Katzman, "Iran and the Export of the Islamic Revolution," unpublished paper, 1-2.

³⁶ *Ibid.*, 2-5.

³⁷ Tehran provides the PKK with arms, training, financial, and logistical support in its fight against Turkey, and about 2,000 PKK militants are based in eight or nine camps in Iran; see *Nokta*, April 5, 1992, 8-16, in FBIS-WEU, April 6, 1992, 40. Iranian helicopters reportedly resupplied PKK fighters in northern Iraq and evacuated the injured under cover of darkness during bloody clashes between the PKK and Iraqi Kurdish guerrillas in October 1992; see *Turkish Daily News*, November 24, 1992, 1, 11, in FBIS-WEU, December 8, 1992, 59-60.

³⁸ Olivier Roy, *The Failure of Political Islam* (Cambridge, MA: Harvard University Press, 1994), 183-93.

³⁹ Martin Kramer, "The Muslim Consensus Undone," in *MECS: 1981-82* (New York: Holmes & Meier Publishers, Inc., 1984), 292.

⁴⁰ Martin Kramer, "The Invasion of Islam," in *MECS: 1990* (Boulder, CO: Westview Press, 1992), 185; and Kramer, "Islam in the New World Order," in *MECS: 1991* (Boulder, CO: Westview Press, 1993), 195-96.

annually in arms and financial assistance.⁴¹ Scores of Revolutionary Guards based in Lebanon's Bekaa Valley provide military training and support to their Lebanese allies. Arms and other supplies for the Revolutionary Guards and Hezbollah arrive via Damascus by way of regular Iran Air flights. (Syria permits this because it believes that Hezbollah attacks on Israeli troops in southern Lebanon and on towns in northern Israel provide it with leverage in its negotiations with Israel.) Iran and Hezbollah cooperate very closely in security matters and terrorism, and their security organizations have conducted a number of joint operations, including assassinations and bombings. Consequently, it is often very difficult to differentiate between the actions of the two.

For example, the seizure of Western hostages in Lebanon from 1984-92 was initiated by Hezbollah security chief 'Imad Mughniyah in order to free members of al-Da'wa (including Mughniyah's brother-in-law) jailed in Kuwait for blowing up the U.S. and French embassies there in December 1983. Iran subsequently became a partner in this endeavor, however, and reaped a number of benefits from it, including swapping some of the hostages for U.S. and Israeli arms in 1985 and 1986.⁴²

Similarly, a series of deadly bombings in Paris in September 1986 that killed eleven and injured more than 160 was coordinated by Iranian intelligence agent Wahid Gorji, who was officially employed by the Iranian embassy in Paris as a translator. The actual bombings were carried out by a network consisting largely of Hezbollah operatives organized into two cells: one comprised of eight Lebanese Hezbollah members headed by Habib Haidar; the other comprised of ten mostly Tunisian- and Moroccan-born Frenchmen headed by Tunisian-born Fuad 'Ali Saleh, who had been recruited by Hezbollah in France. The bombings were an unsuccessful attempt to coerce France to cease its military support for Iraq during the Iran-Iraq War.⁴³

Likewise, the September 1992 assassination in Berlin of KDP-I chief Sadegh Sharafkandi was carried out on the orders of Intelligence Ministry Chief 'Ali Fallahian, organized by the Iranian embassy in Bonn, coordinated by an Iranian agent living in Germany, and carried out by four Hezbollah operatives. The agent, Kazem Darabi, reportedly provided the Hezbollah hit-men with arms, money, cars, and a safe house in Berlin.⁴⁴

⁴¹ R. James Woolsey, statement to the U.S. Senate Select Committee on Intelligence, January 10, 1995. See also *NYT*, December 18, 1995, A1.

⁴² Martin Kramer, "Invasion of Islam," 183. For more on the links between Hezbollah and al-Da'wa, see Kenneth Katzman, *Hizballah: A Radical Militia in Lebanon*, Congressional Research Service Report, no. 93-905F, October 7, 1993, 3.

⁴³ Gorji's involvement in these events sparked a major crisis in relations between the two countries, and he eventually returned to Iran without standing trial. Saleh and nine of his accomplices were eventually tried, found guilty, and sentenced to long jail terms. The eight Hezbollah members fled to Lebanon before they could be apprehended and were tried and sentenced *in absentia*. See *Liberation*, July 23, 1987, 2-3; *NYT*, July 29, 1987, A10; *NYT*, January 30, 1990, A2; and *Le Monde*, March 12, 1990, 8.

⁴⁴ *Time*, March 21, 1994, 54; *Focus*, January 18, 1993, 15-17 in FBIS-WEU, January 22, 1993,

This operation provides a good example of the role played by Iranian embassies and Iranian intelligence agents in organizing terrorism abroad, and demonstrates how Hezbollah often acts as a surrogate for Iran (it is hard to see how the assassination of Iranian Kurds advances Hezbollah's own agenda).

Hezbollah maintains a presence among expatriate Lebanese Shi'i communities in South America, Africa, and elsewhere, and is believed to have created a terrorist support infrastructure in some of these places to provide the organization with a worldwide reach.⁴⁵ Hezbollah's role in the March 1992 bombing of the Israeli embassy in Buenos Aires (in which Iranian involvement or at least foreknowledge is suspected)⁴⁶ underscores the magnitude of this threat. Given the close cooperation between Iran and Hezbollah, the latter's worldwide terrorist infrastructure must be regarded as a potential asset for Tehran and thus a potential threat to the United States; Hezbollah has killed more U.S. citizens than any other terrorist group in the world.⁴⁷

The ties between Iran and Hezbollah are in flux, however; Tehran's economic problems have reportedly forced it to cap financial aid to radical Islamic movements and to shift funds from those that have been co-opted to those still actively engaged in *jihād*, in order to maximize the impact of its aid.⁴⁸ Thus, at least until recently, Tehran appeared to be cutting aid to Hezbollah as the latter prepared to play a role as a mainstream political party in a reborn Lebanon (thereby reducing its utility as a radical Islamic movement) and in anticipation of an Israel-Syria peace agreement that could further reduce Hezbollah's freedom of action.⁴⁹ According to some reports, Tehran cut financial aid to Hezbollah from \$100-150 million annually a few years ago to about \$65 million annually and diverted much of the difference to the Palestinian Hamas and Islamic Jihad (although aid to Hezbollah reportedly rebounded following Israel's Operation Grapes of Wrath in Lebanon in April 1996).⁵⁰ These two organizations receive \$20 million to \$30 million annually in financial support⁵¹ and military training (including advice on bomb making) from Hezbollah and Iranian

15-17; and *Frankfurter Rundschau*, March 28, 1995, 6, in FBIS-NES, March 31, 1995, 55.

⁴⁵ *NYT*, March 18, 1993, A8. See also *WT*, August 2, 1994, A14.

⁴⁶ DoS, *Patterns of Global Terrorism: 1992*, 22.

⁴⁷ R. James Woolsey, statement to the U.S. Senate Select Committee on Intelligence.

⁴⁸ Martin Kramer, remarks at the Carnegie Endowment for International Peace, November 14, 1994.

⁴⁹ Ehud Ya'ari and Joseph Matar, "Where Have all the Iranians Gone?" *Jerusalem Report*, March 5, 1992, 30. See also Kramer, remarks at the Carnegie Endowment for International Peace.

⁵⁰ Kramer, remarks at the Carnegie Endowment for International Peace. See also *NYT*, December 18, 1995, A1.

⁵¹ Patrick Clawson, *Iran's Challenge to the West: How, When, and Why* (Washington, DC: The Washington Institute for Near East Policy, 1993), 16; and Yitzhak Rabin in *La Vanguardia*, March 7, 1993, 8-9, in FBIS-NES, March 12, 1993, 39. Iran also reportedly paid a cash bonus of \$120,000 to Hamas following a series of bloody suicide bombings in Israel in February and March 1996; see *LT*, April 16, 1996, 11.

instructors in Lebanon, Sudan, and Iran.⁵² No matter what direction future relations between Iran and Hezbollah take, Tehran will at the very least preserve its special relationship with Hezbollah's security apparatus—which has proved its value over the years and provides Iran with the means to strike at its enemies in various parts of the globe.

Finally, Sudan has emerged as an important regional partner in Iran's efforts to export the Islamic revolution. Following the June 1989 *coup d'état* that paved the way for the emergence of a radical Islamic regime in Khartoum, a confluence of interests and ideology led to a warming in relations between Iran and Sudan. Tehran subsequently emerged as an important supplier of military and security assistance to Khartoum; since 1991 it has provided military aid worth tens of millions of dollars, including small arms, ammunition, vehicles, and spare parts.⁵³ Sudan, in turn, allowed Iran to use its territory as a forward base for exporting the Islamic revolution to North Africa and elsewhere, and provided access to Port Sudan. Thus, according to U.S. officials, since 1994 Iran has transferred several dozen tons of small arms to Islamic militants in Algeria via Sudan.⁵⁴ About 100 Revolutionary Guards are based in Sudan to train Sudanese military and internal security personnel, assist the regime in its fight against rebellious tribesmen in the south, and train Islamic militants from Egypt, Tunisia, Algeria, and Palestinian groups, at about a dozen training camps.⁵⁵ Although cooperation between Tehran and Khartoum remains limited and has not met initial high expectations, Sudan provides Iran with an important entree into a region of strategic importance.

ASSESSMENT

Although the scope and nature of Iran's involvement in terrorism has changed over the years, Tehran continues its efforts to hunt down dissidents abroad, undermine the Arab-Israeli peace process, and export revolution to Turkey, Egypt, and North Africa.

In terms of advancing its national interests, Iran's involvement in terrorism has yielded mixed results. On the one hand, Iranian terrorist successes in the early 1980s—such as the storming of the U.S. embassy in Tehran, the bombing of U.S. and French embassies and barracks in Lebanon, and the seizure of Western hostages in Lebanon—humiliated the United States, France, and other foreign powers, burnished the

⁵² *LAT*, May 9, 1995, A1. Thus, in April 1996, Israeli authorities arrested an Islamic Jihad militant from Gaza who had received military training in Iran for terrorist attacks in Israel. See Reuters, April 7, 1996. See also Clyde Mark and Kenneth Katzman, *Hamas and Islamic Jihad: Recent Developments, Sources of Support, and Implications for U.S. Policy*, Congressional Research Service Report No. 94-993F, December 12, 1994, 7-10.

⁵³ *MEMB*: 1993-94, 284; and *NYT*, December 13, 1991, A7.

⁵⁴ *LAT*, May 9, 1995, A1.

⁵⁵ *NYT*, December 13, 1991, A7.

regime's popular image in the first years of the revolution, and helped it to consolidate its domestic power base.

Moreover, Hezbollah hostage-taking facilitated secret deals between Iran, the United States, France, and others that enabled Tehran to recover financial assets that had been frozen abroad and to trade hostages for desperately needed arms from the United States and Israel (although the arms transferred in various deals with the United States—2,000 TOW antitank missiles and spare parts for HAWK surface-to-air missiles—did not affect the ultimate outcome of the Iran-Iraq War). Similarly, France's expulsion of MKO chief Massud Rajavi in June 1986 (as part of a deal to release French hostages in Lebanon) was a heavy blow to the Iranian opposition. The MKO was forced to move its headquarters to Baghdad at a time when Iran was locked in a bitter struggle with Iraq, greatly undermining the MKO's credibility in the eyes of many Iranians. In the end, however, France did not meet the most important Iranian demand—to cease military assistance to Baghdad. This help was vital to Iraq's ultimate victory in its war with Iran.

Furthermore, terrorist attacks by Hamas and PIJ have complicated the implementation of the September 1993 Israel-PLO Declaration of Principles and helped bring about the electoral defeat of Israeli Prime Minister Shimon Peres in May 1996. Although Iran is not the primary moving force behind these organizations, to the degree that it provides them with political, military, and economic support—and is the inspiration for their emphasis on martyrdom and the use of suicide bombing as a tactic—Tehran can claim indirect credit for their successes.

Finally, Iran has succeeded in killing a number of key expatriate opponents of the regime. These acts have hurt the opposition and may have bolstered the self-confidence of the clerical regime, though most of the individuals killed by Tehran never were a serious threat to the rule of the *mullahs*. In the long run, the regime's corruption, inefficiency, repressive policies, and the growing popular disenchantment and widespread unrest they produce will pose a greater threat to clerical rule than the expatriate opposition.

