

# DEFENSE 96

MANAGING DANGER:

THE  
LINES OF DEFENSE

DISSEMINATION STATEMENT A

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STRETCHING DoD DOLLARS

WORLD CLASS TRAVEL SUPPORT

IRAQ, IRAN, LIBYA NBC THREAT

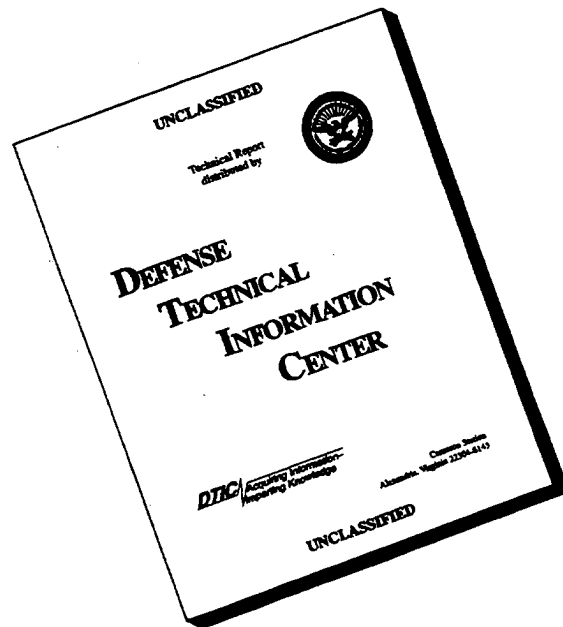
ASIAN NUCLEAR KNOW-HOW SPREADS

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ISSUE 1

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# MANAGING DANGER:

DEFEAT

CONTRARY TO THE HOPES OF MANY and predictions of some, the end of the Cold War did not bring an end to international conflict. The most daunting threats to our national security we faced during the Cold War have gone away, but new dangers have replaced them.

During the Cold War, we faced the threat of nuclear holocaust. Today, we face the dangers attendant to the proliferation of weapons of mass destruction. Nuclear weapons in the hands of rogue nations or terrorists are especially dangerous because unlike the nuclear powers during the Cold War, they might not be deterred by the threat of retaliation.

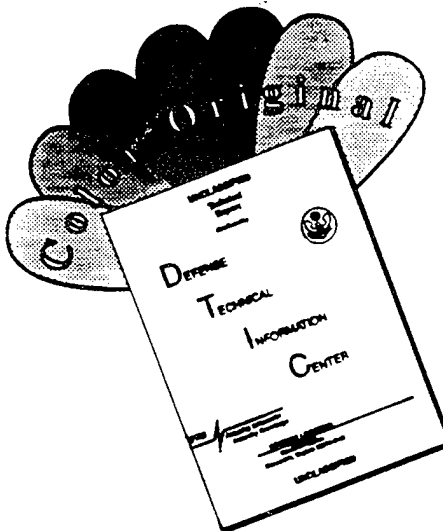
**BY WILLIAM J. PERRY**  
*Secretary of Defense*

During the Cold War, we faced the threat of Warsaw Pact forces charging through the Fulda Gap and driving for the English Channel. Today, we face the dangers attendant to the instability in Central and Eastern Europe resulting from the painful transition to democracy and market economies now under way there. This instability could lead to civil wars or even the re-emergence of totalitarian regimes hostile to the West.

During the Cold War, we faced the threat of the Soviet Union using Third World nations as proxies in the Cold War confrontation. Today, we face the dangers arising from an explosion of local and regional conflicts unrelated to Cold War ideology, but rooted in deep-seated ethnic and religious hatreds and frequently resulting in horrible suffering. These conflicts do not directly threaten the survival of the United States, but they can threaten our allies and our vital interests, particularly if the regional aggressors possess weapons of mass destruction.

Based on his  
introduction to the  
"Annual Report to  
the President and  
the Congress,"  
released  
March 4, 1996

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The new post-Cold War dangers make the task of protecting America's national security different and in some ways more complex than it was during the Cold War. Our task of planning force structure is more complex than when we had a single, overriding threat.

Previously, our force structure was planned to deter a global war with the Soviet Union, which we considered a threat to our very survival as a nation. All other threats, including regional threats, were considered lesser-but-included cases.

**W**E assumed the forces we maintained to counter the Soviet threat were capable of dealing with any of these lesser challenges. Today, the threat of global conflict is greatly diminished, but the danger of regional conflict is neither lessened nor included and must be considered explicitly in structuring our forces. These risks are especially worrisome because many of the likely aggressor nations possess weapons of mass destruction. Additionally, our defense planning must provide a hedge for the possibility of a re-emergence of the threat of global conflict.

Also, our task of building alliances and coalitions is more complex in the absence of a global threat. With the collapse of the Soviet Union and the dissolution of the Warsaw Pact, the *raison d'être* of NATO, for example, had to be reconsidered from first principles to relate its missions to the new dangers. Also, new coalitions and partnerships needed to be formed with the newly emerging democratic countries.

In building such international coalitions, we understand the United States is the only country with truly global interests and a full range of global assets—military, economic and political. Thus, we are the natural leader of the international community. However, even the United States cannot achieve its goals without the active assistance of other nations. No state can act unilaterally and expect to fully address threats to its interests, particularly those that are

transnational in character.

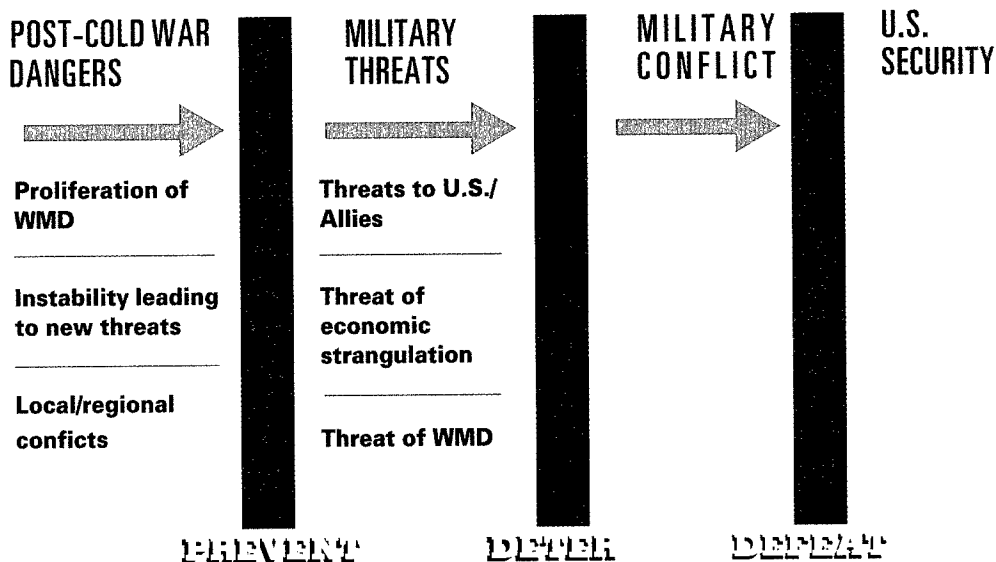
Thus the new post-Cold War security environment requires a significant evolution in our strategy for managing conflict, and it requires new and innovative defense programs and management philosophies to implement that strategy.

Today, our policy for managing post-Cold War dangers to our security rests on three basic lines of defense. The first line of defense is to prevent threats from emerging, the second is to deter threats that do emerge, and the third is to defeat the threat to our security with military force if prevention and deterrence fail. A renewed emphasis on the first line of defense—preventive defense—is appropriate in dealing with the post-Cold War dangers and is a significant departure from our Cold War defense policies, where the primary emphasis was on deterrence.

**D**URING World War II, all of America's defense resources were dedicated to defeating the threat posed by Japan and Germany and their allies. That war ended with a demonstration of the incredibly destructive power of atomic weapons. Thus when the Cold War began, the fundamental predicate of our defense strategy was fighting a nuclear war was unacceptable from a military as well as a moral standpoint.

So we formulated a strategy of deterrence—a logical response to the single overarching threat we faced during that era:

## THE THREE LINES OF DEFENSE



an expansionist Soviet Union heavily armed with nuclear and conventional weapons. This strategy meant the primary responsibility of previous secretaries of defense was making sure we had adequate nuclear and conventional forces to provide unambiguous deterrence.

Today, we continue to deter potential adversaries by maintaining the best military forces in the world. But in the post-Cold War era, the secretary of defense and the department also devote significant efforts to working on preventive defense. Preventive defense seeks to keep potential dangers to our security from becoming full-blown threats. It is perhaps our most important tool for protecting American interests from the special dangers that characterize the post-Cold War era. When successful, preventive defense precludes the need to deter or fight a war.

Preventive defense is nothing new. It has been a central idea of military strategists for over 2,000 years. Indeed, it has been an important strand in United States defense policy that has been used before with notable success.

**A**FTER World War II, the United States and its allies undertook significant efforts to prevent war by holding out a hand of reconciliation and economic assistance to our former enemies, Japan and Germany. These efforts were an outstanding success, especially the Marshall Plan in Europe. The economies of Japan and Western Europe rebounded, democracy grew deep roots, and our military cooperation and strategic alliances flourished. But Joseph Stalin turned down the Marshall Plan for the Soviet Union and the Eastern European countries he dominated, and our preventive efforts with the Soviet Union failed.

Instead, the Cold War ensued, and for more than 40 years the world faced the threat of global war and even nuclear holocaust. Having failed to prevent the conditions for conflict, the United States concentrated on the second line of defense — deterrence.

Over the next 40-plus years, deterrence worked, and World War III was averted. Finally, largely as a result of fundamental flaws in its political and economic system, the Soviet Union collapsed, and many of the new independent states sought to establish democratic governments and free-market

systems. The outcome of that unprecedented transformation is still uncertain, but today the threat of worldwide nuclear conflict has receded, former Warsaw Pact nations are seeking to join NATO, and Russia and the United States are cooperating in both economic and security programs.

**C**LEARLY, deterrence and warfighting capability still have to remain central to America's post-Cold War security strategy, but they cannot be our only approaches to dealing with the threats to our security. Instead, the dangers facing us today point us toward a greater role for preventive defense measures. Just as preventive defense measures helped shape our security environment following World War II, preventive measures can help us deal with post-Cold War dangers. Indeed, the end of the Cold War allows us to build on the types of preventive measures successfully introduced by George Marshall in Western Europe and extend them to all of Europe and the Asia-Pacific region.

In addition to maintaining strong alliances with our traditional allies in NATO and the Asia-Pacific region, our preventive defense approach consists of four core activities:

- Working cooperatively with Russia, Ukraine, Kazakhstan and Belarus to reduce the nuclear legacy of the former Soviet Union and to improve the safety of residual weapons;
- Establishing programs to limit proliferation of weapons of mass destruction;
- Encouraging newly independent and newly democratic nations to restructure their defense establishments to emphasize civilian control of their military, transparency in their defense programs and confidence-building measures with their neighbors;
- Establishing cooperative defense-to-defense relationships with nations that are neither full-fledged allies nor adversaries, but who are nonetheless important to our security.

Investing in these programs today, which my predecessor Les Aspin aptly dubbed "defense by other means," saves us both blood and treasure tomorrow.