On the other hand, Iran's involvement in terrorism has sullied Tehran's image and contributed to the country's isolation. It has strained its relations with key Western countries, including the United States, Britain, France, and Germany (although fear of Iranian retribution has deterred these countries from responding more forcefully to Iranian-sponsored terrorism). Iranian terrorism also contributed to the U.S. decision to adopt a pro-Iraq stance during the Iran-Iraq War, which led eventually to U.S. military intervention in the Gulf against Iran and indirectly contributed to Tehran's defeat.

Iran, moreover, has scored only modest successes in its efforts to export its Islamic revolution elsewhere in the Middle East:

- The Lebanese Hezbollah, Tehran's biggest success story, has thus far not achieved its principle objectives: Lebanon is no closer to becoming

an Islamic republic than when Hezbollah was founded, and Israel still occupies its self-declared “security zone” in South Lebanon. Moreover, Hezbollah faces an uncertain future; an Israel-Syria peace agreement could severely constrain its freedom of maneuver.

- Though members of the Islamist al-Da’wa party are key figures in the Iraqi opposition and have played an important role in several major terrorist attacks in Kuwait, most Iraqi Shi’a remain loyal to Baghdad; the Iraqi army that ultimately defeated Iran in a bloody eight-year war of attrition was comprised mainly of Shi’i conscripts. The overwhelming majority of Iraqi Shi’a seek a greater share of political power in their country, not an Islamic Republic of Iraq subservient to Tehran.
- Sudan is the only Islamic republic established in the Middle East since Iran’s 1979 revolution. However, Tehran played no role in bringing Lieutenant General ‘Umar Bashir or Hasan Turabi and his National Islamic Front to power (although Tehran would probably claim that Sudan is a case of export of the revolution by example). Moreover, cooperation between Tehran and Khartoum has not lived up to expectations.
- As for radical Islamic movements in Algeria, Egypt, Tunisia, Turkey, and among the Palestinians, their fates—like that of Lebanon’s Hezbollah—will be determined by factors largely beyond Tehran’s control.

Historical prejudices and suspicions divide Sunni Arabs from Shi’i Persians and have generally prevented Tehran from establishing close working relationships with Islamic movements in much of the Arab world (although Iran considers *any* Islamist gain anywhere—whether or not Tehran played a direct role in it—as a success for its efforts to export the revolution). Further, because of the military weakness, economic disarray, and corruption and inefficiency of the regime in Tehran, few Islamists in the Middle East or elsewhere consider the Islamic Republic of Iran a model worthy of emulation, even if the Iranian *Revolution* is a source of inspiration. Finally, Iran’s past attempts to subvert the Arab Gulf states have caused them to rely more heavily on the United States for their security, thereby undermining Iranian efforts to end the U.S. military presence in the Gulf.

Despite the fact that terrorism and subversion have yielded only limited gains in the foreign policy arena, Tehran’s clerical leadership is likely to continue efforts to export the revolution (for instance, through support for Hezbollah and Palestinian rejectionists) because it perceives these activities as a means of enhancing its flagging domestic popularity and burnishing now tarnished revolutionary credentials, and because these efforts have yielded some important successes.

It remains to be seen, however, whether Hamas and Palestinian Islamic Jihad will continue to play a major role on the Palestinian scene and ultimately succeed in obstructing Arab-Israeli peace or achieving other key

objectives. Success in this area could very well create new opportunities for extending Iranian influence in the Arab world, although traditional Sunni Arab/Shi'i Persian divisions are likely to limit the potential for cooperation with these Palestinian groups. And while Iran has curtailed its efforts to subvert its Arab Gulf neighbors (though Bahrain claims that Iran has played a key role in fomenting recent unrest in that country), growing instability in these states caused by dwindling oil revenues, demands for increased popular participation in government, and growing resentment among disenfranchised Shi'i communities in Bahrain and Saudi Arabia could tempt Iran to resume its subversive activities in the Gulf—if it has not already done so.

Iran's capacity for terrorism and subversion remains one of its few levers in the event of a confrontation with the United States. In such a confrontation, Iran might seek to take Americans hostage (as IRGC Commander Reza'i has threatened) or try to subvert Arab Gulf states that host U.S. military facilities in order to undercut U.S. power projection capabilities in the region. In addition, its ties with Hezbollah provide Tehran with the means to launch an international terrorist campaign that would be very hard for the United States to counter. Although neither Iran nor Hezbollah have targeted U.S. personnel or interests since 1991, Iran is keeping its options open: Iranian agents continue to surveil U.S. installations around the world,⁶⁶ and Iran could resume attacks on U.S. interests in the Middle East, Europe, and elsewhere. And while funding for Iran's intelligence services have been cut in recent years due to the country's financial woes,⁶⁷ their ability to carry out terrorist spectacles has probably not been hampered because these operations cost little relative to their potential payoff. Thus, if future domestic unrest in Iran were to dramatically increase to the point of threatening the survival of the regime, Tehran—perhaps perceiving a U.S. hand behind these developments—might launch a wave of terrorist attacks in “retaliation.” The challenge for U.S. policy, then, is to maintain pressure on Tehran without provoking it to lash out in anger or desperation by means of terrorism.

⁶⁶ DoS, *Patterns of Global Terrorism: 1993*, 22.

⁶⁷ Benedict FitzGerald, “Iran After the Revolution,” C&O Resources, Inc., Washington, DC, May 1995, 12.

IV IMPLICATIONS

Iran's security and financial problems present it with a dilemma. Only nuclear weapons can transform it into the preeminent military power in the Gulf and address the long-term threat Tehran perceives from Iraq and the United States; such weapons could cost billions of dollars to acquire. By comparison, rebuilding its conventional forces could cost *tens* of billions of dollars—a sum Iran simply does not have at this time.

Consequently, Iran is likely to devote most of its available funds to developing or acquiring nuclear weapons as well as augmenting its existing nonconventional capabilities. Meanwhile, it will continue to selectively modernize its conventional forces while maintaining its ability to engage in subversion and terrorism—one of Tehran's few remaining levers of influence in light of its political, military, and economic weakness.

THE NATURE OF THE IRANIAN THREAT

The threat that Iran poses to U.S. interests comes from the two extremes of the threat spectrum: nonconventional weapons on one hand and Tehran's capacity for subversion and terror on the other. These are two threats, however, that the United States will have difficulty countering. Iran's possession of nuclear and biological weapons (the latter is probably already a reality) could, at the very least, raise the potential risks and stakes of U.S. military intervention in the Gulf, and reduce the freedom of action of the United States and its allies there. And Iran has in the past demonstrated its ability to use terrorist surrogates to strike painful blows against U.S. interests, while obscuring its involvement in such acts in order to avoid retribution.

The United States also faces a secondary threat to its interests in the form of Iran's naval build-up in the Persian Gulf. Although the United States and its allies in the region are reasonably well prepared to deal with this threat, Iran could nonetheless disrupt the flow of oil from the Gulf and inflict losses on U.S. naval forces in the event of a confrontation. And if Tehran were willing to use chemical and biological weapons against U.S. forces, American casualties could be heavy.

The costs of a major confrontation with the United States, however, could be devastating for Iran, resulting in the destruction of much of its military and civilian infrastructure, leaving it without the ability to defend itself by conventional means. Moreover, hard experience over the past decade has shown Iran that it has neither the funds needed to replace significant combat losses nor a reliable supplier capable of doing so.

Further, a blatant provocation by Iran would strengthen the U.S. argument for international sanctions against Tehran. Having observed firsthand the affect of sanctions imposed on Iraq after its August 1990 invasion of Kuwait, the *mullahs* are unlikely to repeat the mistakes of Saddam Hussein.

Consequently, for the foreseeable future, Iran will try to avoid a major confrontation with the United States that could lead to losses it could neither absorb nor afford to replace and, to the imposition of stiff sanctions against it. Under current circumstances, however, a miscalculation by either side leading to a clash—along the lines of the accidental downing of an Iranian civilian airliner by the *U.S.S. Vincennes* in July 1988—cannot be ruled out.

IRAN: THE NEXT IRAQ?

In light of the foregoing analysis, the assessment that Iran is the next Iraq or an ascendant regional power seems somewhat overdrawn.¹ Although there are some superficial similarities between Iraq of the 1980s and Iran of the 1990s, there are important differences that make it unlikely that Tehran will follow in Baghdad's path—at least in the near term.

First, Iraq's financial situation was much more favorable during the 1980s. It was able to borrow over \$80 billion from its Western and Arab supporters in the course of its war with Iran, and started experiencing financial difficulties only after it had completed much of its military build-up (albeit before it developed nuclear weapons). Iran, by contrast, has experienced financial problems almost from the outset of its military build-up; a precipitous drop in oil income and its loss of access to foreign credit have forced it to drastically slash weapons procurement before its rearmament program really got off the ground.

Second, whereas Iraq had broad access to both Western and Eastern Bloc arms markets and technology for nearly a decade, Iran is an isolated pariah state with few options concerning where to acquire arms and technology, and two of its three main suppliers—China and North Korea—cannot offer Iran the latest in either area. Moreover, the international community has learned much from its experience with Iraq; national export control laws and international supplier regimes have become more restrictive since 1991 and Iran has become the focus of international nonproliferation efforts. This will make it harder for Tehran to replicate Baghdad's feat.

Third, it is not clear that Iran has the manpower base and organizational skills that underpinned Iraq's efforts to develop nonconventional weapons. Tehran faces daunting managerial, organizational, and technical constraints in this area, although it may eventually overcome some of these obstacles with foreign help.

¹ See, for example, the four quotes on p. *xxi*.

Finally, the long-term outlook for Iran is at best uncertain. It has a corrupt and inefficient regime; a weak and deteriorating economy; a small and ineffective military; and a large, rapidly growing, and increasingly dissatisfied population. Many of the socio-economic trend lines for Iran point downward.

Nonetheless, Iran—with its nuclear ambitions, aspirations for regional power status, support for radical Islamic groups, capacity for terrorism and subversion, and geographic position adjacent the world's oil supply lines—has the capacity to threaten key U.S. interests in the Middle East. It is therefore vital that the United States continue to focus on containing Iran to ensure that, at a minimum, it does not become any more of a threat than it already is.

IRAQ: COUNTERBALANCE TO IRAN?

This analysis also undercuts the argument that the United States will eventually have to ease sanctions on Baghdad or even rehabilitate Iraq to counterbalance an ascendant Iran. First, Iran's military build-up is much less rapid and extensive than widely believed. The quantitative balance of forces between Iran and Iraq currently favors the latter, and given the slow pace and narrowly focused scope of the Iranian build-up, it will be years before Iran is able to restore the balance.

Second, because the main threats from Iran are its nonconventional capabilities and capacity for subversion and terror (with a secondary conventional threat in the naval arena), Iraq is not at all well-suited to serve as a counterweight to Iran:

- In the nonconventional arena, this would require re-arming Iraq—perhaps with nonconventional weapons—thereby undoing what was accomplished by Operation Desert Storm and restoring Baghdad's ability to threaten regional stability.
- Iraq can contribute little if anything to efforts to counter Iranian terror and subversion, which must be addressed through deterrence (by the United States), greater international cooperation in the field of counterterrorism, and the promotion of political participation and economic development in the Middle East.
- Iraq is primarily a land power; in the aftermath of the Gulf War, it has virtually no navy to speak of and, due to geography, its access to the Gulf is easily threatened by Iran. Thus, Iraq is ill-suited to serve as a counterbalance to Iran in the naval arena.

Moreover, experience shows that Iraq would not be easily manipulated as a counter to Iran and would almost certainly use its strength to menace the Gulf states—against which it still harbors deep resentment for their participation in Operation Desert Storm. Only the United States can offset the Iranian military threat without actively promoting the revival of Iraqi military power.

On the contrary, the *removal* of Saddam Hussein and his regime is the best way to further constrain Iran's freedom to maneuver. The status quo in Iraq serves Tehran well; Baghdad is militarily contained (at least for now), it does not threaten Iran, and it cannot sell its oil freely. Were the regime in Baghdad to change, however, sanctions would probably be relaxed or lifted. Iran would once again have to worry about Iraq as a military threat, about the impact of Iraqi oil sales on its foreign currency earnings, and about the possibility of a *rapprochement* between Iraq and the Arab Gulf states that would further isolate it. Thus, the overthrow of Saddam Hussein and his regime would not only offer a way to deal with the threat that Iraq poses to regional security, but it would further facilitate the containment of Iran.

IRAN AND IRAQ: COOPERATION AGAINST "DUAL CONTAINMENT"?

The U.S. adoption of a policy of "dual containment" toward Iran and Iraq² has fed speculation that common interests and circumstances might prompt the two countries to work together to thwart U.S. aims—to include military cooperation against the United States.³ There certainly are grounds for such speculation. Just before the 1991 Gulf War, Iran and Iraq signed a series of agreements concerning cooperation during the impending conflict. As part of the agreement, Iran agreed to provide safe-haven to thirty-three Iraqi civilian passenger and transport aircraft that arrived on the eve of the war. Additional agreements concerned the provision of refuge for Iraqi ships in Iranian territorial waters, Iraqi access to Iranian satellite ground station and telecommunication services, the use of Iranian airspace, and the transshipment of oil through Iranian ports. There is no evidence, however, that any of these latter agreements were implemented.

During the war, Iraq dispatched more than 115 combat aircraft (including some of its best fighters) and eleven naval vessels to Iran; nearly all the aircraft and two ships survived the trip. These movements—which were apparently not covered by any of the pre-war agreements—came as a surprise to the Iranians. Iraq had apparently hoped that Iran would permit it to use these assets later in the war to bloody the United States; on this count it miscalculated. Both the aircraft and the naval vessels remain in Iran to this day.

Moreover, in recent years there have been credible reports that Iraq has been selling relatively small quantities (20,000-30,000 b/d) of refined

² For more on "dual containment," see Martin Indyk, "The Clinton Administration's Approach to the Middle East," in *Challenges to U.S. Interests in the Middle East: Obstacles and Opportunities*, Proceedings of The Washington Institute's Soref Symposium, Washington, DC, May 18, 1993. See also Anthony Lake, "Confronting Backlash States," *Foreign Affairs* 73, no. 2 (March-April 1994): 45-55.

³ *WP*, May 23, 1993, A26; and *WP*, July 1, 1993, A18.

oil to Iran for hard currency. (Iran's production capacity still exceeds its refining capacity—due to the effects of its war with Iraq—and it must import some refined products.) This trade enables Iran to meet its domestic energy needs while earning Iraq tens, if not hundreds, of millions of dollars a year. There have also been reports that Iran bartered foodstuffs and spare equipment parts to Iraq in return for oil, steel, and possibly cement and fertilizers.⁴

Most recently, the imposition of a trade ban on Iran by the United States in May 1995 spurred inconclusive Iranian efforts to mend fences with Iraq, including a visit by senior foreign ministry officials to Baghdad.

The potential for military cooperation between Iran and Iraq, however, is limited by the fact that the two remain bitter enemies. Historical animosities, deep scars from the Iran-Iraq War, the pursuit of incompatible regional objectives (both seek to be the preeminent power in the Gulf), and unresolved bilateral issues (the demarcation of borders, the continued detention of POWs, and support for the other's political opposition) guarantee that future relations between the two countries are more likely to be characterized by conflict and competition than cooperation. Neither country is likely to attack the other, however; the balance of weakness between the two makes a major military conflict unlikely, at least in the near term.⁵

In the event of a new confrontation between the United States and Iraq, Iran would probably remain out of the conflict and not assist Baghdad in order to avoid exposing itself to retribution by the United States. Were it inclined to quietly assist Iraq in some way, however, Iran could help Iraq to locate and identify U.S. aircraft and warships by providing such information through formal channels or, for instance, by reading out their location over open radio nets monitored by Iraq. Although such assistance could complicate U.S. military operations against Iraq, it would probably not have a significant impact on the outcome of any conflict.

Thus, while limited tactical cooperation between Iran and Iraq in the political, military, and economic spheres is possible, a strategic alliance against the United States is highly unlikely.

⁴ *WP*, March 28, 1993, A1; *WP*, May 23, 1993, A26; *WP*, July 1, 1993, A18; and *LT*, February 24, 1994, 12.

⁵ Michael Eisenstadt, *Like a Phoenix from the Ashes? The Future of Iraqi Military Power* (Washington, DC: The Washington Institute for Near East Policy, 1993), 64, 73.



V U.S. POLICY TOWARD IRAN

Current U.S. policy toward the Islamic Republic of Iran is the product of more than fifteen years of trial and error and successive efforts to find a viable approach for dealing with Tehran. Despite the passing of time and several attempts at dialogue with the regime, relations remain nearly as hostile as they were after the 1979 revolution.

Since the early days of the Islamic Republic, the U.S. government has viewed Iran as a threat to peace and stability in the Middle East because of the regime's anti-American stance, anti-status quo policies, and rejection of international norms and standards of behavior—most dramatically manifested by its involvement in terrorism.¹

U.S. government officials currently identify at least six areas in which Iran's policies are a source of concern, including Tehran's: (1) pursuit of nuclear and other nonconventional weapons; (2) efforts to expand and modernize its conventional military forces; (3) efforts to undermine the Arab-Israeli peace process; (4) sponsorship of terrorism and assassination around the globe; (5) attempts to subvert friendly governments throughout the Arab world; and (6) violation of the human rights of its own people.²

In responding to this challenge, the United States has employed both unilateral and multilateral measures to contain Tehran (in the sense of limiting its troublemaking potential) and induce it to change its policies. These have included economic pressure (in the form of partial trade bans and in May 1995 a total trade ban), a ban on arms transfers, restrictions on the transfer of dual-use and nuclear technology, a ban on loans and credits, and efforts to block all lending to Iran from international financial institutions such as the IMF and World Bank.³

The United States severed diplomatic relations with Iran in April 1980 in response to the seizure of the U.S. embassy and its staff in Tehran, and it has not restored them since. Consequently, another component of U.S. policy toward Iran has been a stated readiness to meet with members of the government of Iran or their authorized representatives in order to

¹ See, for instance, Anthony Lake, "Confronting Backlash States," *Foreign Affairs* 73, no. 2 (March-April 1994): 45-55.

² Martin Indyk, "The Clinton Administration's Approach to the Middle East," in *Challenges to U.S. Interests in the Middle East: Obstacles and Opportunities*, Proceedings of The Washington Institute's Soref Symposium, Washington, DC, May 18, 1993.

³ Ellen Laipson, director of Near East and South Asian Affairs at the U.S. National Security Council, presentation on U.S. policy toward Iran to the Middle East Policy Council, Washington, DC, May 25, 1995. For background, see Geoffrey Kemp, *Forever Enemies? American Policy and the Islamic Republic of Iran* (Washington, DC: Carnegie Endowment for International Peace, 1994).

establish an “authoritative dialogue” as a step toward resolving outstanding issues and eventually restoring diplomatic relations.⁴

U.S.-Iran relations are burdened, however, by a great deal of historical baggage that makes establishing a dialogue very difficult. For the United States, this includes the U.S. embassy hostage crisis (1979-81), Iran’s sponsorship of terrorism against U.S. personnel and interests (including Tehran’s role in the seizure—and murder—of U.S. hostages in Lebanon), its duplicitous dealings with the United States during the Iran-Contra affair, its mining of the Persian Gulf during the Iran-Iraq War, its efforts to overthrow Middle Eastern governments friendly to the United States, and its campaign to derail the Arab-Israeli peace process.

For Iran, this baggage includes the U.S. role in overthrowing the nationalist government of Mohammad Mossadeq in 1953 and in propping up the Shah, its freezing of billions of dollars in Iranian assets as a result of the Tehran embassy hostage crisis, its support for Iraq during the later stages of the Iran-Iraq War, and its ongoing efforts to isolate and contain Tehran.

More important than this historical legacy, however, is the fact that given current political realities in Tehran, neither Rafsanjani nor any other pragmatic Iranian politician is willing to take the politically suicidal step of talking with the United States (assuming they even want to do so), which would leave them open to attack by conservatives and radicals who remain vehemently opposed to any contact with the “Great Satan.” Moreover, the Iranian government has repeatedly placed preconditions on such a dialogue—namely, the unfreezing of up to \$17 billion in assets that it claims the U.S. government still holds.⁵ This raises suspicions that Tehran sees the offer to talk mainly as a ploy to squeeze more money out of the

⁴ Robert H. Pelletreau, assistant secretary for Near Eastern Affairs, testimony to the U.S. House Europe and the Middle East Subcommittee, March 1, 1994. See also Laipson. The emphasis on meeting *authoritative* representatives is a legacy of earlier U.S. experiences with Iran, namely the failure of U.S. efforts to free its embassy hostages (1979-81) and later to create a political opening to Iran in what became the Iran-Contra affair (1985-86). In the first case, this was due to a fruitless search for suitable interlocutors in Tehran; in the second case, it was due to Iran’s reliance on intermediaries, which enabled it to obtain urgently needed arms without taking the unpalatable step of directly engaging Washington. While the United States remains willing to engage in secret talks with Tehran (to shield potential Iranian interlocutors from the wrath of more radical rivals), it has stated that it cannot guarantee such talks will remain secret. See Hooshang Amirahmadi, *U.S.-Iran Relations: Areas of Tension and Mutual Interest* (Washington, DC: Middle East Institute, 1994), 24-25.

⁵ Reuters, April 19, 1995. As part of the 1981 Algiers Declaration of January 20, 1981—which set the terms for ending the 1979-81 embassy hostage crisis—the United States transferred a total of \$9.975 billion in compensation for frozen Iranian assets: \$3.89 billion directly to the Iranian government and \$6.085 billion to an escrow account at the Iran-U.S. Claims Tribunal in the Hague, to repay outstanding claims against both governments by U.S. and Iranian nationals. From Washington’s perspective, this agreement settled the issue of frozen assets, and it therefore rejects Iran’s claim that additional assets remain frozen in the United States.

United States.⁶ The U.S. government, having been “burned” in previous efforts to open a dialogue with Tehran, is reluctant to expose itself once again and is skeptical that anything useful can come from such contacts.

Finally, an often unstated element of U.S. policy toward Iran is deterrence. Since the 1991 Gulf War, the United States has maintained a large forward presence in the Persian Gulf consisting of more than twenty warships, 200 combat aircraft, and 20,000 troops ashore and afloat. Moreover, the United States has taken several additional steps to enhance its readiness, including prepositioning large quantities of equipment in the region (current plans call for the prepositioning of an army division), rotating U.S. forces through the region on an almost continuous basis for exercises in order to create a “virtual” permanent presence there, and concluding security cooperation agreements with all the members of the Gulf Cooperation Council.⁷ Although most of these steps were taken after the 1991 Gulf War in order to deal with the residual Iraqi threat, they also enhance America’s ability to deal with contingencies involving Iran, and thus are important for their deterrent value *vis-à-vis* Tehran.

ASSESSMENT

To date, U.S. policy toward Iran has produced mixed—albeit generally positive—results. On the one hand, the United States (and its G-7 partners) have not succeeded in changing or moderating Iranian policies through either political engagement or economic pressure. Moreover, the United States has had only mixed success building an international consensus concerning the nature of the Iranian threat. On the other hand, its efforts to stem Iran’s troublemaking potential by strategies of arms, technology, and finance denial have been notably successful. As a result, Iranian efforts to acquire nonconventional weapons and expand and modernize its armed forces have been delayed and curtailed.

⁶ Some observers claim that negotiations between Iran and the U.S.-owned Conoco oil company for a major off-shore oil exploration deal (which was quashed by the U.S. government in March 1995) were a signal by Iranian moderates that they wanted better relations with the United States. There is no evidence to support this *ex post facto* claim, however, and Rafsanjani has publicly denied this was the case; see *Mideast Mirror*, July 3, 1995, 16. Rather, Iran chose Conoco simply because it offered the best deal. Conoco was able to underbid its competitors because it was already involved in a similar off-shore project in nearby Dubai and thus had the required infrastructure in place. In any case, Tehran was already doing several billion dollars a year in business with American oil firms, which was fully consistent with Rafsanjani’s desire for an “economic and technical” (but not political) relationship with the United States. See *Mideast Mirror*, July 3, 1995, 16.

⁷ Terry Jones and Michael Eisenstadt, “Looming Challenges for U.S. Security Strategy in the Persian Gulf,” *PolicyWatch*, no. 168, The Washington Institute for Near East Policy, Washington, DC, October 19, 1995.