Proliferation is a prime example. Possession of nuclear or other weapons of mass destruction by a potential aggressor not only increases the potential lethality of any

regional conflict, but the mere possession of the weapons by the potential aggressor increases chances of conflict arising in the first place.

In other words, it is not just that a nuclear-armed Iraq or North Korea would be a more deadly adversary in a war, it is that with nuclear weapons they are likely to be harder to deter and more likely to coerce their neighbors or start a war in the first place. The Framework Agreement with North Korea is a prime example of our counterproliferation program at work. The dangerous North Korean nuclear program has been frozen since October 1994, when the Framework Agreement was signed.

**A**NOTHER example of preventive defense is our Cooperative Threat Reduction, often referred to as the Nunn-Lugar Program. Under this program, we have assisted the nuclear states of the former Soviet Union to dismantle thousands of nuclear warheads and destroy hundreds of launchers and silos.

Reducing the nuclear threat to the United States and stopping proliferation are only the most dramatic examples of why prevention is so important to our security. Follow-

ing are detailed descriptions of the programs we have initiated to strengthen our preventive defense, most notably Partnership for Peace.

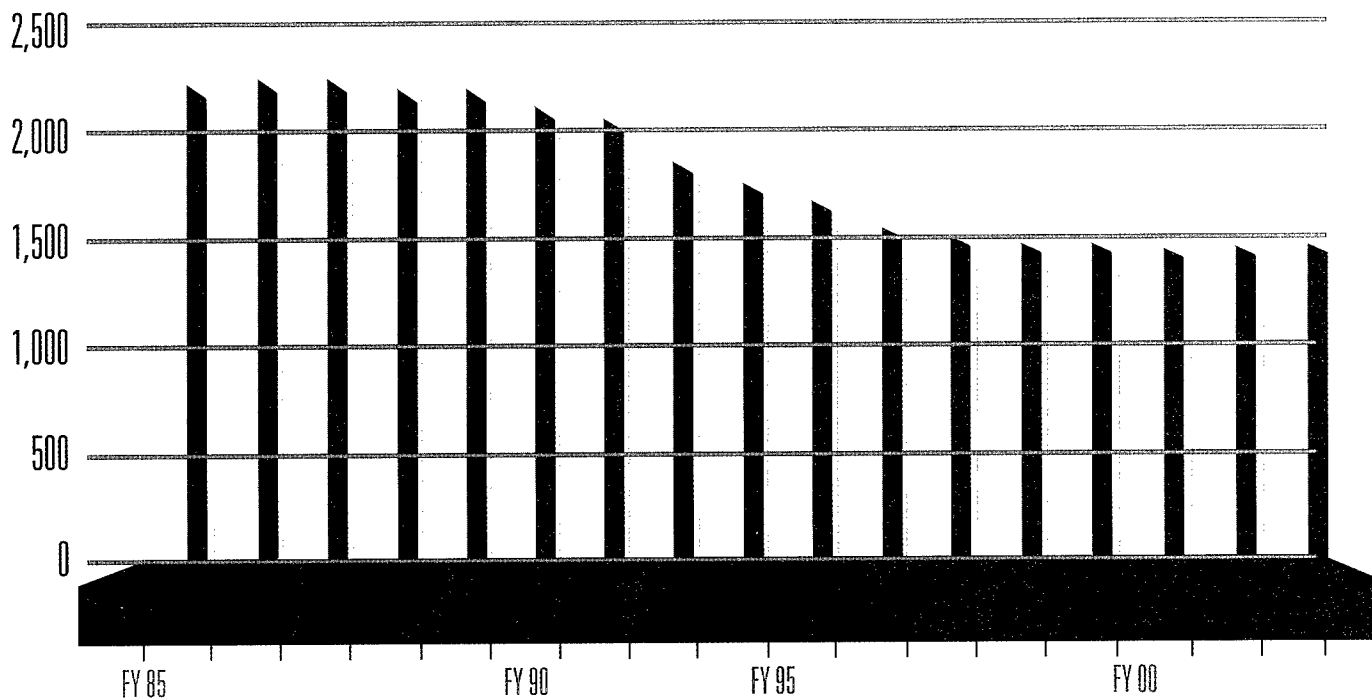
**N**O matter how hard we work on preventive defense, we cannot be sure we will always succeed in preventing new threats from developing. That is why we must deter threats to our security, should they emerge.

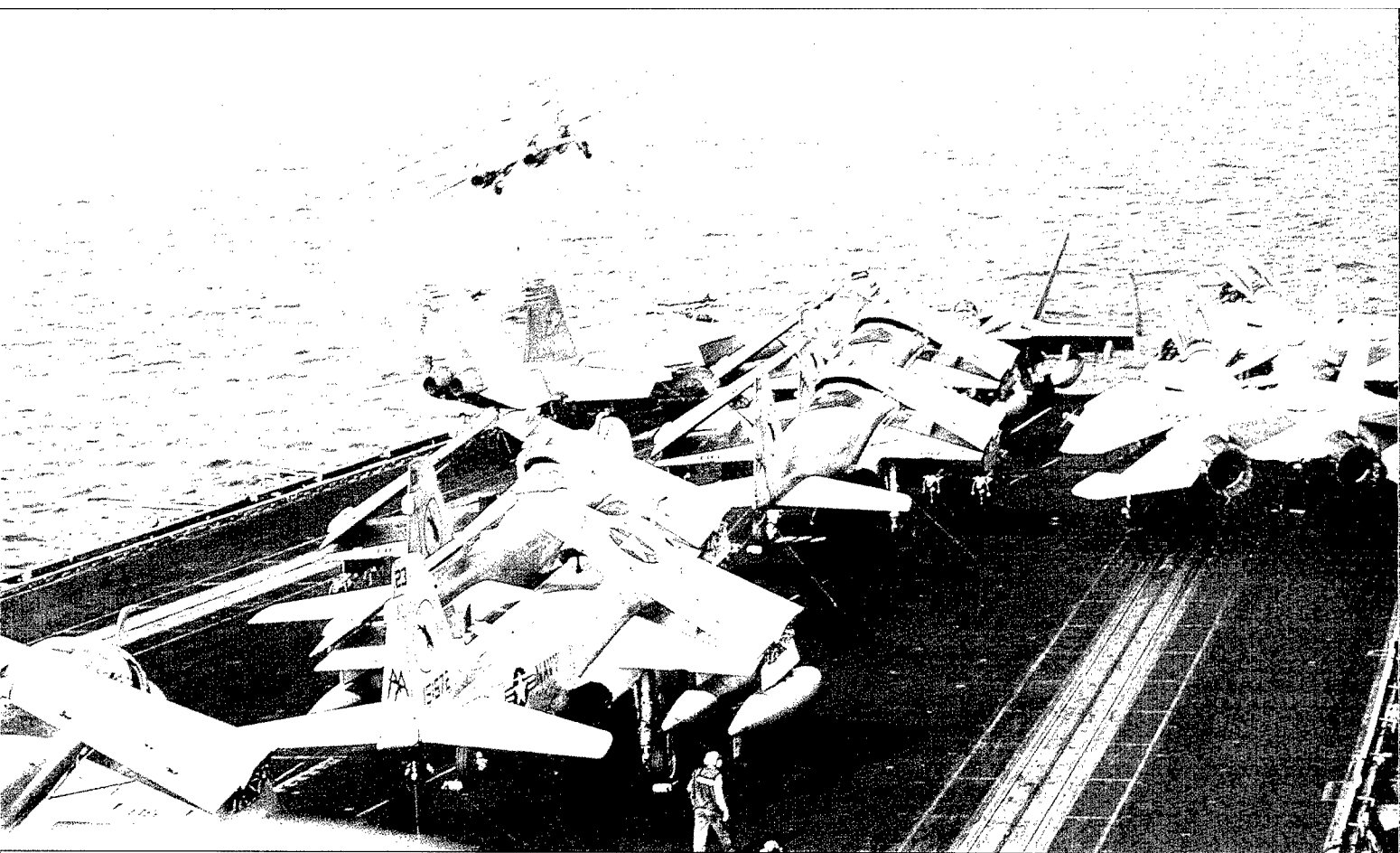
The risk of global conflict today is greatly reduced from the time of the Cold War, but as long as nuclear weapons still exist, some risk of global conflict remains. The United States therefore retains a small but highly effective nuclear force as a deterrent. These forces (as well as those of Russia) have been reduced significantly, consistent with the START I treaty, and will be further reduced when Russia ratifies the START II treaty.

Similarly, to deter regional conflict we must maintain strong, ready, forward-deployed, conventionally armed forces, make their presence felt and demonstrate the will to use them. While the diminished threat of global conflict has allowed us to reduce U.S. force structure accordingly, the increased risk of regional conflict places sharp limits on how far those reductions can go.

(in thousands)

## MILITARY PERSONNEL END STRENGTHS





Operation Desert Storm in 1991 proved the United States was ready, willing and able to fight a regional aggressor halfway around the world. The U.S. military has seen its ranks and budget cut in the past five years, but it remains ready to fight and win two nearly simultaneous major regional conflicts.

**T**ODAY, the size and composition of American military forces, consistent with the Bottom-up Review conducted in 1993, are based on the need to deter and, if necessary, fight and win in concert with regional allies, two major regional conflicts nearly simultaneously. The guiding principle is the United States will fight to win and to win decisively, quickly and with minimum casualties.

This principle requires us to maintain a force structure today of about 1.5 million active duty personnel and 900,000 reserve component personnel. These forces are organized into 10 active duty Army divisions and 15 Army National Guard enhanced readiness brigades; 20 Air Force wings, including seven reserve wings; 360 Navy ships, including 12 aircraft carriers; and four Marine divisions, including one reserve division.

Equally important to the size of the force is the requirement to maintain a commanding overseas presence, including 100,000 troops in Europe and about the same number in the Pacific, all in a high state of readiness. Our overseas presence not only deters aggression, it also improves coalition effectiveness if deterrence fails, demon-

strates U.S. security commitments, provides initial crisis response capability and underwrites regional stability.

Strong deterrence also requires us to maintain pre-positioned equipment in the Persian Gulf, the Indian Ocean, Korea and Europe and carrier task forces and Marine expeditionary units afloat, able to move quickly to any crisis point.

**F**INALLY, it requires we keep our forces in the United States in a high state of readiness and have the lift capability to transport them and their equipment rapidly to distant theaters. Having the capability to deploy forces quickly to a crisis decreases the likelihood they will actually have to be used and increases their chances for success if force is necessary.

Our planning involves the extensive use of well-trained reserve component forces. Fifteen Army National Guard brigades and many combat support reserve component units will be maintained at a high readiness level to allow their use at early stages in military operations. The rest are intended to be used as follow-on forces available for later deployment in longer-term contingencies.

Those are the requirements that go with



the ability to fight and win in concert with regional allies two nearly simultaneous major regional conflicts. U.S. forces today meet these requirements.

**W**HILE being able to fight and win is essential, that ability alone cannot deter conflict. Deterrence stems from military capability coupled with political will, both real and perceived; credibility is as important to deterrence as military capability. For example, deterrence of regional conflict failed when North Korea doubted American political will in 1950. Some World War II veterans had to turn around and return to the Far East to reassert that political will — at a very high price. Today, American forces in the region serve as a visible reminder of our willingness and capability to help defend our South Korean allies.