Failed Attempts to Alter Iranian Policy

Several times in the past fifteen years, the United States and others have tried unsuccessfully to engage Tehran politically in order to influence it to change its policies.

Following the 1979 Islamic revolution, the United States tried to engage “moderates” in the new regime in Tehran. These efforts included meetings between Secretary of State Cyrus Vance and Foreign Minister Ibrahim Yazdi at the UN in New York in October 1979, and between National Security Advisor Zbigniew Brzezinski and Yazdi, Premier Mehdi Barzagan, and Defense Minister Mustapha ‘Ali Chamran in Algiers in November of that year. These efforts foundered, however, when a few days after the second meeting, “radicals” intent on sabotaging the opening to America seized the U.S. embassy and American diplomats in Tehran.⁸ Shortly thereafter, the moderates departed from positions of authority.⁹

Likewise, the Iran-Contra “arms for hostages” deal (1985-86) was originally conceived as a political opening to moderates in Iran’s government. The United States hoped to play on perceived Iranian fears of a Soviet invasion to lay the basis for a political *rapprochement* between the two sides and prevent the Soviet Union from gaining a monopoly on influence in Tehran. The possibility of trading arms for hostages, however, soon came to dominate discussions between the two sides. The initiative foundered when the Iranian officials authorizing the contacts (which were carried out by various middlemen) refused to meet with U.S. government representatives or to intervene to free all of the hostages held in Lebanon. Iranian opponents of the initiative subsequently leaked details of the meetings to a Lebanese newspaper.¹⁰

More recently, Europe and Japan have been involved in an ongoing effort to engage Iran (which the Europeans call a “critical dialogue” and the Japanese call “constructive engagement”) in order to bolster the position of Iranian moderates in the regime’s centers of power and thereby influence Iranian policy in a positive way.¹¹ There is no evidence, however, that these efforts have paid off; among other things, Iran continues its efforts to disrupt the Arab-Israeli peace process and to dispatch death squads to hunt down dissidents abroad. And in June 1995 it refused an EU request to disassociate the government from the 1989 *fatwa* condemning author Salman Rushdie to death.

Such attempts to bolster moderates and weaken radicals as a means of influencing Iranian policy are doomed because they are based on a series of flawed premises:

⁸ In this section, the terms “moderate” and “radical” are used as a shorthand to describe “pragmatic,” and “conservative” and “radical” political factions, respectively.

⁹ Gary Sick, *All Fall Down: America’s Tragic Encounter with Iran* (New York: Random House, 1985), 186-90.

¹⁰ John Tower, *Tower Commission Report* (New York: Times Books, 1987).

¹¹ The EU decision to engage in a “critical dialogue” with Iran dates to the December 1992 Edinburgh European Summit.

- *Foreigners can decisively influence the internal balance of power between moderates and radicals.* In fact, since the death of Ayatollah Khomeini in 1989, these factions have been locked in an inconclusive struggle in which domestic issues have been much more important than foreign policy considerations.¹²
- *Moderates would pursue less threatening policies than radicals.* In fact, the former's focus on the Persian Gulf threatens U.S. interests as much as the latter's emphasis on exporting the revolution.¹³
- *The moderates can deliver on their commitments.* In fact, the factionalization of Iran's leadership means that commitments given by those engaging in dialogue can be subverted by rival factions.¹⁴
- *There are significant differences between moderates and radicals on issues such as nuclear weapons, the country's military build-up, terrorism, or efforts to subvert the Arab-Israeli peace process.* In fact, there seems to be consensus and broad support for these policies.

For these reasons, efforts by the United States, Europe, and Japan to change Iranian policy through political dialogue have failed. Nonetheless, the United States should keep open its offer to talk to representatives of the regime. If at some point the Iranian government is willing to enter into a dialogue without preconditions, there is no reason for the United States to decline such an offer even if talks are unlikely to produce positive results, given current political realities in Tehran. One potential benefit of such a meeting would be to demonstrate to the Europeans and the Japanese that Washington's tough line does not preclude it from talking with Tehran.

The United States has also tried to use economic pressure to change Iranian policy. These efforts, however, have also failed to yield significant results. U.S. pressure has thus far not succeeded in causing Tehran to abandon its efforts to acquire nonconventional weapons, expand and modernize its armed forces, undermine the Arab-Israeli peace process, subvert friendly governments in the Middle East, assassinate dissidents abroad, or repress domestic opposition. That is because Iran's leadership views these issues as core elements of its foreign, defense, and domestic policies. Furthermore, there is no reason to think that such measures are likely to succeed in changing Iranian policy in the future; historically, economic pressure has rarely succeeded in forcing countries to act contrary to their perceived national interest.¹⁵

¹² Patrick Clawson, "Can the Industrial Nations Agree About Iran? Implications for U.S. Policy," American Jewish Committee, Washington, DC, June 1995, 14-16.

¹³ Patrick Clawson, *Iran's Challenge to the West: How, When, and Why* (Washington, DC: The Washington Institute for Near East Policy, 1993), 5-47.

¹⁴ Two examples of this are the storming of the U.S. embassy in November 1979 in order to subvert the efforts of moderates trying to open a line of communication with Washington, and Ayatollah Khomeini's 1989 *fatwa* regarding Salman Rushdie, which undermined the efforts of pragmatic officials such as then-Majlis Speaker Rafsanjani to mend ties with Europe.

¹⁵ Gary Clyde Hufbauer, Jeffrey J. Schott, and Kimberly Ann Elliott, *Economic Sanctions*

Finally, Iran is unlikely to abandon its nonconventional (particularly its nuclear) weapons programs even if its security concerns could somehow be addressed. One of the main motives behind these programs is the regime's drive for power, prestige, and influence and its desire to close the gap between its perception of Iran as a major regional power (due to demographic, geographic, and economic factors) and the reality of the country's military weakness. For this reason, neither positive nor negative security assurances by the United States or others, nor regional security arrangements, are likely to weaken Iran's determination to continue with these programs.

Mixed Success in Building International Consensus on Iran

The United States has had mixed success in its efforts to build international consensus regarding the nature of the Iranian threat. The G-7 states agree with the United States that Iran's conventional and nonconventional military ambitions pose a threat, and they have imposed tight restrictions on the transfer of many types of dual-use technology to Iran while banning the transfer of arms and nuclear technology outright. The United States has also largely succeeded in pressing its G-7 allies and multilateral lending institutions such as the World Bank and the IMF not to extend new concessional loans or credits to Iran (although neither is enthusiastic about doing so anyway because of Iran's poor credit rating). However, except for the Rushdie case, most G-7 states prefer not to take action against Iran's support for terrorism, in part out of fear of provoking an Iranian backlash.

Moreover, the G-7 states—unwilling to forgo billions of dollars in business—have refused to join the United States in imposing a total trade ban on Iran, claiming that political dialogue rather than economic pressure is the way to achieve results. The United States has thus far had little success in convincing its G-7 allies otherwise. Perhaps the best that can be expected for now is that the G-7 states—which benefit from America's military commitment to peace and stability in the Gulf region—will not undercut U.S. policy toward Iran by picking up contracts dropped by U.S. firms as a result of U.S. sanctions; extending Iran concessionary financing or terms for loan rescheduling; or freeing Iranian intelligence agents involved in terrorism.¹⁶

At the same time, Russia, China, and North Korea continue to transfer dangerous arms and technology to Iran in an almost unconstrained fashion. All three sell Iran conventional weaponry; Russia and China sell Iran civilian nuclear technology with potential military applications; China and North Korea sell missiles and missile production technology to Iran; and China is selling Iran chemical weapons precursors and production

Reconsidered: History and Current Policy (Washington, DC: Institute for International Economics, 1990), 92-95.

¹⁶ Patrick Clawson, *Business As Usual? Western Policy Options toward Iran* (Washington, DC: American Jewish Committee, 1995), 67.

technology. And although Russia promised (first in September 1994 and most recently in June 1995) that it would not conclude any new arms deals with Iran, outstanding commitments under existing contracts are believed to amount to billions of dollars. Thus, it could be years before Russia is constrained by this promise.

U.S. efforts to influence Russia, China, and North Korea to curb or cease the transfer of nuclear technology and conventional weapons to Iran are likely to have only a marginal impact. Iran is only one of several issues that complicate bilateral relations between the United States and Russia and China. Washington must balance its desire for progress toward nuclear arms control with Russia and preserving billions of dollars in trade with China against its desire to influence Moscow and Beijing to cease sensitive arms and technology transfers to Tehran. Both Russia and China, moreover, look to Iran as a source of valuable hard currency and perhaps a potential ally in a number of foreign policy areas.

In particular, Russia sees Iran as a potential ally and partner in preserving the status quo regarding territorial waters in the Caspian Sea (which Kazakhstan, Turkmenistan, and Azerbaijan are eager to change), resolving the civil war in Tajikistan, and thwarting Turkish advances in Central Asia and the Caucasus.¹⁷ Furthermore, Russia's powerful Ministry of Atomic Energy (MINATOM)—which employs over one million people—is a vigorous booster of nuclear exports to Iran.

On the other hand, the depth of the Russo-Iranian relationship is limited by Russian concerns about Iran's troublemaking potential in the newly independent Muslim republics in Central Asia, age-old Iranian fears of Russia's expansionist intentions, and Tehran's inability to pay for arms and technology. There are thus objective limits on how far this relationship can progress under current circumstances. Against this backdrop, it appears that those who believe that Russia and Iran have concluded a "strategic alliance," or that U.S. policy will push Tehran into Moscow's embrace, exaggerate the potential for cooperation between the two countries.

China likewise sees Iran as a market for arms and other products, an ally against the United States (which both see as a potential adversary), and an ally in Central Asia, which abuts western China. Beijing may also be interested in a political alliance with Tehran as a means of achieving long-term energy security for its rapidly growing economy.

For North Korea, Iran is an important source of oil and hard currency and one of its few remaining trade partners. Iranian financial assistance has enabled it to move forward on several critical strategic programs—including the SCUD-C and Nodong-1 missiles—that it considers vital to its national security.

¹⁷ Andrei Volpin, *Russian Arms Sales Policy toward the Middle East*, Policy Focus, no. 23 (Washington, DC: The Washington Institute for Near East Policy, 1993), 19-20.

Regardless of the strategic rationales underpinning these relationships, the crucial element in each case is financial. For this reason, neither Russia, China, nor North Korea is likely to downgrade its ties with Iran or cease sensitive arms and technology transfers as long as Tehran is able to pay for them.¹⁸ Thus, U.S. sanctions act as a brake on Iran's ties with these countries by denying it the hard currency which is the bottom-line and life-blood of each of these important bilateral relationships. Moreover, the fact that the Russian and Chinese policies of transferring nuclear technology to Iran runs counter to an international consensus provides a policy opportunity for the United States. It should therefore mobilize its G-7 partners and the Arab Gulf states to use their collective economic weight to influence Russia and China to cease nuclear cooperation with Iran in order to avert an outcome that these states presumably want to avoid.

If, however, Russia and China insist on continuing nuclear technology transfers to Iran, they should at the very least be compelled to withhold enrichment and reprocessing technologies (which are critical components of a potential nuclear weapons program), limit contacts with Iranian personnel (to reduce the possible unauthorized transfer of know-how and materials), and provide instruction only for equipment already provided or contracted for.¹⁹ At the same time, the United States should push the IAEA Board of Governors to ensure that Iran is one of the first countries to implement the IAEA's "Program 93+2," a set of proposed nuclear safeguard enhancements that should increase the likelihood of early detection of proscribed activities or actions. (The program includes proposals to permit greater transparency of declared nuclear activities, broader access to nuclear and other facilities, and the introduction of environmental monitoring to permit early detection of proscribed or clandestine activities.)²⁰

The United States should also continue its efforts to deny Iran conventional weapons from Russia and China, with special emphasis on "leveraging technologies" such as advanced antiship missiles, mines, and torpedoes from Russia and China. These items are not necessarily big revenue earners for Russia or China but could have a major impact on the military balance in the Persian Gulf and thereby adversely affect U.S. interests there. Recent experience, however, such as the Chinese transfer of C-802 missiles to Iran, indicates that the prospects for success here are probably not very good.

As for the Arab Gulf states, few wholeheartedly support the U.S. approach to Iran. Most of the smaller Gulf states see no point in

¹⁸ Stephen Grummon, "Russian Policy toward Iran: Preparing for Halifax and Beyond," *PolicyWatch*, no. 152, The Washington Institute for Near East Policy, Washington, DC, June 6, 1995.

¹⁹ Gary Sick, "A Sensible Policy toward Iran," *Middle East Insight* 11, no. 5 (July-August 1995): 21-22.

²⁰ For more details, see Bruno Pellaud and Richard Hooper, "IAEA Safeguards in the 1990s: Building from Experience," *IAEA Bulletin*, January 1995, 14-20.

antagonizing their large neighbor to the north, which they see as a potential counterbalance to Iraqi power and Saudi influence. In addition, Kuwait, Bahrain, and the UAE have significant Shi'i populations (in many cases of Iranian origin) and fear Iran's potential for meddling in their internal affairs. Moreover, the UAE (namely Dubai) carries on a thriving trade with Iran that is important to its economy. Thus, for political, economic, and security reasons, nearly all of these countries are pursuing a policy of accommodation and/or engagement with Iran.

U.S. policymakers recognize the imperatives of power and geography that drive these accommodationist policies and have responded with tact and understanding to the independent approach taken by the Gulf states, which have also been very supportive of the U.S. military presence in the region. With regard to the UAE, the United States has to balance its desire for Dubai to curtail its trade with Iran against Washington's concerns that the economic dislocations this could cause would undermine the stability of the Emirates. In light of these concerns, the United States should limit itself to ensuring that the UAE does not serve as a conduit for the transfer of sensitive technologies to Iran. It is not clear that verification mechanisms currently exist to prevent this.

Successful Efforts to Curb Iran's Troublemaking Potential

The most important achievement of U.S. policy toward Iran is its success in curbing Iran's troublemaking potential through strategies of arms, technology, and finance denial, and deterrence.

U.S. pressure, *demarches*, and interdiction operations have thwarted several major conventional arms deals and countless smaller ones; cut Iran off from Western arms and technology suppliers—forcing it to rely on less advanced sources such as China and North Korea; and hindered procurement of spare parts for its armed forces, thereby making it more difficult for Tehran to maintain its existing force structure. Moreover, Iran's economic woes—which have been exacerbated by U.S. economic sanctions—have forced it to cut military procurement by more than half since 1989 and delayed its efforts to acquire conventional and nonconventional weapons. This has made Tehran very careful to avoid a confrontation with the United States that could lead to losses that it could neither absorb nor afford to replace.

As a policy tool, sanctions—like wars—are often better judged by what they prevent than by what they accomplish. And to the degree that U.S. policy toward Iran has prevented Tehran from becoming more of a threat than it now is, it must be judged an overall success. Thus, although sanctions have not forced Tehran to change its policies, they have succeeded in denying it the means *to carry out* some of those policies. And because Russia, China, and North Korea are still selling Iran arms and technologies needed to produce nonconventional weapons (despite U.S. efforts to block these sales), *economic* measures targeting Tehran's ability to raise the hard currency required for these purchases remain a key part of

efforts to contain Iran *militarily*. Thus, sanctions may be the only way to thwart pending Russian and Chinese reactor deals and large, potentially destabilizing arms transfers to Iran.

Continuing to deny Tehran loans, credit, and hard currency at a time of growing economic distress will probably force Iran to spend more on butter than guns in the coming years, in order to alleviate the circumstances of the Iranian people and thereby forestall perhaps greater domestic unrest. The U.S. decision in May 1995 to impose a total trade ban on Iran was thus a step toward further tightening the financial screws on the regime and curbing its destabilizing potential. Despite Washington's inability to convince its G-7 partners to adopt similar measures, the trade ban has exacerbated Iran's already severe economic situation. More specifically, the ban caused:

- A temporary plunge in the value of the rial, resulting in the flight of Iranian capital overseas, the imposition of strict currency controls by the government, and a reduction in non-oil exports (such as rugs) that merchants are unwilling to sell at a loss. This is likely to slow economic growth in the short term and could spur a recession in the long term.²¹
- A modest, temporary drop in income from crude oil sales. Iran initially had to sell its oil at a discount of ten to twenty cents per barrel, and it was unable to find buyers for all 400,000 b/d of the oil U.S. firms purchased before the ban, leading it to store what it was unable to sell. This resulted in decreased revenues and increased transportation and storage costs. In the short term, this will exacerbate Iran's hard currency shortfall.²²
- A reduction in the government's hard currency reserves, which has harmed its credit rating—further restricting its access to foreign capital. This is likely to weaken its ability to meet its debt repayment obligations.²³

These measures are expected to reduce Iran's annual oil income by \$100-300 million and its non-oil exports by \$1-2 billion this year²⁴ (although unexpectedly high oil prices in the first quarter of 1996—due to a long, cold winter—gave Iran a temporary respite).

Finally, the U.S. military presence in the Persian Gulf has deterred Iran from pursuing a more aggressive regional policy. During the Iran-Iraq War, U.S. military intervention in the Gulf deterred Iran from intensifying and widening the war and contributed to its decision to agree to a ceasefire in August 1988. The U.S. intervention—dubbed "Operation

²¹ In the weeks following the imposition of comprehensive sanctions, the value of the rial fell by one-third, though it has since recovered to roughly pre-sanctions levels; see Peter Tarnoff and John Gannon, statements to the Senate Banking Committee, October 11, 1995.

²² Ibid.

²³ Ibid.

²⁴ Patrick Clawson, "The Impact of U.S. Sanctions on Iran" (statement to the House International Relations Committee, November 9, 1995). See also *Iran Times*, March 15, 1996; and *Iran Times*, April 12, 1996.

Earnest Will”—began in July 1987 with the escorting of U.S.-flagged Kuwaiti oil tankers and escalated to skirmishes with Iranian forces in October 1987 and April 1988 and the accidental downing of an Iranian civilian airliner by the *U.S.S. Vincennes* in July 1988. These events—particularly the downing of the airliner (which most Iranians believe was a premeditated act)—had a profound impact on Tehran’s perceptions of and behavior toward Washington. Whereas the United States confronted Iran directly in the Gulf, Washington has yet to retaliate for Iranian-sponsored or -inspired terrorism directed against it. Thus, Iran learned that although it is dangerous to challenge the United States directly, it can do so successfully by indirect means. In light of this, it is clear that the U.S. military presence in the Gulf is a key element in its effort to contain Iran and must remain a cornerstone of U.S. policy in the region.

The United States, however, will continue to face a number of difficult challenges in dealing with the Iranian threat in the future.

First, the United States is entering an era of growing uncertainty concerning the evolution of the chemical, biological, and nuclear weapons threat in countries such as Iran. Camouflage, concealment, and deception efforts will make it increasingly difficult to assess the scope and maturity of Iran’s nonconventional weapons programs, identify potential production and support sites, and estimate the possible timeframes and outcomes of these programs. Because it will become increasingly difficult to obtain accurate and timely intelligence concerning Iran’s nonconventional programs, prevention or preemption may not be viable options in the future and the U.S. may have to rely more on deterrence in dealing with these capabilities. Nonetheless, the United States should reserve the option to conduct preventive military strikes against Iranian nonconventional weapons-related facilities, if and when sufficiently accurate intelligence becomes available.

Second, beyond deterrence, neither the United States nor its allies has the means to counter Iran’s biological (and potentially its nuclear) arsenal. Washington will have to become aware of the nature of Tehran’s “red lines” which could—if crossed—prompt the use of nonconventional weapons. It will also have to become more sensitive to how Tehran perceives the U.S. deterrent capability during peacetime, crises, and war. For this reason, the United States should reconsider its declaratory policy regarding nuclear retaliation for the use of biological weapons. At present, U.S. policy on this point is unclear.²⁵ The destructive potential of biological weapons, which are a current—not a future—threat requires the United States to clarify its stance on this issue so that potential adversaries do not miscalculate U.S. reactions. The United States should therefore make clear that it reserves the right to use nuclear weapons to retaliate for the use of biological weapons against U.S. personnel and interests.²⁶

²⁵ *DN*, August 28-September 3, 1995, 1, 18. See also *DN*, September 11-17, 1995, 1, 50.

²⁶ Recent statements by Secretary of Defense William Perry that the United States would

Third, the United States needs to consider alternative means of maintaining a forward presence in the Gulf in order to deter Iran. Should Iraq someday cease to be viewed as a threat by most of the states in the Gulf, it might be difficult for the United States to maintain support for a large forward presence in the region. In such a situation, the United States may need to adjust its approach to providing security and deterring potential Iranian aggression in the Gulf to include a greater naval presence than is currently the case.

Finally, though sanctions are an effective means of curtailing Iran's military ambitions, they are unlikely to hinder its ability to engage in terrorism and subversion, which requires only a small number of trained people and limited funds. America's allies, however, can make it more difficult for Iran to engage in these activities by:

- pressing Tehran to cease its support for terrorism by joining the U.S. ban on trade with Iran. Though this would not affect Iran's ability to fund terrorist operations, it would raise the political and economic costs for doing so.
- limiting the size and character of the official Iranian presence in their countries and restricting the movements of Iranian diplomats. This could make it more difficult for intelligence personnel to use diplomatic cover to engage in terrorism or provide logistical support to groups that do.
- pressing Damascus to stop allowing Iran to transship arms to Lebanon through Syria and using its embassy in Damascus as a venue for meetings with militant Palestinian groups trying to scuttle the Arab-Israeli peace process.

These steps are crucial because Washington's weak record on retaliation for Iranian or Iranian-inspired acts of terror (such as the October 1983 Marine barracks bombing in Beirut or the December 1983 U.S. embassy bombing in Kuwait) and IRGC chief Reza'i's recent threat to take Americans hostage in a crisis make it likely that Iran would resort to such methods in the event of a future confrontation with the United States. Accordingly, Washington should quietly inform Tehran that, in the future, it will respond with massive and disproportionate force if Iran ever again uses terrorism against American personnel or interests.

TOWARD THE FUTURE

Iran is at a crossroads: The clerical regime is widely seen as corrupt and is reviled by many Iranians; the economy is a shambles, with no near-term prospect for improvement; and there is growing unrest in the country.²⁷ As

consider "the whole range" of responses in the event of a chemical attack is a positive first step toward readjusting U.S. declaratory policy on this issue; see William Perry, testimony to the Senate Committee on Foreign Relations, March 28, 1996.

²⁷ Ahmed Hashim, *The Crisis of the Iranian State: Domestic, Foreign and Security Policies in Post-*

a result, many Iranians—clerics, military officers, and common people—have called for the *mullahs* to withdraw from politics and return to their mosques and seminaries in the hope that this would result in greater political openness and help revitalize the economy.²⁸ Due to the country's growing debt service burden, economic conditions are likely to deteriorate in the coming years, resulting in even greater economic hardship. This could strengthen the hand of Iranians who seek political change.

There are three competing schools of thought concerning the prospects for political change in Iran and the likely direction of future developments there:

- *Continuation of the status quo.* The regime will remain in power while the majority of Iranians—suffering from “revolution fatigue” and unlikely to revolt a second time—struggle to eke out an existence, preserve their personal space against the encroachments of the state, and maintain their dignity under difficult circumstances.²⁹
- *Evolutionary change.* The nature of the regime is evolving in the direction of reduced clerical involvement in running the country, greater pluralism, and greater openness to secular concepts and political ideas.³⁰
- *Revolutionary change.* A change of regime is possible if not imminent. Economic conditions are so bad, the government so unpopular, and the people so fed up that the regime would rapidly collapse if a charismatic leader were to emerge to challenge it.³¹

Although another revolution may be unlikely—people are weary of revolution, there is no viable, organized opposition to raise the standard of revolt, and the clerics still command a fanatically devoted following in parts of the armed forces and among the urban and rural poor—some kind of political change may be possible if Iran continues to face severe economic pressures. The United States therefore needs to recognize the potential for evolutionary political change in Tehran and to consider how it might encourage it.

Khomeini Iran (London: International Institute for Strategic Studies, 1995), 29.

²⁸ *LAT*, June 6, 1995, A1; Edward G. Shirley, “Is Iran’s Present Algeria’s Future?” *Foreign Affairs* 74, no. 3 (May-June 1995): 38-39; Eric Hoogland, “The Pulse of Iran Today,” *Middle East Insight* 11, no. 5 (July-August 1995): 40-47; and Eric Rouleau, “The Islamic Republic of Iran: Paradoxes and Contradictions in a Changing Society,” *Middle East Insight* 11, no. 5 (July-August 1995): 54-58.