In 1990, deterrence of regional conflict failed again when Iraq doubted our political will to defend Kuwait and Saudi Arabia. We demonstrated that will through a costly but highly successful war to evict Iraqi forces from Kuwait.

In contrast, deterrence succeeded in October 1994 when Iraq moved forces down to the Kuwaiti border a second time. This time, the United States demonstrated political will by rapidly deploying additional U.S. military forces to the Persian Gulf.

Within a few days after the Iraqi forces had moved to the Kuwaiti border, we had deployed 200 fighter aircraft, an armored brigade, a Marine expeditionary unit and a carrier battle group to the theater. These forces created in a few days a presence that took many weeks to assemble in 1990.

Faced with that presence and the lessons of Desert Storm, Iraqi President Saddam Hussein sent his brigades back to their barracks. We achieved deterrence through the capability to rapidly build up a highly capable force, coupled with the credible political will to use that force.

Deterrence can sometimes fail, however, particularly against an irrational or desperate adversary, so the United States must be prepared to actually use military force. Use of force is the method of last resort for defending our national interests and requires a careful balancing of those interests against the risks and costs involved. The key criteria are whether the risks at stake are vital, important or humanitarian.

If prevention and deterrence fail, vital U.S. interests can be at risk when the United States or an ally is threatened by conventional military force, by economic strangulation or by the threat of weapons of mass destruction. These threats to vital interests are most likely to arise in a regional conflict and by definition may require military intervention.

In contrast, military intervention in ethnic conflicts or civil wars, where we have important, but rarely vital interests at stake, requires balancing those interests against the risks and costs involved.

In general, any U.S. intervention will be undertaken only after thorough consideration of the following critical factors: whether the intervention advances U.S. interests; whether the intervention is likely to accomplish U.S. objectives; whether the risks and costs are commensurate with the U.S. interests at stake; and whether all other means of achieving U.S. objectives have been exhausted.

**T**HE United States chose not to intervene as a ground combatant in the war in Bosnia and Herzegovina because the risks and costs were too high when weighed against our interests. This decision was made by two successive administrations for essentially the same reasons. However, after successful American diplomacy and NATO military force reshaped the situation and the risks, we made the decision to participate, not as a combatant, but in the NATO peace implementation force.

The bottom line is the United States is a global power with global interests, and as President Clinton has said, problems that start beyond our borders can quickly become problems within them. American leadership, global presence and strong armed forces can help keep localized problems from becoming our problems and protect us if they do.

At the same time, there are limits to what the United States and its forces can or must do about problems around the globe. As the president said:

“America cannot and must not be the world’s policeman. We cannot stop war for all time, but we can stop some wars. We cannot save all women and children, but we can save many of them. We can’t do everything, but we must do what we can. There are times and places where our leadership can mean the difference between peace and

war, and where we can defend our fundamental values as a people and serve our most basic, strategic interests."

**F**INALLY, in some instances, the United States may act out of humanitarian concern, even in the absence of a direct threat to U.S. national interests. Agencies and programs other than the U.S. armed forces are generally the best tools for addressing humanitarian crises, but military forces may be appropriate in certain, specific situations, such as when:

- A humanitarian crisis dwarfs the ability of civilian agencies to respond;

- The need for relief is urgent, and only the military can jump-start a response;

- The response requires resources unique to the military;

- The risk to American service members is minimal.

A good case in point was America's humanitarian intervention in Rwanda in the summer of 1994 to stop the cholera epidemic, which was killing 5,000 Rwandans a day. Only the U.S. military had the ability to rapidly initiate the humanitarian effort to bring clean water, food and medicine to Hutu refugees who had fled from Rwanda in the wake of a catastrophic tribal conflict, and

U.S. forces carried out their mission successfully, at little cost, with little risk, and then quickly withdrew.

Implementing our defense strategy involves literally hundreds of programs. Highlighted are some key ways we are implementing our approach of prevent, deter and defeat.

During the Cold War, the Soviet nuclear physicist Andrei Sakharov said preventing a nuclear holocaust must be the "absolute priority" of mankind. This is still true.

**T**ODAY, a primary means for accomplishing this goal is the continued dismantlement of nuclear warheads, bombers and ballistic missile launchers. The touchstone of our preventive activities in this area is the Cooperative Threat Reduction program, which helps expedite the START I treaty reductions in the states of the former Soviet Union.

This program contributes to some remarkable accomplishments: over 4,000 nuclear warheads and more than 700 bombers and ballistic missile launchers dismantled, a nuclear-free Kazakstan, a Ukraine and Belarus on the way to becoming nuclear free, and successful removal of nuclear material from Kazakstan through

U.S. Marines of the 11th Marine Expeditionary Unit help American refugees off the Air Force C-141 transport that flew them to safety during Operation Distant Runner in April 1994. The civilians, caught in a bloody civil war in Rwanda, Africa, fled overland to neighboring Burundi, where U.S. military teams waited to evacuate them to Nairobi, Kenya. Since 1990, American service members have engaged in more than four dozen similar humanitarian, peacekeeping and military operations.



Project Sapphire.

**I**T is also vitally important that we prevent potential regional conflicts from assuming a nuclear aspect. That is why we have worked hard to help implement the framework agreement that has frozen North Korea's dangerous nuclear program and when fully implemented will eliminate the program.

Efforts to reduce the nuclear threat also include sanctions on Iraq and Iran and indefinite extensions without conditions of the historic nuclear Nonproliferation Treaty. Such diplomatic measures do not stand in isolation. They are an integral, crucial part of the U.S. approach to preventing conflict.

Despite our best efforts to reduce the danger of weapons of mass destruction, it is still possible these terrible weapons could again threaten America and its forces and allies. That is why it is important for the United States to maintain a small but effective nuclear force.

This deterrent hedge is not incompatible with significant reductions in American nuclear forces nor is it incompatible with American support for the nuclear Nonproliferation Treaty and a comprehensive ban on nuclear testing. This nuclear hedge strategy is complemented by a program to develop a ballistic missile defense system that could be deployed to protect the continental United States from limited attacks should a strategic threat to our nation arise from intercontinental ballistic missiles in the hands of hostile rogue states.

Another way we hedge against potential threats is by maintaining selected critical and irreplaceable elements of the defense industrial base, such as shipyards that build nuclear submarines. With the end of the Cold War and the defense downsizing, the need for large numbers of major new ships, aircraft and armored vehicles has declined significantly. Allowing these defense-unique production facilities to shut down or disappear completely, however, would curtail the nation's ability to modernize or prepare for new threats down the road. Therefore, the department will selectively procure certain major systems, such as the Navy's Seawolf fast-attack submarine, in limited quantities to keep their production capabilities warm until we are ready to build the next-generation nuclear submarines.

Maintaining strong alliances with our

traditional allies in Europe and the Asia-Pacific region, maintaining constructive relations with Russia and China and reaching out to new democracies and friends are key elements of our defense posture.

In Europe, NATO is the foundation of our security strategy, and we continue to play a leadership role within NATO. There are those who allege that NATO is now obsolete, but in fact, NATO has provided a zone of stability for Western Europe for 40 years, and all 16 members have reaffirmed the importance of the alliance. Indeed, NATO has received requests from new nations wishing to join, to be a part of this zone of stability.

**N**ATO's Partnership for Peace program is already extending a zone of stability eastward across Europe and Central Asia by promoting military cooperation among NATO countries, former members of the Warsaw Pact and other countries in the region. This cooperation takes place at many levels, from frequent meetings between defense ministers to officer exchanges at schools and planning headquarters.

The highlight of Partnership for Peace, though, is the joint exercise program, focusing on peacekeeping training. In August 1995, the United States hosted one of these exercises, Cooperative Nugget, at Fort Polk, La. Such exercises have had a remarkable effect on European security by building confidence, promoting transparency and reducing tensions among nations that have, in many cases, been at odds for long periods of Europe's history. Partnership for Peace is also the pathway to NATO membership for those partners that wish to join the alliance.

In fact, the positive effects of Partnership for Peace resonate far beyond the security sphere. Since political and economic reforms are prerequisites to participation in Partnership for Peace or membership in NATO, many partner nations have accelerated such changes. In addition, many partner nations are starting to see value in actual Partnership for Peace activities, irrespective of whether they lead to NATO membership. The lessons learned and values fostered through the program are intrinsically useful.

Partnership for Peace is one of the most significant institutions of the post-Cold War era. Like the Marshall Plan in the 1940s,

# FY 1996 CONTINGENCY OPERATIONS

## Incremental Costs/Financing

<b>CONTINGENCY OPERATIONS</b>		<b>\$ in millions</b>
Southwest Asia		647.1
Guantanamo Bay		71.7
UN Mission in Haiti		89.4
Jordan Drawdown		51.0
Miscellaneous Other		10.8
Bosnia ( <i>IFOR and related operations</i> )		1,948.1
Total FY 1996 Requirements		2,818.1
<b>FINANCING</b>		
FY 1996 Appropriations		647.1
January 1996 reprogramming ( <i>Inflation savings</i> )		991.0
Supplemental appropriations request		620.0
2nd reprogramming ( <i>Remaining costs at time of submission</i> )		

Partnership for Peace today is creating a network of people and institutions across all of Europe working together to preserve freedom, promote democracy and free markets, and cooperate internationally — all of which are critical to expanding the zone of stability in Europe in our day.

**I**T is critical that this zone of stability in Europe include Russia. Key to this is Russia's active membership in Partnership for Peace, NATO's development of a special security relationship with Russia and Russia's integral involvement in broader European security issues, as in Bosnia and Herzegovina. Open, productive security relations with Russia are an essential element of our approach to advancing security in Europe and ultimately limiting the potential for conflict.

Recognizing that Russia remains a major world power with global interests and a large nuclear arsenal, the United States seeks a pragmatic partnership with Russia whereby we pursue areas of agreement and seek to reduce tensions and misunderstandings in areas where we disagree. Our successful efforts to include a Russian brigade in the U.S. sector of the NATO-led peace implementation force in Bosnia and Herzegovina readily reflect this partnership.

In addition to Cooperative Threat Reduction efforts, such as the Nunn-Lugar Program, we also seek to foster greater openness in the Russian defense establishment and to encourage Russia to participate in global nonproliferation activities and regional confidence-building measures by participating in the U.S.-Russian Commission on Economic and Technological Cooperation.

The commission, established by Vice President Al Gore and Prime Minister Viktor Chernomyrdin in 1993, seeks to build confidence by forging a better economic relationship between the United States and Russia. The Defense Department is part of an interagency effort sponsored by the commission focused on finding, facilitating and helping finance investments in the region by American business enterprises, targeting a wide range of opportunities from defense conversion to space exploration to prefabricated housing. The commission's activities benefit Russia's attempts to achieve a market economy, benefit American companies and benefit American security interests — a triple win!

In the Pacific, the United States and Japan have entered into a new era in our regional relationship as well as in our global partnership. A stronger U.S.-Japanese alliance will continue to provide a safe environment for regional peace and prosperity. Our alliance with South Korea not only serves to deter war on the peninsula, but also is key to stability in the region. These security alliances and the American military presence in the Western Pacific preserve security in the region and are a principal factor in dampening a regional arms race.

We are also fully participating in multilateral security dialogues, such as the Association of Southeast Asian Nations Regional Forum, which help reduce tensions and build confidence so tough problems like the territorial dispute over the Spratly Islands in the South China Sea can be resolved peaceably.

**C**ENTRAL to our efforts to prevent conflict in the Asia-Pacific region is our policy of comprehensive engagement with China, a major power with a nuclear capability. The United States will not ignore China's record on human rights and political repression or its sale and testing of dangerous weapons, but we also will not try to

isolate China over these issues.

We want to see China become a responsible, positive participant in the international arena, and the best way to encourage this is to maintain a vigorous dialogue over a wide range of issues — including security issues — so we can pursue areas of common interests and reduce tensions.

**I**N South Asia, the United States has restarted a bilateral security relationship with Pakistan and begun a new security dialogue with India. These ongoing dialogues can help all three countries focus on areas of common interest, such as international peacekeeping, and could in time provide the confidence necessary to address more difficult problems, such as nuclear proliferation and the long-simmering conflict over Kashmir.

In our own hemisphere, we are witnessing a new era of peace, stability and security. From Point Barrow to Tierra del Fuego, all 34 nations except Cuba have chosen democracy, and economic and political reforms are sweeping the region. This historic development paved the way for the first Defense Ministerial of the Americas last summer, at which delegations from all 34 democracies gathered in Williamsburg, Va., to consider ways to build more trust, confidence and cooperation on security issues throughout the region. Following on the success and progress at Williamsburg, the nations of this hemisphere already are planning for the second Defense Ministerial in Argentina this fall.

Like Partnership for Peace in Europe, Defense Ministerial of the Americas provides an opportunity to build a zone of stability in a region once destabilized by Cold War tensions.

In the Americas, as in Europe, the tools for building stability include joint training and education programs that promote professional, civilian-controlled militaries as well as personal interactions; information-sharing on national military plans, policies and budgets; and confidence-building measures. In Europe, these activities are led by the United States and NATO. In the Americas, they are emerging by consensus and encouraged by the United States. But ultimately the result is the same: more democracy, more cooperation, more peace and more security for the United States.

In each region discussed, the United

States has military-to-military relationships and is conducting joint exercises with a much wider range of countries than ever before. These activities promote trust and enable forces from different countries to operate together more effectively, which is essential given the increasing prevalence of combined operations. In the Gulf War, for example, some 40 countries made military contributions. Nearly three dozen countries are participating in the peacekeeping force in Bosnia and Herzegovina, including many non-NATO countries.

**A**NOTHER important part of preventive defense is our effort to promote democratic civil-military relations. One such program, conducted jointly with the State Department, is the International Military Education and Training program, which has trained half a million foreign officers in the fundamentals of civil-military relations over the last several decades. Similarly, recently established regional training and study centers like the Marshall Center in Germany and the Asia-Pacific Center for Security in Hawaii are designed to promote contacts between regional military officers and civilian defense officials and to foster the principles of civilian control of the military.

No security strategy is better than the forces that carry it out. Today, the United States has forces that are well-trained, well-

## FY 1997 BUDGET REQUEST MAJOR CONTINGENCY OPERATIONS

<b>SOUTHWEST ASIA</b>		<i>\$ in millions</i>
Southern Watch		449.7
Provide Comfort		140.4
Subtotal		590.1
<b>BOSNIA</b>		
IFOR ground operations		474.2
Deny Flight		66.3
Able Sentry ( <i>Macedonia</i> )		1.2
Subtotal		541.7
Total		1,131.8

equipped and, most of all, ready to fight, as their performance over the past year in the Persian Gulf, Haiti and Bosnia and Herzegovina illustrates. The department has maintained this readiness in spite of a drawdown of historic proportions.

**D**RAWDOWNS create turbulence in the force which historically has undermined readiness. Recognizing this history, we have taken unprecedented steps to maintain readiness while reducing our forces in the wake of the Cold War. By the end of 1996, the drawdown will be nearly complete, which means an end to the turbulence.

In the meantime, though, the department continues to maintain near-term readiness at historically high levels through robust funding of the operations and maintenance accounts. This remains the department's top budget priority. Manifesting this priority, the department's fiscal 1995 and 1996 budgets and the 1997 budget request are at historically high levels of O&M funding (normalized to force size).

Medium-term readiness depends on attracting top-quality people and retaining them after they have developed technical and leadership skills. To do so, we must offer not only challenging and rewarding work, but also an appropriate quality of life, a term used to encompass the entire package of compensation and benefits, as well as the work and living environment for military service personnel. Protecting quality of life is not only the right thing to do for the men and women who serve and sacrifice for their country, it is also critical to preserving medium-term readiness.

Last year, President Clinton approved an increase in defense spending of \$25 billion over six years largely aimed at improving the quality of military life. This includes a commitment to ensure military personnel receive the full pay raise authorized by law through the end of the century. It is also directed at extensive improvements in military quality of life programs, including housing, a key concern to service families.

This past year, a distinguished panel led by former Army Secretary John Marsh looked beyond existing DoD efforts to identify quality of life problems and suggest high-leverage, affordable solutions. The panel concentrated on three major areas: housing, personnel tempo, and community and family services. Action on the panel's

recommendations is being incorporated into the department's overall effort to preserve quality of life.

To ensure military readiness in the long term requires the department to modernize the armed forces with new systems and upgrades to existing systems to maintain America's technological advantage on the battlefield. For the past five years, the department has taken advantage of the drawdown and slowed modernization to fully fund those expenditures that guarantee near-term readiness — spare parts, training and maintenance.

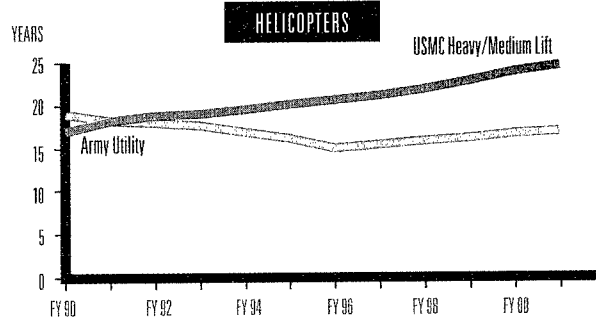
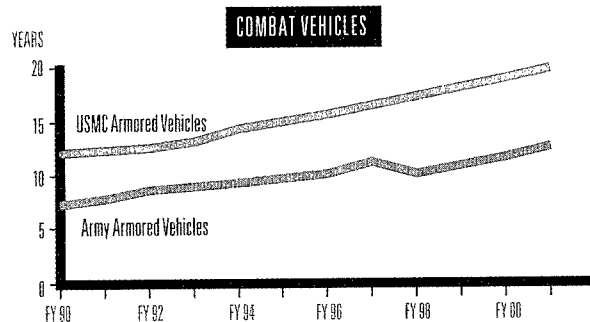
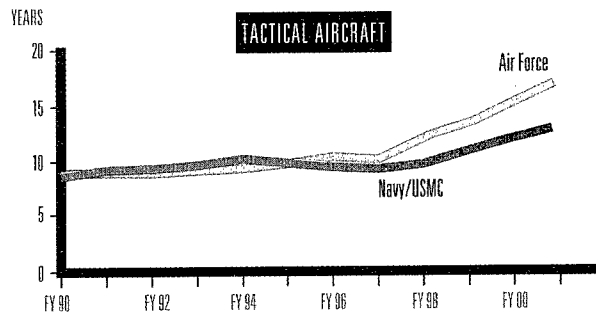
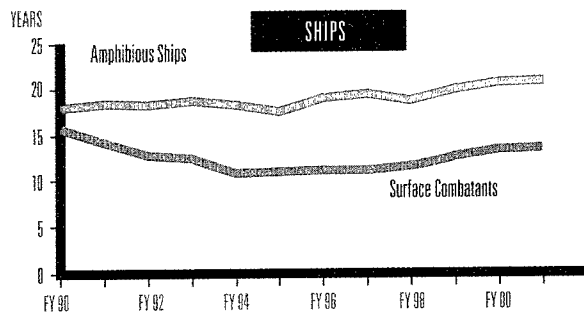
As a result, the modernization account in fiscal 1997 will be the lowest in many years, about one-third of what it was in 1985. At the same time, the average age of our military equipment has not increased, because as the forces were drawn down, older equipment was weeded out. But now that the drawdown is nearly over, the modernization reprieve from aging is nearly over, too.

So beginning in fiscal 1997, the department is planning a modernization ramp-up, which will be critical to the readiness of the forces in the next century. By the year 2001, funding to procure equipment to modernize our forces will increase to \$60.1 billion in current dollars — over 40 percent higher than in the 1997 budget.

This five-year plan will focus on building a ready, flexible and responsive force for a changing security environment. The force will continue to maintain our technological superiority on the battlefield by seizing on the advances in information-age technology, such as advanced sensors, computers and communication systems. At the same time, the modernization program will focus on bread-and-butter needs, such as airlift and sealift, and the everyday equipment ground forces need in the field, such as tactical communications gear, trucks and armored personnel carriers.

**T**HIS five-year modernization plan is based on three assumptions. First, the defense budget topline will stop its decline in fiscal 1997 and begin to rise again, as proposed in the president's five-year budget. Second, the department will achieve significant savings from infrastructure reductions, most importantly from base closings. The third assumption of our modernization program is the department will achieve

## AVERAGE AGES OF SELECTED DOD WEAPONS



significant savings by outsourcing many support activities and overhauling the defense acquisition system.

**T**HE base realignment and closure process is directly linked to modernization and long-term readiness. As we downsize the military force, we must also reduce our Cold War infrastructure. Our efforts to manage this process have been aimed at saving money while ensuring that troops have the training and equipment they need to be ready in the future. While the department has made significant progress in base closings, many base realignment and closure recommendations have not yet been implemented, and an imbalance between force structure and infrastructure remains.

Until we fully execute the base realignment and closure process, money will be tied up in nonperforming real estate, draining funds from our modernization efforts and other programs. While base closing initially costs money — the 1996 budget included \$4 billion for base closing costs — there will be significant savings in the future. In the fiscal 1999 budget, the department projects \$6 billion in savings from closing the bases, thus allowing a \$10 billion swing in savings. These and future savings from base closing will be devoted to modernization.

Completing the base realignment and

closure process quickly is not only key to saving money, it also is the right thing to do for the communities involved. The department is helping these communities find imaginative ways to put the excess defense property to productive use as quickly as possible.

When base closure is done right, it can leave communities better off, with a more diverse economy and more jobs. The key is early community involvement and planning. For example, when Louisiana's England Air Force Base was slated for closure, the Alexandria Chamber of Commerce worked with the Air Force to develop a base reuse plan. Months before the base did close, small business enterprises had already signed leases, resulting today in hundreds of new jobs for Alexandria.

**O**VER the past two years, the department has undertaken the most revolutionary changes in its acquisition system in 50 years and is looking for ways to further reform the system through privatization.