²⁹ For this perspective, see Ali Banuazizi, “Iran’s Revolutionary Impasse: Political Factionalism and Societal Resistance,” *Middle East Report*, November-December 1994, 2-8; and Ben FitzGerald, “Iran After the Revolution,” C&O Resources, Inc., Washington, DC, May 1995, 1-3.

³⁰ Milton Viorst, “Changing Iran: The Limits of the Revolution,” *Foreign Affairs* 74, no. 6 (November-December 1995): 63-76; Hoogland, 40-47; and Rouleau, 54-58.

³¹ Hashim and Clawson offer qualified support for this perspective; see Hashim, *Crisis of the Iranian State*, 70-73; and Clawson, *Business As Usual?* 61-64. This assessment has been most boldly advanced by Uri Lubrani, former Israeli ambassador to Tehran; see his speech to the American-Israeli Public Affairs Committee, Washington, DC, May 8, 1995; and Assad Homayoun, “The Urgent Need for a New Leadership in Iran,” *Focus on Iran*, October 1995.

Although the United States has limited influence over internal developments in Iran, it can shape the context in which the internal power struggle occurs and thereby perhaps *indirectly* influence its outcome. Specifically, the United States can exploit whatever potential for change may exist in a manner consistent with its interests and values, by:

- keeping economic sanctions on Iran. In addition to curbing Iran's troublemaking potential, they contribute to the economic woes of the regime and therefore help feed the frustrations that underpin much of the popular dissatisfaction with clerical rule.
- lowering the volume of rhetoric concerning Iran. This only bolsters the standing of the regime in Tehran, and isolates the United States by alienating its allies, who do not share Washington's sense of alarm or urgency.
- working to exacerbate the growing split between the regime and the people, to strengthen the latter in their struggle, and to tap existing reservoirs of goodwill toward America in the general population.³²

The United States can accomplish the last goal by quietly building bridges with Iranians in and out of government who seek the withdrawal of the clerics from politics, by encouraging those who desire greater contact and dialogue with the United States (through academic exchanges and visits by groups of Iranians to the United States, for instance), and by publicly championing those Iranians calling for greater freedom and democracy in their country.

Because Tehran does not permit foreign labor unions, professional associations, or non-governmental organizations³³ to operate in Iran or work with their Iranian counterparts, the ability of the United States to foster direct contacts with potentially friendly elements in Iranian civil society is limited. As a result, U.S. government-sponsored radio and television broadcasts—such as the Persian language service of the Voice of America—have a crucial role to play in communicating with the Iranian people over the heads of their government. These broadcasts should: stress America's friendship for the Iranian people and underscore that U.S. policy is intended to punish Iran's government and not its people; highlight the opinions of *mullahs* both inside and outside Iran who are critical of the regime and the system of clerical rule; and demonstrate support for the Iranian people by condemning the human rights abuses of the regime and supporting those who call for political pluralism and more

³² Conventional diplomacy has a greater role to play in achieving this objective than does covert action. Reports that the U.S. Congress had secretly authorized \$18 million for covert operations in Iran dredged up unhappy memories among Iranians of the U.S.-engineered 1953 *coup* that toppled nationalist Prime Minister Mohammad Mossadeq and stoked deep-seated fears (rooted in Iran's history of subjugation by foreign powers) that the United States seeks to dominate and control Iran rather than deal with it as an equal; see *NYT*, January 26, 1996, A1.

³³ Non-governmental organizations (NGOs), such as Save the Children, CARE, and Doctors Without Borders, are largely engaged in providing people-to-people development and humanitarian assistance.

representative democratic institutions (although the United States must be careful not to taint these people by overly enthusiastically embracing them).

From the point of view of the United States and its allies in the region, the creation of a more open political system and society in Iran in which radical clerics play a diminished role would be a positive development. Such a change in Tehran could lead to a decline in radicalism abroad and greater freedom at home, and improve the prospects for more normal relations between the United States and Iran (even if some tensions persist). By pursuing such a policy, Washington will not only put itself in league with a considerable body of popular opinion in Iran—thereby adding positive content to U.S. policy—but will take the first step toward fostering positive change there. This would not only serve the interests of the United States, but also the interests of the majority of Iranians who have suffered under the *ayatollahs*, desire normal ties with the United States, and long for Iran to emerge from its current isolation and once again take its place among the family of nations.



APPENDICES

Appendix I

U.S. POLICY ON THE TRANSFER OF NUCLEAR TECHNOLOGY TO IRAN

The following is the text of a written reply provided by the State Department in response to a journalist's question concerning U.S. opposition to the transfer of nuclear technology to Iran, even though it is a signatory in good standing to the Nuclear Nonproliferation Treaty (NPT).¹

Nuclear cooperation, as provided for under Article IV of the NPT, should not take precedence over the NPT's principal objective of forestalling nuclear proliferation, especially in the case of countries of proliferation concern such as Iran.

NPT Article IV commitments must be read in the light of the parties' compliance with NPT Articles I, II, and III committing parties not to engage in activities that would result in the proliferation of nuclear weapons. Since we are persuaded that Iran intends to obtain nuclear weapons as soon as it is able to do so, we see no basis for citing Article IV obligations.

Furthermore, Iran has a bad record with regard to other weapons of mass destruction. It has a chemical weapons capability which it seeks to improve in spite of having signed the chemical weapons convention, it has a biological weapons program despite being a party to the biological and toxins weapons convention.

It also continues to seek improvements in its ballistic missile capabilities which could be used to deliver weapons of mass destruction.

The Iraqi example clearly demonstrates that actions, such as restrictions on nuclear cooperation, may be necessary even with an NPT party.

¹ *Iran Brief*, February 6, 1995, 10.

Appendix II

ESTIMATING A TIMETABLE FOR IRAN'S NUCLEAR PROGRAM

It is impossible to know with any degree of certainty how long it could take Iran to develop a nuclear weapons capability. Prior to the break-up of the Soviet Union, it was possible to posit fundamental milestones for any given nuclear program. Programs based on the plutonium route, for instance, generally require four to seven years to construct the plutonium production reactor, one to two years of reactor operation to produce sufficient plutonium for a weapon, several weeks to separate the plutonium from the spent fuel, and anywhere from several months to several years to manufacture a weapon.

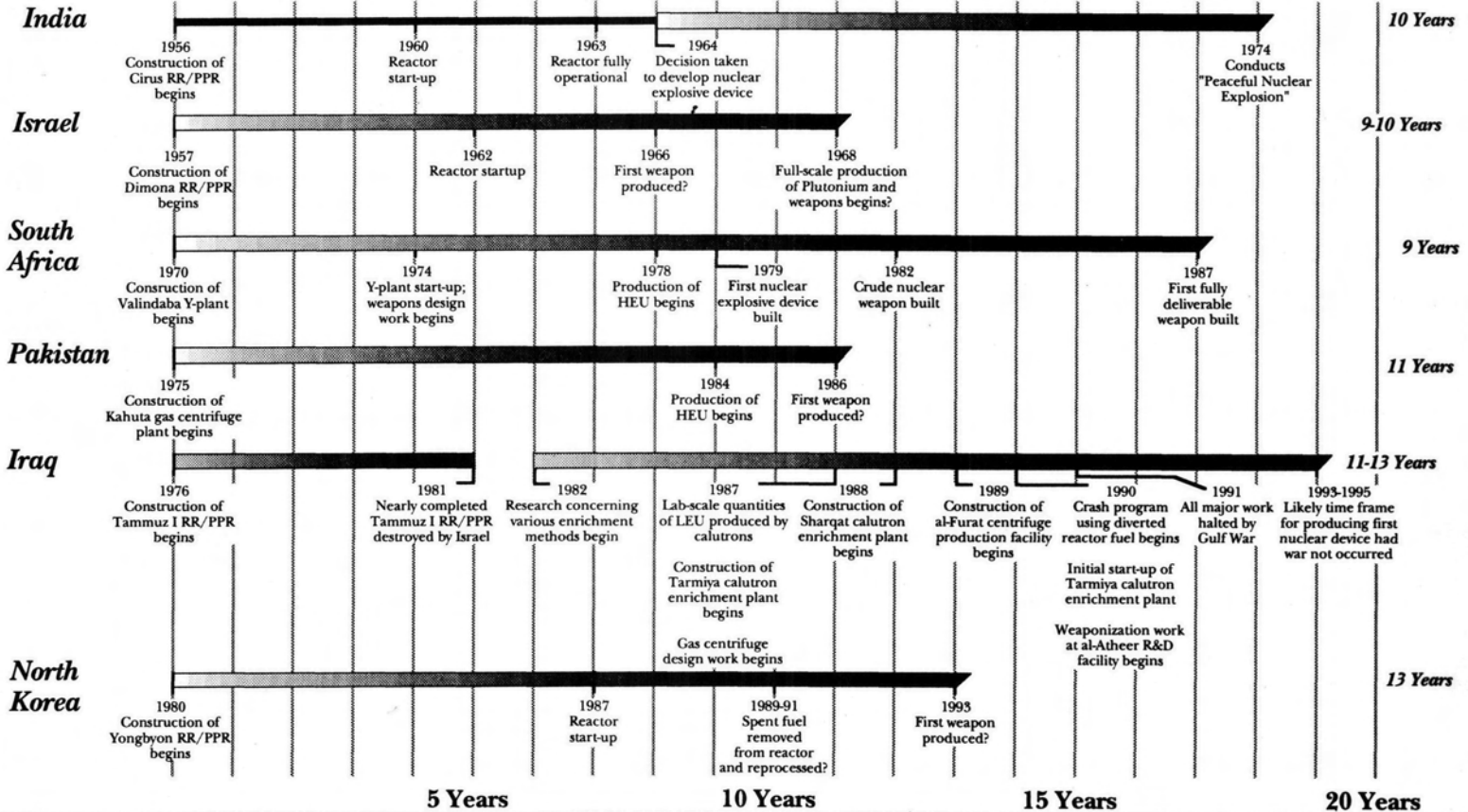
Similarly, programs based on the enrichment of uranium by gas centrifuge generally require about ten years to build a centrifuge enrichment facility, one to two years to produce enough enriched uranium for a weapon, and several months or years to manufacture a weapon. Thus, nuclear programs in the developing world historically required about a decade to produce their first nuclear device.

Based on these kinds of calculations, public CIA assessments in the early 1990s estimated that it would take Iran eight to ten years to produce nuclear weapons. By comparison, an unclassified 1993 report by the Russian Foreign Intelligence Service estimated that even with the necessary levels of investment and outside assistance, Iran would probably need more than ten years to develop nuclear weapons.

The collapse of the Soviet Union, however, has transformed the international proliferation landscape and made it nearly impossible to forecast with any degree of accuracy the possible timeframe for the production of an Iranian nuclear weapon. In particular, the recent discovery in Europe of plutonium and enriched uranium smuggled out of the former Soviet Union raises the possibility of the diversion of fissile material from the country's far-flung nuclear infrastructure. Because it may now be able to buy fissile material (plutonium or enriched uranium) in the former Soviet Union, Iran (and others) may be able to bypass the most difficult step in acquiring a nuclear weapon—the production of fissile material—and thus go directly to weaponization.

Iran's acquisition of fissile material in this way could dramatically reduce the time required to develop a nuclear weapon. If, on the other hand, Iran fails in these efforts and has to produce the fissile material itself, it could take Tehran a decade or more to do so. And if domestic unrest were to plunge the country into chaos (at present an unlikely prospect), efforts to acquire a nuclear capability could be delayed significantly or thwarted altogether.

Nuclear Time Lines: Principle Program Milestones for Various Threshold States



Appendix III

RUSSIAN-IRANIAN NUCLEAR COOPERATION ACCORD¹

January 8, 1995

Protocol of negotiations between Professor V.N. Mikhailov, Minister of Atomic Energy of the Russian Federation, and Director R. Amrollahi, Vice President of the Islamic Republic of Iran and Chairman of the Atomic Energy Organization of Iran.