The department discarded the system of military specifications, or milspecs, which spelled out how contractors must design and produce military systems, supplies and services. In its place, the department will use commercial and performance standards. These will call for the highest quality





**William J. Perry**

*Perry became secretary of defense Feb. 3, 1994. He had been deputy secretary since March 11, 1993. Prior to that, Perry was a Stanford engineering professor and co-director of the university's Center for International Security and Arms Control. He served during the Carter administration as under secretary of defense for research and engineering. In the private sector, he has been an executive vice president of Hambrecht & Quist Inc., an investment banking firm specializing in high-technology companies; director of Electronic Defense Laboratories at Sylvania/General Telephone; and a founder and president of ESL, Inc., a defense-oriented electronics and computer firm. Perry holds bachelor's and master's degrees from Stanford and a mathematics doctorate from The Pennsylvania State University.*

standards available in the commercial market or if there are no relevant commercial standards, will use functional specifications which describe how the equipment is to perform — and challenge suppliers to meet that standard any way they want.

**T**HE second major change in the defense acquisition system began on Oct. 1, 1995, when the new federal acquisition streamlining regulations were published. These regulations, in effect, will allow the Defense Department to buy from the commercial marketplace more often and buy more like commercial firms do.

Defense acquisition reform is important not only because it will help pay for the defense modernization program, but also because of a phenomenon called "technology pull." This phrase describes the demand for advanced technology to give the United States battlefield superiority.

Technology pull has its roots in the U.S. military experience in Desert Storm. Before Desert Storm, many U.S. military commanders and outside experts were skeptical of advanced technology applied to combat.

For example, they questioned the concept of the reconnaissance strike forces, developed in the 1970s and deployed in the 1980s. This concept combined stealth aircraft, precision-guided munitions and advanced surveillance technology to offset superior numbers of Soviet forces. But there was great concern such advanced technology was too delicate or would not work in the fog of war. But in Desert Storm, the same reconnaissance strike forces crushed the Iraqi military force with very low U.S. losses.

Skeptics became believers. Advanced technology proved itself, and military commanders are finding myriad uses for it — not just smart weapons, but also smart logistics, smart intelligence and smart communications. Military commanders are revising their doctrine and tactics to take advantage of this technology, and they want to pull it faster into their war planning.

The key technology they want is information technology, and it is being developed at a breathtaking pace, but not by the Defense Department. It is being developed by commercial computer and telecommunications companies, defense-commercial technology firms, and small high-tech businesses and universities. The department cannot pull this technology from these sources without

acquisition reform, because the current system limits access to these sources either directly by throwing up regulatory barriers or indirectly by slowing the ability to purchase and employ new generations of technology in a timely way.

The department not only needs to do more business with commercial industry, it also needs to act more like commercial industry.

There are numerous examples of private sector companies turning to outside suppliers for a wide variety of specific, noncore goods and services. By focusing on core competencies, they have reduced their costs by lowering overhead and improved their performance.

**M**AJOR opportunities exist for the department to operate more efficiently and effectively by turning over to the private sector many noncore activities. For example, private sector companies are already under contract to perform some commercial activities on bases around the world. This type of outsourcing can be expanded.

To implement this strategy, the department has been systematically examining opportunities for privatizing, as well as reviewing both institutional and statutory obstacles to its full utilization. Work groups engaged in these efforts have provided reports on how privatization can be better used to lower DoD costs while enhancing its effectiveness.

In the uncertainty that has followed the Cold War, the United States has not only the opportunity, but also the responsibility to help ensure a safer world for generations of Americans. President Clinton has said, "As the world's greatest power, we have an obligation to lead and, at times when our interests and our values are sufficiently at stake, to act."

The Department of Defense is supporting American leadership in this new era. As the department completes the transition to a post-Cold War military force, it has undertaken policies and programs to prevent threats to our security from emerging and to maintain well-trained, ready forces able to deter or respond quickly to a range of potential threats and seize opportunities.

The world has changed dramatically over the past few years, but one thing remains constant: A strong military force made up of the finest American men and women is the nation's best insurance policy. ▼



## ***The Chairman on Modernization***

***An exclusive interview with  
DEFENSE 96 magazine***

***Army Gen. John M. Shalikashvili, the chairman of the Joint Chiefs of Staff, has championed quality of life initiatives to keep good people in the military. In this exclusive interview with "Defense," he says the Department of Defense now needs to pay the same attention to modernization.***

*Where are we in regards to modernization?*

**N**ow that the drawdown is nearly completed, I think it's time to turn toward modernization and toward replacing equipment. Some of it is getting old or is getting worn out because of extensive use.

We now need to concentrate to ensure that our acquisition accounts that handle both a prudent modernization program and the replacement of equipment reach approximately \$60 billion. We're not there at all yet. We're probably around \$40 billion this year. So it is time now to ramp that up.

I think we can go a long way in that direction and stay within the same top line, but we have to learn to do things smarter, we have to husband all of the savings we can out of turning back bases and facilities, we need to move on with acquisition reform and with privatization and finally through jointness. We can ensure that if we do things smarter, we can eliminate unnecessary duplication.

*So that fits in with Deputy Secretary of Defense John White's push toward privatization and outsourcing?*

**A**bsolutely, [Deputy] Secretary White and I, Secretary [of Defense William J.] Perry and the vice chairman [Air Force Gen.

Joseph Ralston] have been identifying those elements we need to work to increase our acquisition account. What he's doing is very much in support of that overall effort.

*Last year, Secretary Perry said the fiscal 1997 budget would start to pick up modernization. Yet when the budget came out, modernization actually dropped. Does this put us behind the power curve?*

**A** little bit, yes. But neither Secretary Perry nor I are in the business of printing money, so we have to work with what we get.

I would have liked to have seen an increase in our modernization and acquisition accounts sooner rather than later. Right now, we probably won't reach \$60 billion until 2000 or 2001. So that's about two or three years later than I would have liked to have seen.

That's manageable as long as we all recognize that we need to reach that \$60 billion and all work toward that. This is not something we can afford to slough off and allow to slide further and further to the future. This is a serious issue, and we need to get on it. Secretary Perry and [Deputy] Secretary White and all of us are committed to doing that.

*Is there any danger from this?*

**I** don't think so. It will mean the old truck will just get two or three years older. It doesn't mean it puts us in any particular danger. But you have to remember modernization and replacing equipment are tomorrow's readiness. The more you put off when we reach the \$60 billion amount, the more we're putting off tomorrow's readiness. I just don't like to see that, but some things are unavoidable.

*An exclusive interview  
with Chairman of the Joint Chiefs  
of Staff, Gen. John M. Shalikashvili,  
on modernization.*

*Old M-113 armored personnel carriers in the late 1970s had the reputation for needing constant maintenance.*

**A**bsolutely. Let's assume you have an M-113 that's old. You're spending more time in maintenance, you're spending more money in maintenance. So in the long run, it makes economic sense to replace it, but it also is necessary so the troops, should they be asked to go into combat, don't go into combat in overage equipment.

*Some service members express fear any improvements or funds that go into modernization will come at the expense of quality of life initiatives. Is this true?*

**N**ot at all. I think Secretary Perry has such a strong commitment to providing for the quality of life for the men and women who wear America's uniform and for their families, I don't think that's in the cards at all. I think Congress equally is committed to providing the resources for quality of life, and certainly I am. I don't think there is a basis for that fear.

The opposite has been happening. To keep readiness high, which is the correct thing to do, to put money into quality of life, we have not been buying the equipment at the rate we should have been buying to replace that which is worn out: the trucks, the tents, the tent pegs, the webbing people wear. All that stuff needs to be replaced. So the opposite has been happening.

Now what we need to do is keep the same priority on readiness and the same priority on quality of life, but begin to shift more money into modernization.

*Some people say modernization is a quality of life issue on its own.*

**O**h, sure. I think one of the greatest quality of life aspects is to provide the man or woman the latest and most up-to-date piece of equipment.

Traditionally, we have thought of quality of life issues as those that have to do with the workplace, where you live, where you

send your kids to school, where you do your shopping, athletic facilities for our service members. Those are the sort of programs traditionally thought of.

I think of quality of life as pay, medical care, retirement. These are very important quality of life issues that we need to preserve and ensure we do not reach into those programs to pay for some other account.

*Some critics say there is no power on Earth that can challenge the United States, and they doubt any power will arise in the next 20 years that can. They say DoD not only doesn't need extra money, but it doesn't need all the money already budgeted. How do you respond to those critics?*

**I** think they are absolutely wrong. The United States has global interests and global responsibilities. We're very different from other nations. We do in fact have a leadership responsibility in this world.

We are not good at judging when we'll fight the next time and where it is going to happen. If you look back into our history, we've never been very good at that. And so we must be prepared for the unexpected.

Another thing I must tell you is after every conflict we have reduced the size of our military and at the same time reduced our readiness. We have not studied our history well.

For those reasons alone, we must maintain a momentum in our modernization and in replacement of our equipment.

But having said that, we have to be careful that our emphasis isn't all on equipment. What has made us great as a military in the past and what is going to make us great in the future are the people who operate the equipment — the people who man the weapon systems and the people who fix those weapon systems.

So while we have to ensure we put emphasis on modernizing the force and replacing that which is worn out, we have to put an equal if not greater emphasis on the people who make up this military of ours. They are really a national treasure, and that gets back to ensuring quality of life for them and their families is a priority, that we don't



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Class

Stamora  
pair of bombs across  
flight deck of the USS  
George Washington  
during an April 1996  
Operation Southern  
Watch training mission in  
the Arabian Gulf.  
Southern Watch is the  
U.S. and coalition  
enforcement of a no-fly  
zone over southern Iraq.

*An exclusive interview  
with Chairman of the Joint Chiefs  
of Staff, Gen. John M. Shalikashvili,  
on modernization.*



**Gen. John M. Shalikashvili, USA**

Shalikashvili assumed duties as the 13th chairman of the Joint Chiefs of Staff on Oct. 25, 1993. Prior to this, he had been supreme allied commander Europe, and commander in chief of U.S. European Command since June 23, 1992. Drafted in 1958, he earned a commission through Officer Candidate School in 1959. He has served in a variety of command and staff positions in Alaska, the continental United States, Germany, Vietnam and Korea. Other recent assignments include deputy commander in chief, U.S. Army Europe and Seventh Army; commander, Operation Provide Comfort, the Kurdish relief operation in Northern Iraq; and assistant to the chairman. Shalikashvili holds a bachelor's degree from Bradley University, Peoria, Ill., and a master's from George Washington University, Washington, D.C. His decorations include the Defense Distinguished Service Medal, Distinguished Service Medal and Bronze Star Medal with valor device.

tamper with their benefits or their compensation.

Those who want to find billpayers within the military are gambling with the future of this country, and they must be very, very careful.

*Land mines are a hot topic now. What does the current discussion about mines mean to U.S. service members?*

**I**t's an important discussion. You cannot be callous to the tragedy ongoing worldwide, the tragedy brought about by nations and warring factions that totally irresponsibly use anti-personnel mines. So every year, hundreds of thousands of children, women and men — innocent civilians — lose their lives or their limbs because of those mines that have been left there and will still be there years later. You cannot brush that aside.

The United States has a responsibility to take a leadership position. On the one hand, you deal responsibly with this humanitarian crisis we are facing. On the other hand, you are mindful that mines serve a purpose to protect the force, serve to support economy of force. The answer is not to go overboard one way, but to have a balanced view, a balanced approach to deal with mines in such a way that you help bring an end to this tragedy and still provide prudent protection for the force.