From January 5-8, 1995, Minister of Atomic Energy of the Russian Federation, Prof. V.N. Mikhailov, visited Iran at the request of the Vice President of the Islamic Republic of Iran, Chairman of the Atomic Energy Organization of Iran, Director R. Amrollahi. During this visit, negotiations concerning cooperation in the peaceful use of atomic energy were held. The two parties expressed their satisfaction with the results of the visit and reached the following agreements:

1. The present protocol establishes that the contract for completing the construction of Block No. 1 at the Bushehr Nuclear Power Plant (NPP), which was signed by the Russian firm Zarubezhatomenergostroy and by the Atomic Energy Organization of Iran on January 8, 1995, shall be carried out by the parties.

2. The parties exchanged letters in which the principal questions concerning cooperation on completing construction of Block No. 1 at the Bushehr NPP in Iran were decided.

3. To utilize Iranian personnel, as much as possible, especially for completing Block No. 1 at the Bushehr NPP.

4. The subsequent delivery of fuel for Block No. 1 at the Bushehr NPP will be done as stipulated and at world prices.

5. Within a month, the Russian side will instruct the corresponding Russian organization to submit a proposal for the training of Iranian personnel, so that after a preliminary period of operation, Block No. 1 at the Bushehr NPP can be run exclusively by Iranian personnel.

6. The parties instruct their competent organizations to prepare and sign:
- in three months, a contract for delivery of a light water reactor for research with a power of 30-50 MWt from Russia;
 - in the first quarter of 1995, a contract for the delivery of 2,000 tons of natural uranium from Russia;
 - in the first quarter of 1995, a contract for the preparation/training for Atomic Energy Organization of Iran scientific personnel, 10-20 (graduate students and Ph.D.'s) annually, at Russian academic institutions;

¹ The Natural Resources Defense Council (NRDC) released an earlier version of this translation. The author would like to thank the NRDC for permission to reprint it here.

- within six months time, a contract for the construction of a uranium mine in Iran, after which negotiations will be conducted on the signing of a contract for the construction of a centrifuge plant for enrichment of uranium according to conditions, which are comparable to conditions of contracts concluded by Russian organizations with firms in other countries.

7. The parties have agreed:

- on cooperation in the construction of research reactors of low power (less than 1 MWt) in Iran for instructional purposes. Over a six month period, the Russian side will transfer a technical-commercial proposal to the Iranian side on this matter;
- to examine the issue of cooperation on the construction of a desalination plant in Iran;
- to carry out meetings, no less frequently than once a year, on the high level of Russia's MINATOM and the Atomic Energy Organization of Iran for the organization of operational control for the implementing of cooperation, especially for the work in connection with the construction of Block No. 1 at Bushehr NPP.

The discussions were carried out in a friendly manner.

Two copies of the present protocol were signed in Iran, January 8, 1995, one each in Russian and Persian.

V.N. Mikhailov
Minister of Atomic Energy
of the Russian Federation

R. Amrollahi
President of the Atomic
Energy Organization of Iran

Appendix IV

IRAN'S NUCLEAR PROCUREMENT EFFORTS

Over the past decade, Iran has tried to acquire nuclear technology and materials from nearly twenty countries. The following is a partial list, based on published sources, of Iran's nuclear technology procurement effort.

<u>Country</u>	<u>Items</u>	<u>Year</u>	<u>Status</u>
Argentina	Low-enriched uranium fuel for Tehran's 5 MWt research reactor	1987	Supplied
	20-30 MWt research reactor	1987	Denied
	Uranium milling equipment	1987	Denied
	Nuclear fuel fabrication technology	1987	Denied
	Nuclear fuel reprocessing technology	1987	Denied
	Heavy water production technology	1987	Denied
Belgium	30 MWe ion beam applications cyclotron	1991	Supplied
China	Research calutron	1990	Supplied
	27 KWt miniature neutron-source reactor	1990	Supplied
	Heavy water zero power reactor	1990	Supplied
	30 MWt research reactor	1990	Denied
	Nuclear power plant (two 300-MWe reactors)	1992	Pending?
	Uranium hexafluoride conversion plant	1996	Pending?
Germany	Nuclear power plants (two 1300 MWe reactors)	1984	Denied
	Gas centrifuge components (ring magnets and vacuum pumps)	1991	Denied
	Gas centrifuge production machinery (balancing machines)	1991	Denied
India	10 MWt research reactor	1991	Denied
Italy	Nuclear power plant reactor steam condensers	1993	Denied
	Ultrasonic test equipment	1995	?
Khazakhstan	Beryllium and enriched uranium reactor fuel	1992	Denied
Pakistan	Gas centrifuge design data (?)	1991	?
	Gas centrifuge component procurement data (?)	1991	?
Poland	Nuclear power plant reactor components	1993	Denied

<u>Country</u>	<u>Items</u>	<u>Year</u>	<u>Status</u>
Russia	Nuclear power plant (one or two 1,000 MWe reactors)	1995	Pending
	Nuclear power plant (two 440-MWe reactors)	1990	Pending?
	Nuclear desalination plant (one BN-350 reactor)	1995	Pending?
	30-MW research reactor	1993	Pending?
	Gas centrifuge enrichment plant	1995	Denied
	Uranium reactor fuel	1995	Pending
Slovakia	Ultrasonic test equipment for testing nuclear reactors	1995	?
South Africa	Yellowcake	1988-89	Supplied
Switzerland	Gas centrifuge production technology	1991	?
United Kingdom	Gas centrifuge feedstock precursor (fluorine)	1991	?
	High-speed cameras and flash x-ray equipment	?	?
United States	Oscilloscopes for analyzing weapons test data	1989-90	?

Appendix V

EFFORTS TO PREVENT OR INTERDICT THE TRANSFER OF ARMS OR SENSITIVE TECHNOLOGIES TO IRAN

While financial constraints have been the chief obstacle to Iran's military build-up, unilateral and multilateral efforts by the United States and its allies to block the transfer of arms and technologies with military applications have played an important role in limiting Iran's military potential. These efforts began in the early years of the Iran-Iraq War and have hindered and delayed Iran's attempts to enhance its military capabilities, forcing it to divert significant resources to costly clandestine procurement. The most notable recent successes of this denial effort are listed below.

NUCLEAR TECHNOLOGY

<u>Country</u>	<u>Action Taken</u>	<u>Date</u>
Germany	Refused to complete Bushehr power plant	1987-present
India	Refused to supply 10 MWt research reactor	1991
China	Refused to supply 30 MWt research reactor	1992
Argentina	Refused to supply research reactor and nuclear fuel fabrication and reprocessing technology	1987
Khazakhstan	Refused to supply beryllium and enriched reactor fuel	1992
Italy	Interdicted shipment of nuclear power plant reactor components	1993
Czech Republic	Refused to supply nuclear power plant reactor components	1993
Poland	Interdicted shipment of nuclear power plant reactor components	1993
Slovakia	Interdicted shipment of ultrasonic test equipment	1995

CHEMICAL AND BIOLOGICAL WEAPONS-RELATED ITEMS

<u>Country</u>	<u>Action Taken</u>	<u>Date</u>
United States	Interdicted/refused to supply chemical agent precursors and production equipment	late 1980s/ early 1990s

Germany	Refused to supply chemical agent precursors and production equipment	late 1980s/ early 1990s
Canada	Refused to supply mycotoxins	1989
Netherlands	Refused to supply mycotoxins	1989
Switzerland	Biological agent production equipment sabotaged and destroyed	1992, 1993
Italy	Interdicted shipment of chemical agent production equipment	1993

CONVENTIONAL ARMS

<u>Country</u>	<u>Action Taken</u>	<u>Date</u>
Czech Republic	Refused to supply 1,500 T-55 tanks and Tamara passive air defense warning system	1991, 1993
United States	Interdicted night vision equipment, military optics, spare parts for weapons, and satellite technology	1980s-present
Russia	Pledged not to conclude new arms contracts	1994

Appendix VI

DETECTING IRAN

Because Shi'i religious doctrine exalts the suffering and martyrdom of the faithful, and because religion plays a central role in post-revolution Iranian politics, the Islamic republic is sometimes portrayed as an "undeterrable" state driven by the absolute imperatives of religion, not the pragmatic concerns of statecraft.¹ This impression has been reinforced by Iran's use of costly human wave attacks during the Iran-Iraq War, its unnecessary prolongation of the fighting due to its pursuit of unrealistic war objectives (e.g., the overthrow of Saddam Hussein), and its support for groups such as Hezbollah that use suicide bombings as a tactic. Experience has shown, however, that this perception is wrong.

There is an important difference between the logic guiding the behavior of individuals and states. Muslims moved by faith or misguided idealism to become suicide bombers, like Iranians who participated in near suicidal human wave attacks during the Iran-Iraq War, have done so in the belief that they were achieving personal salvation in the world to come, while their families and country would benefit in this world from their sacrifice. In contrast, Iranian decisionmakers who have sanctioned suicide bombings and human wave attacks have generally been motivated by pragmatic and instrumental considerations: to promote the interests of a given individual or political faction and those of the state. Neither the martyr nor the decisionmaker, however, desires that his actions bring ruin and destruction to the nation (though a miscalculation that produces such an outcome is always possible).

This point can be illustrated by several incidents that occurred during the American military intervention in the Gulf (Operation Earnest Will) toward the end of the Iran-Iraq War. After the United States re-flagged Kuwaiti oil tankers in the Persian Gulf in July 1987, Iran was careful not to attack re-flagged vessels while under armed escort in order to avoid a clash with the United States. Moreover, when the United States caught the *Iran Ajr* laying mines in September 1987—providing definitive proof that Iran was responsible for mining the Gulf—Iran ceased these activities for six months to avoid escalation with the United States. Furthermore, when the Iranian navy lost half its major surface combatants in a clash with the U.S. Navy in April 1988 (one fast attack craft and one frigate sunk, one frigate heavily damaged), it ceased attacks on neutral shipping in the Gulf (although IRGC small boat operations continued). And when the *U.S.S. Vincennes* accidentally shot down an Iranian airliner in July 1988 (an act that Iran believed was premeditated), Iranian fears that U.S. military intervention was imminent contributed to Tehran's decision to end the war.

Iraq's growing ability to rain destruction on Iran's major cities also played a role in Tehran's decision to end the war. Attacks on Tehran and other cities with extended range SCUD-B missiles during the February-April 1988 "War of the Cities" killed more than 2,000 Iranian civilians, wounded 6,000, and caused the

¹ This term was coined by the late U.S. Secretary of Defense Les Aspin and continues to enjoy some currency among defense analysts. See Secretary of Defense Les Aspin, remarks to the Committee on International Security and Arms Control, National Academy of Sciences, Washington, DC, December 7, 1993.

flight of one-quarter of Tehran's population to the countryside. The demoralizing impact of the "War of the Cities" on Iran's leadership was compounded by fears that Iraq would use missiles armed with chemical warheads against Iranian cities if the war did not end soon.

These incidents show that while its threshold for pain may be greater than that of other states, Iran is not insensitive to costs. Thus, it may be deterred from certain actions by the threat of punishment, although Tehran's behavior during the Iran-Iraq War and afterward shows that it will nonetheless try to circumvent constraints and obstacles imposed by adversaries in order to accomplish its objectives. These factors make Iran a difficult and dangerous adversary, but one that can nonetheless be dealt with using traditional tools of diplomacy and statecraft.

Appendix VII

IRAN'S LEADING TRADE PARTNERS¹

IRAN'S IMPORTS
(in millions of dollars)

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Germany	2,835	4,473	5,612	2,737	1,737
UAE	1,044	1,044	1,148	1,101	1,059
Japan	1,782	2,724	2,918	1,606	1,005
China	321	322	369	443	292
Italy	1,218	1,924	2,253	1,430	787
France	663	985	820	800	907
United States	140	580	822	678	362
Turkey	545	536	501	318	294
Argentina	564	356	356	273	294
Netherlands	542	565	527	352	259

IRAN'S EXPORTS
(in millions of dollars)

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Japan	3,998	2,630	2,524	2,211	2,483
Republic of Korea	437	617	549	994	1,164
Italy	1,678	1,129	815	1,260	925
Netherlands	7	30	24	1,083	920
France	596	411	609	1,306	908
Greece	91	598	632	825	817
Germany	2,285	1,427	794	723	752
Turkey	389	321	762	692	689
Spain	605	288	167	534	583
Singapore	189	397	450	591	536
Indonesia	38	6	1	457	444
Rumania	61	129	95	104	404
UK	1,512	1,275	1,537	335	185
Belgium-Luxembourg	607	395	554	32	32
United States	294	1,756	2,116	—	1

¹ International Monetary Fund, *Direction of Trade Statistics Yearbook: 1995*, 247-48.