*Would that be the push toward detectable mines and mines that self-destruct after a set time?*

**C**ertainly, there are lots of mines out there. There are mines that are very destructive in a sense that once they are implanted they stay there for God knows how long. Some of them are in fact made out of plastics, so they are not detectable by the normal mine detectors. They are probably the ones that cause the most damage.

On the other side, you have mines the United States has been investing in for some years — those that self-destruct. There is a timer, you set it, at the end of a period of time it will just detonate. So it will not be

just lying around. We need to treat those mines differently. But it is a complex issue, and we must find a responsible answer to this dilemma.

*When you were at Whidbey Island Naval Air Station, Wash., recently, you visited an EA-6B Prowler involved with joint training. Can you describe that and were you pleased with it?*

**I**went out to see where the Navy is now training and organizing squadrons of EA-6B Prowlers — they are electronic warfare aircraft. The Joint Chiefs some time ago decided we should go to a single airplane to perform that mission and not have that mission in a different airplane in the Air Force, Navy and whatnot.

I wanted to go and see how that was going. I was extremely pleased because when they took me up to one airplane, the pilot was a Navy officer, his copilot was a Marine, and sitting in the back as the electronic warfare officer was an Air Force officer. They thought it was very natural. The whole operation worked beautifully, and I think this is the kind of jointness we need to move to because it provides us a savings, it brings us all closer together to one team, one fight. I was very proud to see what was going on out there.

I think that I am prepared to look at other functional areas to see if we can move in that direction as well. Very, very good to see that.

*Any ideas what these functional areas may be?*

**I** think there are issues from strategic transportation to lots of other areas. We just have to be unafraid to look and see. We also need to be careful we do not apply this kind of principle to areas where it doesn't apply. Just because it works here doesn't mean it will work everywhere.

But I do believe there are other areas where this could be applied to increase efficiency, combat capability and, at the same time, drive savings. ▼

# OUTSOURCING DEFENSE DoD DOLLARS

THE UNITED STATES today no longer faces a long and protracted conflict with a rival superpower. Instead, we must be prepared to meet diverse and sometimes unanticipated crises that require use of military force. We have tailored our forces to be capable of fighting and winning two nearly simultaneous regional conflicts.

BY JOHN P. WHITE

*Deputy Secretary of Defense*

These conflicts are likely to be "come as you are" wars. We will require a ready force, rapid mobility, tailored and flexible maintenance support and greater reliance on private-sector suppliers.

The U.S. military force today is the best in the world. Though 30 percent smaller than it was in the mid-1980s, it is highly motivated, well-trained, well-equipped and ready for any contingency. DoD's budget is about 60 percent lower in real terms than its peak in 1985. The budget Defense Secretary William Perry presented in March recommends spending \$243 billion in fiscal 1997 with increases in that amount over the next five years.

The five-year program reflected in that budget clearly reflects the department's three highest priorities: readiness, quality of life and modernization.

Based on a  
prepared statement  
to the Readiness  
Subcommittee, Senate  
Armed Services  
Committee,  
April 17, 1996

Readiness has been our top priority. Recommended funding levels for operations and maintenance accounts that support readiness reflect this emphasis. As a result, U.S. forces today remain ready and prepared to defeat any adversary and perform missions required to meet our national security objectives. Our program is designed to keep it that way.

**R**EADINESS depends on attracting top quality people and retaining them after they have developed technical and leadership skills. To do so, DoD must offer not only challenging and rewarding work,

but also an appropriate quality of life that encompasses the entire package of compensation, benefits, and work and living environments for military service personnel.

U.S. armed forces are the best equipped in the world, and we have been able to maintain that status even as the department's overall budget dropped over the

past 10 years. During that period, fewer resources were allocated to the purchase of new equipment. However, this reduction in the procurement budget came at little risk to our fighting forces. Because older equipment was discarded and newer equipment was redistributed as forces drew down, the average age of our military equipment did not increase.

This reprieve is coming to an end, and increased funding for new equipment is required. Our five-year program for fiscal 1997-2001 allocates the funds necessary to carry out a robust modernization program. In fiscal 1997, it allocates \$38.9 billion for procurement and recommends that figure increase 40 percent to \$60.1 billion by fiscal 2001, a total of \$252 billion over the Future Years Defense Program. This funding level will allow the department to acquire emerging new technologies that will dramatically increase our military capabilities and retain our forces' technological superiority far into the future.

To ensure we can meet our goals of maintaining readiness and increasing funding for modernization, we must care-

fully examine our internal operations and support activities to determine where we can lower costs and improve performance.

This effort requires we undertake management reforms that improve our efficiency and effectiveness, while assuring we are able to meet the diverse and uncertain challenges that will confront our nation in the 21st century.

That process, of course, is already well under way.

Through the base closure and realignment process, the department has significantly reduced infrastructure costs. Fiscal 1997 marks the crossover year when the savings from base realignments and closures exceed the costs required to close bases. Over the five-year program submitted to Congress in February, base realignment and closure will generate net savings of \$17.8 billion. DoD estimates the results of the four rounds of base closures and realignments will produce annual savings of about \$5.5 billion when fully implemented.

Second, the department has undertaken a vigorous reform of the acquisition process. We are implementing the changes authorized by the Federal Acquisition Streamlining Act of 1994 and Federal Acquisition Reform Act of 1996. In addition, we recently approved DoD Directive 5000.1 and DoD Regulation 5000.2, making significant changes to DoD's procurement of goods and services. These initiatives, now in place, are beginning to show results and will lead to substantial efficiencies and savings in the future.

**T**O complement those efforts, the department has begun a broad, systematic review of its support operations to determine where we can improve overall performance at lower cost. This initiative, known variously as outsourcing, privatization and business re-engineering, offers significant opportunities to generate much of the savings necessary for modernization and readiness.

Outsourcing involves the transfer of a function previously performed in-house to an outside provider. Privatization is a subset of outsourcing that involves transfer or sale of government assets to the private sector. Business re-engineering represents redesign of both management and work processes and may involve outsourcing and privatization.

The benefits of outsourcing and competi-

WE MUST CAREFULLY EXAMINE  
OUR INTERNAL OPERATIONS AND  
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AND IMPROVE PERFORMANCE.

tion are apparent every day in our national economy. They are not theoretical or based on uncertain assumptions. Over the past two decades, competitive forces in the global marketplace have driven companies to drive down costs and improve performance.

**T**O accomplish these goals, the most successful American firms have restructured their internal operations — to focus on their core capabilities and outsource support operations. Companies report outsourcing has enabled their senior managers to focus on their core tasks, improve service quality, responsiveness and agility, obtain access to new technologies, employ more efficient business practices and lower their costs.

Entire new industries — and companies — have grown to meet this demand for specialized services across a range of functions: aircraft and ship maintenance, inventory management, accounting and finance, internal audit, data center operations, software maintenance, computer network support, applications development, telecommunications, transportation services, facility management and benefits administration. In 1996, these service industries will generate an estimated \$100 billion in sales.

Surveys performed by a range of organizations all document the trend to more outsourcing. For example, a 1994 study by Pitney Bowes Management Services found 77 of 100 Fortune 500 firms surveyed outsourced some aspect of their business support services.

The experiences of individual companies further illustrate the prevalence of outsourcing in the private sector. Canon guarantees photocopier replacement within 24 hours, but it outsources the delivery of this service. Avis manages its rental car reservations with one of the largest data processing systems in the world, but it outsources the data processing of its payroll. Chrysler manufactures engines, transmissions and exterior body skins internally, but outsources the remaining 70 percent of final product content. Similar examples exist in every successful American industry.

Many state and local governments also carry out effective programs to take advantage of the benefits of competition. Chicago, Indianapolis, Los Angeles, Philadelphia, Phoenix and San Francisco, among others, have used competition and outsourcing to improve services and lower costs to their

citizens.

DoD should seek the same benefits of outsourcing enjoyed by the private companies and public institutions that have adopted an outsourcing strategy. Like the private sector, it allows the department to focus on its core competency, improve service quality and responsiveness, reduce costs, obtain access to changing technologies and employ more efficient and effective business practices.

We have the additional obligation of being responsible stewards of the nation's resources allocated to us. It is incumbent upon us to use better business practices to improve our efficiencies to ensure taxpayers get the most value for their hard earned tax dollars. Most important, we must do so in the context of our overarching mission.

Outsourcing introduces several beneficial characteristics into DoD support operations:

- Competitive forces.

Competition drives organizations to improve quality, increase efficiency, reduce costs and better focus on their customers' needs. For DoD, competition can lead to more rapid delivery of better products and services to the warfighter, thereby increasing readiness.

- Flexibility.

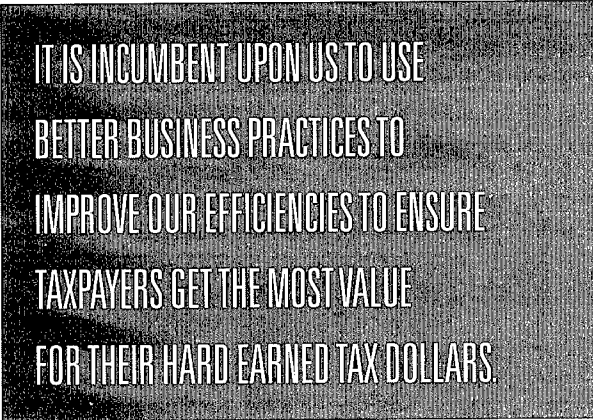
**O**UTSOURCING provides managers with flexibility to determine the appropriate size and composition of the resources needed to complete tasks over time as the situation changes.

- Specialization.

Firms that specialize in specific activities are often able to perform more efficiently and offer higher quality service. In addition, they can generate a relatively larger business volume, which means they typically can operate and maintain state-of-the-art systems more cost-effectively than other firms or the government. Outsourcing to such firms provides a means for the government to take advantage of technologies and systems that government itself cannot acquire or operate economically.

- Better management focus.

In recent years, our nation's most successful



IT IS INCUMBENT UPON US TO USE  
BETTER BUSINESS PRACTICES TO  
IMPROVE OUR EFFICIENCIES TO ENSURE  
TAXPAYERS GET THE MOST VALUE  
FOR THEIR HARD EARNED TAX DOLLARS.



companies have focused intensely on their core competencies — those activities that give them a competitive edge — and outsourced support activities. The activities that have been outsourced remain important to success, but are not at the heart of the organization's mission. Business analysts frequently highlight the fact attention of an organization's leaders is a scarce resource that should be allocated wisely.

**T**HIS is equally true for the Department of Defense. Our core competency is one we can all agree on — conducting military operations — and our focus must always be on doing that better than anyone else.

The central focus of the outsourcing initiative is to maintain and improve our combat effectiveness.

Outsourcing offers the opportunity to achieve that goal by generating savings for modernization, sustaining readiness and improving the quality

and efficiency of support to the warfighters.

To pursue this strategy, I established a comprehensive, ongoing DoD-wide review to identify functions that could be outsourced, analyze them to determine where outsourcing is cost-effective and begin the outsourcing process. The review involves the senior civilian and military leadership in the military departments, defense agencies and the Office of the Secretary of Defense.

Outsourcing, privatization and competition offer the prospect of lowering costs and improving performance across a wide range of support activities which represent a sizable portion of the defense budget. In the current fiscal year, DoD will spend \$93 billion on operations and maintenance functions.