THE WASHINGTON INSTITUTE POLICY PAPERS SERIES

- Policy Paper 41: *Partner or Pariah? Attitudes Toward Israel in Syria, Lebanon, and Jordan* by Hilal Khashan
- Policy Paper 40: *Syria Beyond the Peace Process* by Daniel Pipes
- Policy Paper 39: *Between Pragmatism and Ideology: The Muslim Brotherhood in Jordan 1989-1994* by Sabah el-Said
- Policy Paper 38: *The Economy of Saudi Arabia: Troubled Present, Grim Future* by Eliyahu Kanovsky
- Policy Paper 37: *After King Fahd: Succession in Saudi Arabia* by Simon Henderson
- Policy Paper 36: *Like a Phoenix from the Ashes? The Future of Iraqi Military Power* by Michael Eisenstadt
- Policy Paper 35: *Radical Middle East States and U.S. Policy* by Barry Rubin
- Policy Paper 34: *Peace with Security: Israel's Minimal Security Requirements in Negotiations with Syria* by Ze'ev Schiff
- Policy Paper 33: *Iran's Challenge to the West: How, When, and Why* by Patrick Clawson
- Policy Paper 32: *"The Arab Street?" Public Opinion in the Arab World* by David Pollock
- Policy Paper 31: *Arming for Peace? Syria's Elusive Quest for "Strategic Parity"* by Michael Eisenstadt
- Policy Paper 30: *The Economic Consequences of the Persian Gulf War: Accelerating OPEC's Demise* by Eliyahu Kanovsky
- Policy Paper 29: *King Hussein's Strategy of Survival* by Uriel Dann
- Policy Paper 28: *The Arrow Next Time? Israel's Missile Defense Program for the 1990s* by Marvin Feuerwerker
- Policy Paper 27: *Palestinian Self-Government (Autonomy): Its Past and Its Future* by Harvey Sicherman

- Policy Paper 26: *Damascus Courts the West: Syrian Politics, 1989-1991*
by Daniel Pipes
- Policy Paper 25: *Economic Consequences of Peace for Israel, the Palestinians, and Jordan* by Patrick Clawson and Howard Rosen
- Policy Paper 24: *The Future of Iraq* by Laurie Mylroie
- Policy Paper 23: *"The Poor Man's Atomic Bomb?" Biological Weapons in the Middle East* by Seth Carus
- Policy Paper 22: *Jerusalem* by Teddy Kollek
- Policy Paper 21: *"The Sword of the Arabs": Iraq's Strategic Weapons*
by Michael Eisenstadt
- Policy Paper 20: *OPEC Ascendant? Another Case of Crying Wolf*
by Eliyahu Kanovsky
- Policy Paper 19: *In Through the Out Door: Jordan's Disengagement and the Peace Process* by Asher Susser
- Policy Paper 18: *At Arm's Length: Soviet-Syrian Relations in the Gorbachev Era*
by John Hannah
- Policy Paper 17: *Unaffordable Ambitions: Syria's Military Build-Up and Economic Crisis* by Patrick Clawson
- Policy Paper 16: *Hezbollah's Vision of the West* by Martin Kramer
- Policy Paper 15: *Security for Peace: Israel's Minimal Security Requirements in Negotiations with the Palestinians* by Ze'ev Schiff
- Policy Paper 14: *The Genie Unleashed: Iraq's Chemical and Biological Weapons Production* by Seth Carus
- Policy Paper 13: *The PLO's New Policy: Evolution Until Victory*
by Barry Rubin
- Policy Paper 12: *Development Diplomacy: U.S. Economic Assistance to the West Bank and Gaza* by Joyce Starr
- Policy Paper 11: *Changing the Balance of Risks: U.S. Policy Toward the Arab-Israeli Conflict* by Harvey Sicherman
- Policy Paper 10: *Army and Politics in Mubarak's Egypt* by Robert Satloff

THE WASHINGTON INSTITUTE POLICY FOCUS SERIES

- Policy Focus 30: *Jordan-Israel Peace, Year One: Laying the Foundation*
by Steven A. Cook
- Policy Focus 29: *An Islamic Republic of Algeria? Implications for the Middle East and the West* by Gideon Gera
- Policy Focus 28: *Extending the Nuclear Nonproliferation Treaty: The Middle East Debate* by Shai Feldman
- Policy Focus 27: *Proliferation for Profit: North Korea in the Middle East*
by Joseph S. Bermudez, Jr.
- Policy Focus 26: *Tourism Cooperation in the Levant* by Patrick Clawson
- Policy Focus 25: *Toward a Syrian-Israeli Peace Agreement: Perspective of a Former Negotiator* by Yossi Olmert
- Policy Focus 24: *Peace Through Entrepreneurship: Practical Ideas from Middle Eastern Business Leaders* by Erturk Deger, M. Shafik Gabr, and Benjamin Gaon
- Policy Focus 23: *Russian Arms Sales Policy Toward the Middle East*
by Andrei Volpin
- Policy Focus 22: *The Vindication of Sadat in the Arab World*
by Saad Eddin Ibrahim
- Policy Focus 21: *Iraq: Options for U.S. Policy* by Laurie Mylroie
- Policy Focus 20: *Water and the Peace Process: Two Perspectives*
by Shlomo Gur and Munther Haddadin
- Policy Focus 19: *Hamas: The Fundamentalist Challenge to the PLO*
by Clinton Bailey
- Policy Focus 18: *Baghdad Between Shi'a and Kurds* by Ofra Bengio
- Policy Focus 17: *The Arab States and the Arab-Israeli Peace Process: Linkage or Disengagement?* by Barry Rubin
- Policy Focus 16: *Toward Middle East Peace Negotiations: Israeli Postwar Political-Military Options in an Era of Accelerated Change*
by Dore Gold

RECENT PUBLICATIONS OF THE WASHINGTON INSTITUTE

The Future of U.S.-Israel Strategic Cooperation—An examination by Shai Feldman of the origins of U.S.-Israel strategic cooperation and the ways in which America's victory in the Cold War and the progress in the Arab-Israeli peace process can be used to build a deeper, more integrated bilateral defense relationship in the years ahead.

Approaching Peace: American Interests in Israeli-Palestinian Final Status Talks—A collection of essays presenting specific policy recommendations for a U.S. role in reaching a final peace agreement. The contributors are Samuel Lewis, Hermann Eilts, Richard Haas, Peter Rodman, Eugene Rostow, William Quandt, Harvey Sicherman, and Kenneth Stein.

Democracy and Arab Political Culture—An examination by Elie Kedourie of the political traditions of Islam and the introduction of Western ideas into the Middle East in the 19th century.

The Politics of Change in the Middle East—A collection of essays by distinguished scholars examining political stability and regime succession, edited by Robert Satloff.

Making Peace with the PLO: The Rabin Government's Road to the Oslo Accord—A detailed assessment of the personal, domestic, and international factors that led Yitzhak Rabin, Shimon Peres, and Israel's Labor government to conduct the secret negotiations that resulted in the historic Israeli-Palestinian peace accords, by *Jerusalem Post* and *U.S. News and World Report* correspondent David Makovsky.

Democracy in the Middle East: Defining the Challenge—A Washington Institute monograph featuring Graham Fuller, Mohammed Abdelbeki Hermassi, Martin Kramer, Joshua Muravchik, and Laurie Mylroie.

Supporting Peace: America's Role in an Israel-Syria Peace Agreement—A report by Michael Eisenstadt, Andrew Bacevich, and Carl Ford on the role that U.S. forces could play in monitoring and maintaining an Israel-Syria peace agreement.

For a complete list of Washington Institute publications, contact:

The Washington Institute for Near East Policy
1828 L Street, NW, Suite 1050
Washington, D.C. 20036
Phone (202) 452-0650 ♦ Fax (202) 223-5364

THE WASHINGTON INSTITUTE
for Near East Policy
An educational foundation
supporting scholarly research and informed debate
on U.S. interests in the Near East

Executive Committee

President

Michael Stein

Richard S. Abramson
 Richard Borow
 Benjamin Breslauer
 Maurice Deane
 Leonard Goodman

Les Aspin*

Alexander Haig
 Max M. Kampelman
 Jeane Kirkpatrick
 Edward Luttwak
 Michael Mandelbaum
 Robert C. McFarlane

Vice Presidents

Charles Adler
 Bob Goldman
 Walter P. Stern

Secretary/Treasurer

Fred Lafer

Chairman

Barbi Weinberg

Roger Hertog
 Fred Schwartz
 Helene Soref (*Emeritus*)
 Bernard S. White

Board of Advisors

Counselor

Samuel W. Lewis

Martin Peretz
 Richard Perle
 James Roche
 Eugene V. Rostow
 George P. Shultz
 Paul Wolfowitz
 Mortimer Zuckerman

Institute Staff

Adjunct Scholars

Patrick Clawson
 Hirsh Goodman
 Joshua Muravchik
 Daniel Pipes
 Harvey Sicherman

Office Manager

Nina Bisgyer

Development and Programs

Anne van den Avond

Program Officer

Anna Estep

Financial Officer

Laura Hannah

Financial Assistant

Nicole Pisapia

Executive Director

Robert Satloff

Associates

Ze'ev Schiff
 Ehud Ya'ari

1996 Visiting Fellows

Amatzia Baram
 Abbas Kelidar
 Elie Rekhess
 Kenneth Stein
 Eyal Zisser

National Defense Fellow
 Lt. Col. Terry Jones, USAF

Soref Fellows

Steven A. Cook
 Jonathan Torop

Administrative Assistant

Stephanie Hill

Senior Fellows

Michael Eisenstadt
 Alan Makovsky

Scholar-in-Residence

David Pollock

Director of Publications

John Wilner

Research Assistants

Eden Bossom
 Alicia Gansz
 Lauren Rossman
 Greg Saiontz

Research Interns

Zachary Schwartz
 Jason Berman
 Rachel Rittberg

* *Deceased*





FOCUS ON IRAN

Iranian Military Power: Capabilities and Intentions

by Michael Eisenstadt

In the aftermath of the Iran-Iraq War, Iran undertook a major military build-up designed to make it the dominant power in the Persian Gulf. In an exhaustively researched study, regional security expert Michael Eisenstadt contends that despite severe economic problems and the impact of U.S. sanctions, Iran has invested heavily in nuclear, biological, and chemical weapons; ballistic missiles capable of striking Israel and other U.S. allies in the region; and naval assets that could be used to obstruct the passage of oil through the Gulf. In addition, Iran continues to support terrorist groups opposed to the Arab-Israeli peace process. Though U.S. efforts to contain Iran have been only partially effective thus far, Eisenstadt argues that they have prevented Iran from realizing its military ambitions, and therefore should be seen as an overall success.

Revolution at a Crossroads: Iran's Domestic Politics and Regional Ambitions

by David Menashri

In an incisive account of contemporary events in Iran, David Menashri examines how the contending forces of revolutionary zeal and the demands of governance—personified in the ongoing power struggle between the pragmatic faction of President Rafsanjani and the radical conservative faction led by Spiritual Leader 'Ali Khamene'i—have resulted in a series of contradictions in Iran's domestic and foreign policy. Since the death of Ayatollah Khomeini, neither faction has had the political power, religious authority, or mass appeal needed to resolve the political, economic, and social problems that first precipitated the revolution and now undermine its legitimacy. As challenges to the regime continue to mount, Menashri contends that Tehran is likely to maintain this uneasy balance between pragmatism and ideology, which may protect the regime in the short run but help erode its long-term stability.

Iran's Economic Morass: Mismanagement and Decline under the Islamic Republic

by Eliyahu Kanovsky

The Iranian economy has been in a steady decline since the 1979 Islamic Revolution, with rising inflation, foreign debt, and corruption leading to unemployment, widespread deprivation, and a gradual erosion in living standards. In a detailed analysis of post-revolutionary financial data, Middle East economist Eliyahu Kanovsky examines how ideologically driven mismanagement by Iran's clerical leadership has exacerbated the effects of the Iran-Iraq War, the decline in world oil prices, and U.S. sanctions—resulting in violent protests in several Iranian cities. Although the regime retains a firm hold on power, the economic crisis is feeding growing popular disenchantment with the Islamic government—which, Kanovsky concludes, lacks both the political will and leverage to implement the painful economic reforms necessary to alter Iran's present course.