As we embarked on this effort, we developed three criteria as the basis for outsourcing decisions. Activities will be considered for outsourcing or privatization only when they meet these conditions.

First, DoD will not consider outsourcing activities that constitute our core warfighting mission; activities military leadership considers essential to the mission and which would create too much risk if we

were to ask the private sector to do them.

Second, a competitive market must exist for the activity. One criticism of outsourcing has been based upon an alleged lack of competition in the process. DoD can benefit most if market forces exist to drive organizations to improve quality, increase efficiency and reduce costs.

Third, outsourcing the activity must result in best value for the government and therefore the taxpayer. We will conduct a best value analysis in each case, evaluating cost and past performance to ensure potential providers have demonstrated the ability to deliver the service in terms of reliability, timeliness and quality.

Analyses of department activities are still under way. These assessments will likely determine a number of activities are not appropriate candidates for outsourcing or competition. However, the remaining pool of candidates will be sizable, and we expect the potential for increased savings and improved performance to be significant.

These savings will directly benefit modernization. To make this connection clear and to provide appropriate incentives to the military departments, I signed a memorandum on Feb. 26, 1996, stating DoD components will not have their outyear budgets reduced as a result of the savings they create through their initiatives and these savings should be dedicated to modernization.

**O**UTSOURCING, of course, is not new to the Department of Defense. Our own experience demonstrates competition and outsourcing have yielded both significant savings and increased readiness for each military service.

Benefits have accrued across a broad range of functions in each service. A Center for Naval Analyses study of cost comparisons conducted between 1978 and 1994 concluded the department now saves about \$1.5 billion a year. On average, these competitions — about half of which were won by government activities — have reduced annual operating costs of these functions by 31 percent. The consistency of these results highlights the potential benefits to the department from opening a significant portion of the operations and support budget to competition.

The Defense Logistics Agency's Direct Vendor Delivery and Prime Vendor programs illustrate the savings and improve-

DOD CAN BENEFIT MOST IF MARKET  
FORCES DRIVE ORGANIZATIONS  
TO IMPROVE QUALITY, INCREASE  
EFFICIENCY AND REDUCE COSTS.



ments in readiness DoD has achieved through business re-engineering and outsourcing. Under these programs, suppliers deliver products directly to their DoD customers rather than to a DoD warehouse for storage and subsequent distribution.

**T**HE programs have made a tangible contribution to readiness. For example, DoD pharmaceutical customers now receive their requested goods 75 to 90 percent faster (within 24 hours) and 25 to 35 percent cheaper. These programs not only save resources, but do the job better.

There are numerous other examples of outsourcing's beneficial results. The Air Force has successfully outsourced all support functions at Vance Air Force Base, Okla., and several bases overseas. It also contracts for maintenance for the KC-10 and F-117 aircraft and for software in the B-1 and B-2 aircraft. The Army has created a government-industry team to upgrade the Palladin artillery system. The Navy outsources a substantial amount of ship repair — including maintenance on its most advanced surface combatants.

The department's review to date has focused on materiel management, base commercial activities, housing, finance and accounting, education and training, data centers and depot maintenance. These functions represent support activities in which significant, competitive private-sector capabilities exist and with which DoD has extensive experience.

These are a few more specific areas within those functions we feel have potential for significant savings:

❑ **Material Management.**

The material management review is focusing on three areas: disposal operations, distribution depots and inventory control points.

Re-engineering disposal operations will permit placing many government disposal services in the marketplace. These actions are estimated to increase property sales by 50 percent, decrease operating costs by 10 percent and significantly reduce the need for new capital investment.

In 1997, DoD plans to conduct pilot programs to privatize distribution depots at Sacramento, Calif., and San Antonio, Texas. To take advantage of recent state-of-the-art improvements in distribution technology, DoD will encourage contractors at both sites

to re-engineer business processes at the distribution depot; we will then evaluate the experience and results for potential expansion to other sites.

DoD will complete the business case analyses for the armed services' inventory control points — those activities responsible for management of inventoried spare parts, including cataloging, procurement, distribution and disposal. These analyses will enable the department to identify those specific functions where outsourcing could lead to cost savings and improved inventory response times while still ensuring readiness and program management support.

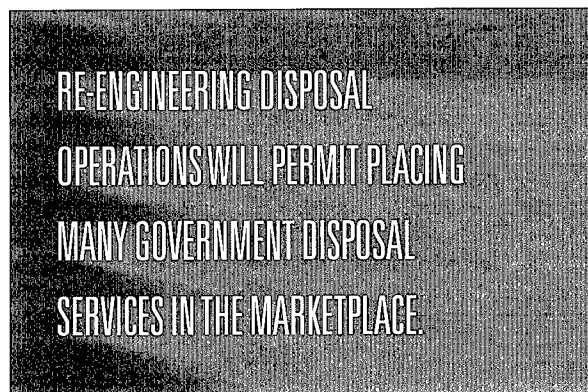
❑ **Base Commercial Activities.**

The department is conducting cost comparison studies encompassing about 150 functions at many different locations. Over the next two years, we plan to expand the number of functions and locations being studied in search of opportunities to lower costs and improve performance.

❑ **Finance and Accounting.**

DoD has initiated a robust campaign to increase use of the International Merchants Purchase Authorization Card, better known as IMPAC. This Visa card is issued by the Rocky Mountain Bank Card System under a contract with the General Services Administration for use throughout the federal government. Greater use of the card, permitted by the Federal Acquisition Streamlining Act, would dramatically reduce acquisition cycle time and the paperwork associated with making and paying for procurement actions — thus reducing costs and improving timeliness.

The department has announced A-76 cost comparisons in three finance and accounting areas: debt claims management; facilities, logistics and administrative support at Defense Finance and Accounting Service centers; and bill paying for the Defense Commissary Agency. The department plans to carry out a pilot program for outsourcing nonappropriated accounting and by Oct. 1, complete a plan for outsourcing civilian pay, as required by the National Defense Authorization Act for 1996.



#### □ Housing.

Congress provided powerful tools in the 1996 Defense Authorization Act that allow the department to join with the private sector to leverage resources and obtain housing faster and more cheaply than we could using the traditional military construction process. These new authorities allow us to guarantee or provide direct loans, enter into limited partnerships, convey property and facilities and provide differential payments to supplement service members' housing allowances.

We have formed the Housing Revitalization Support Office, jointly staffed by the services and the Office of the Secretary of Defense, to serve as the focal point of the knowledge and expertise necessary to maximize their use and serve as a catalyst for the application of these new tools.

#### □ Education and Training.

The high technology demonstrated so vividly in the Gulf War demands highly trained personnel in both operating and supporting roles. That places a premium on extensive, cost effective training. Technology has also changed teaching and training methodologies. The department is evaluating how these technologies affect training requirements and has met with industry to determine if it can adopt successful training management strategies from the private sector.

#### □ Data Centers.

Through the base realignment and closure process, the Defense Information Systems Agency is consolidating its 59 data centers into 16 megacenters. This consolidation is expected to produce net savings of \$474 million from fiscal 1994 to fiscal 1999 and thereafter annual steady state savings of \$208 million. As a result of these consolidations and associated process re-engineering actions, 57 percent of the operating budget for these megacenters for fiscal 1996 will be for contracted services. Further analysis of the department's activities in this area will be submitted to Congress, as requested in the Conference Report on House Resolution 2126, the 1996 DoD Appropriations Act.

#### □ Depot Maintenance.

Depots are a major part of our outsourcing initiative. The department's depot maintenance policy focuses on maintaining required core capabilities in organic facilities. The core concept ensures critical warfighting capabilities remain under the direct and skilled control of warfighters. Core capabilities consist of the facilities, equipment and personnel necessary to ensure a ready and controlled source of technical competence to meet the Joint Chiefs of Staff's contingency scenarios.

IT is important to note not all critical or mission-essential weapon systems and equipment need be maintained in organic depot maintenance facilities. However, core depot maintenance capabilities are necessary to ensure our readiness for military missions. Simply put, core represents the amount of maintenance capability DoD components must maintain in organic depot facilities to ensure contingency operations are not compromised because of lack of essential depot maintenance support.

As required by the Defense Authorization Act of 1995, the services conducted a core assessment to determine the organic capability necessary to preserve warfighting readiness and to support the National Security Strategy. Their assessment was based on the methodology jointly developed by the services. In their methodology, the starting point is the National Security Strategy and the appropriate weapon systems to meet the threat.

The services identified the number of specific weapons that would be used to meet the two major regional conflict scenario. They also identified the quantities of weapons that would be used in noncombat support roles. Based on their military experience and judgment, the services assessed the risk of supporting these categories of weapons in both the private sector and government facilities.

IN their judgment, weapons performing noncombat roles would represent potential outsourcing candidates. Weapons that would be used to meet the two major regional conflict scenario would be performed in government facilities unless a demonstrated and robust capability exists in the private sector. In the latter case, these weapons would also become potential

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outsourcing candidates.

Two further considerations guide the analysis performed by the services. First, before any workload is outsourced to a private entity, the services will undertake appropriate business case analyses to determine risk and feasibility. Second, noncore workload will be done in government facilities if there is no private sector source, if the private sector source is cost prohibitive or if such work is required to ensure efficient operation of the government facility — that is, to eliminate peaks and valleys in its workload to achieve level loading.

**B**ASED on this analysis, each service calculated workloads necessary to support core capability requirements over the fiscal 1997-2001 program. By the end of the five-year program, the Air Force, Army and Navy would maintain, respectively, 46 percent, 50 percent, and 50 percent of their depot work in their organic facilities.

This analysis clearly indicates the department can perform its work in a more efficient manner if the 60/40 rule is repealed. Distributing work, as appropriate, among government facilities and the private sector will enable the Department of Defense to meet the National Security Strategy more efficiently and effectively.

Core capability requirements will change over time as a result of such factors as force structure changes, changing threats, introduction of new weapon systems, aging or modification of existing weapon systems or even a change in battlefield doctrine. For those reasons, it is necessary to review core capability requirements on a regular basis. The department intends to conduct such a review every two years.

The department believes it generally should not compete with private industry by performing depot work beyond that required to maintain core capabilities. Once a depot is sized to core, maintaining its ability to compete for noncore work will lead to added costs and inefficiencies. Specifically, the military services would have to pay added costs to maintain excess capacity and overhead in the depot and would not be able to manage efficiently the inherent changes that would occur in labor requirements. Moreover, numerous studies have highlighted the difficulty of ensuring cost comparability between government facilities and the private sector. The department, however,

will place noncore work in government facilities when required to ensure efficient or cost effective operations.

Reliance on the private sector in this manner complements, but does not replace, organic capabilities.

The Department of Defense employs the same superior talent in its civilian work force as in the military. Indeed, DoD civilians consistently demonstrate impressive capabilities and dedication. Their innovation and accomplishments have been recognized on numerous occasions.

An example is the Innovation in American Government awards presented annually

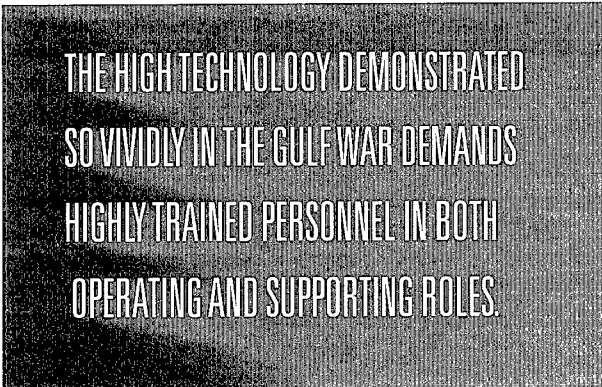
by the Ford Foundation and Harvard University. Of the 10 awards

to federal government finalists last fall, four went to DoD components. We are proud of the people whose dedication to excellence and innovation achieves that kind of recognition. Our employees have made enormous contributions to America's national security strategy in the past and will continue to do so in the future.

The Department of Defense and its employees now confront a series of new challenges as we size our forces and capabilities to meet the national security missions of the 21st century. To meet the mission, the department must determine whether some 15 activities can be performed more efficiently and effectively in the private sector.

**T**O the extent activities are transferred outside the department, employees will face dislocation. We are committed to making the transition as humane as possible as we have done throughout the drawdown and the execution of base realignment and closure decisions. We will use every tool available to assist in retaining, relocating, and retraining. Programs that support these efforts have been successful in the past. They are the reason the department has been able to hold involuntary separations to less than 9 percent of the jobs eliminated over the past six years.

We will continue to consult with employ-



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OPERATING AND SUPPORTING ROLES.



**John P. White**

*The deputy secretary of defense since June 22, 1995, White immediately prior to his appointment had been chairman of the Commission on Roles and Missions of the Armed Forces and director of the Center for Business and Government, John F. Kennedy School of Government, Harvard University, Cambridge, Mass. A former Marine Corps officer, White holds a bachelor's degree from Cornell University and a master's and doctorate from Syracuse University. White worked for the Rand Corp. from 1968 to 1977, was assistant secretary of defense for manpower, reserve affairs and logistics from 1977 to 1978 and then deputy director of the Office of Management and Budget from 1978 to 1981. From 1981 to 1992, he was a senior executive with the Interactive Systems Corp. and Eastman Kodak Co.*

ees, their unions and professional associations at all levels to include notifying them during development, preparation and review of performance work statements and management studies.

**D**oD consults with unions and employee associations via its regular national consultation channels and the Defense Partnership Council. The department works closely with its unions and employee associations to ensure they are kept informed of potential changes affecting civilian employees. Information on outsourcing and privatization has been shared through the council and meetings with unions with national consultation rights.

We have also worked closely to form labor-management partnerships to address issues of common concern at bases across the country. At Kelly Air Force Base, Texas, the partnership between American Federation of Government Employees and federal managers was recently recognized with a National Partnership Award honorable mention citation by Vice President Al Gore. Union and management representatives are working together on the Mission McClellan Executive Advisory Commission, a community-based organization that works on matters related to the privatization and conversion of McClellan Air Force Base, Calif.

**S**everal statutory provisions, primarily in Title 10, singly or in combination, have complicated, delayed or discouraged outsourcing, privatization and competition. A few examples of statutory impediments are:

□ Section 2469, Title 10, U.S. Code — the \$3 Million Rule.

The section requires public/private competitions before any depot workload in excess of \$3 million can be transferred to the private sector. The department believes competitions normally should occur only between private firms. DoD believes government depots should compete against private firms only when private sector competition is inadequate.

□ Section 2470, Title 10 — Other Federal Work.

This provision encourages government depots to maintain capacity over and above what is necessary to sustain core capabilities

to compete for additional workloads, even though the department believes it should not compete with private industry by performing maintenance work beyond that required for core capabilities.

Several provisions of law unnecessarily constrain this outsourcing process or outright preclude it, for instance: Section 2461, Title 10. The department recognizes the need for congressional oversight of its management of support operations, but believes the section's requirement for four separate reports is unnecessary. Moreover, the extensive how-to requirements create disincentives for DoD components to pursue outsourcing.

As a result, these provisions make it difficult to meet the requirements of other statutes to complete any cost comparison expeditiously. Section 8037 of the 1996 Department of Defense Appropriations Act, a recurring provision, restricts use of appropriations for cost comparisons not completed within 24 months for single functions or 48 months for multiple functions.

The department has prepared a legislative proposal to enable us to take advantage more fully of outsourcing opportunities. In addition, we are working with the Office of Management and Budget to streamline Circular A-76 to make it more effective and easier to use.

Today's changing world demands DoD change with it. To ensure our military forces maintain the successful combat effectiveness they demonstrated so well in Desert Storm and the skillful performance of the missions they have undertaken since requires we make the most of the resources entrusted to us.

**A**CHIEVING these goals in a time of fiscal limitations demands the Department of Defense adopt proven management practices that make us more efficient, effective and responsive. Outsourcing is such a management practice, and its benefits have been proven in both the public and private sectors.

DoD's outsourcing initiative is a long-term effort to streamline its support functions further, giving our citizens the best value for their hard-earned tax dollars and our men and women in uniform the capabilities they need to be successful on the battlefield. ▼

# SHOOTING FOR *World Class* TRAVEL SUPPORT

*N*EARLY ONE YEAR AGO, I described to Congress how the Department of Defense would begin replacing its old business travel system with an entirely new one employing the best travel practices available. Our progress in the past year has been remarkable.

*We are much farther along the path to that new travel system than we dared hope. We have made great progress in many areas, ranging from fundamental cultural changes to cutting-edge technological improvements. The journey, however, is not yet complete.*

Our vision was a seamless, paperless system that meets the mission needs of travelers, commanders and other travel resource managers; reduces the cost of travel; and provides superior customer service. Ten principles guide us:

- ☐ Travelers and supervisors are honest and responsible;
- ☐ Allow the supervisor to control his or her travel budget and approve vouchers;
- ☐ Implement simple clear rules to govern travel;
- ☐ Rely on one-stop shopping at a commercial travel office;
- ☐ Consolidate the process into a single piece of paper;

☐ Eliminate bureaucratic burdens on travelers;

☐ Ensure prompt payment by government;

☐ Minimize bookkeeping requirements;

☐ Use best industry financial practices; and

☐ Continuously reassess for improvements.

These principles can be categorized into these three major areas: simplify the rules, delegate authority and use best industry practices. All improvements we have made are based upon the fundamental premise our travelers and supervisors are honest customers of the system.

Based on a prepared statement to the Oversight of Government Management and the District of Columbia Subcommittee, Senate Government Affairs Committee, March 8, 1996

**BY JOHN J. HAMRE, *Under Secretary of Defense (Comptroller)***

To test these principles in an operational environment, the department has embarked upon a pilot testing process at 27 different sites representing each of the services and several defense agencies. In June 1995, we had a conference with all pilot test organizations to begin the test process by providing them a general orientation to the new concept of operations as well as specific guidance they would employ in their tests.

IN SEPTEMBER 1996, we invited representatives from industry to demonstrate vendor capabilities for personnel from the pilot test organizations.

Personnel from the pilot organizations were able to examine the available software enablers and begin to finalize their test plans. It was very clear even the private sector did not yet have all the answers; we were clearly charting some unexplored territory. At the conference, vendors developed new partnerships among themselves, consolidating their areas of expertise, to be able to meet the needs of our new concept.

A third conference with pilot organizations was held in January to review their progress to date and begin to resolve barriers they had encountered. Most pilots were actively engaged in testing key travel system

attributes such as delegation of travel approval authority, reimbursement via electronic fund transfers and random audit of vouchers.

Most pilots had selected one of five major commercial computation software programs to test. Pilot organizations also reported the seven commercial vendors currently providing travel arrangement services would also support their tests of the new concept.

The barriers most commonly reported by the pilots were electronic signature capability, receipt retention by the traveler, the validation of software enablers, and educating managers and travelers about their responsibilities under the new travel system.

The value of the pilot testing process is it will provide us with an accurate baseline of

the current travel process from which we will be able to assess the impact of changes we want to implement across DoD. In other words, the pilots will serve as the means by which we establish proof of concept. Our performance measures are direct costs, indirect costs, accomplishment of mission needs and customer satisfaction.

The department is establishing baseline data for the current travel process at each of the 27 pilot test organizations. The measured process begins with initiation of a travel order and travel arrangements and ends with reconciliation and payment of a travel voucher.

Preliminary data collected and reported by several organizations suggests the number of steps for preparing and approving travel orders and for preparing, computing and reconciling vouchers varies across organizations. The number of people, amount of time and associated cost to prepare and to process travel orders and vouchers also vary.

RAW DATA reported by pilot organizations just beginning to implement travel reforms and software solutions indicate the current process takes — excluding the traveler's time — an aggregate of roughly two to five hours to complete with estimated labor costs of about \$45 to \$115.

The total expected monetary investments in technology and training to achieve a fully automated and integrated DoD-wide travel system have not been established. However, costs will be estimated as part of the acquisition planning process. Although total monetary investments for the new defense travel system have not been established, planned costs for the 28 pilot organizations to fully implement and test the re-engineered temporary duty travel concept are estimated at \$4.1 million. This estimate includes the costs to acquire hardware and software, and to train approximately 32,000 travelers and users served by the pilot test organizations.

We intend to collect the best data possible for our current and our new processes before implementing the new travel system.

While we have made progress in each major area described above, challenges, barriers and initiatives remain.

Last year, a senator noted waste most often occurs due to rigid rules and archaic procedures, not due to ill motives. We have taken that advice to heart. I then provided a

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copy of our simplified entitlements.

We have reduced a large, complex body of regulations to 17 pages of plain English that focus on mission, provide discretion and place accountability with a person we call the authorizing official, who is the manager in the field responsible for the traveler's mission. Use of all these entitlements is currently authorized only for the 27 pilot organizations until the new defense travel system becomes a reality. However, we have been able to implement some of these simplifications throughout DoD beginning in fiscal 1996. These include:

- 75 percent meals and incidental expenses on the first and last day.

Rather than go through complex computations about time of departure and return on the first and last day of travel, we now authorize 75 percent of the meals and incidental expenses as the standard reimbursement. The traveler now knows what to expect in terms of reimbursement, and we have simplified the computations.

- \$75 receipt threshold.

We no longer require the traveler to retain receipts for travel expenses less than \$75 with the exception of lodging receipts, thanks to the Internal Revenue Service's change in policy. This reduces the burden of recordkeeping.

- Paper nonavailability statement.

One of the most common frustrations of the DoD traveler has been the requirement to obtain a paper nonavailability statement from installation billeting offices when not staying on post. It is a time-consuming and bureaucratic process that is unnecessary in an age of electronic reservations. Last fall, I approved a policy change that eliminates this requirement if the traveler cannot establish a reservation with the billeting office prior to departure.

- Per diem delivery system.

Closely related to the simplified entitlements are timely and accurate posting of travel per diem rates throughout the federal government. This is a joint responsibility of the State Department, General Services Administration and Defense Department.

Currently, the distribution of this important rate information is paper-based, time-consuming and error-prone, and it will not support electronic updates of the automated computation systems we envision. We are working with these federal agencies to be able to electronically process per diem rate

information. This new system will minimize errors due to the rekeying of data and ensure travelers are provided accurate per diem entitlements in a much more timely manner governmentwide.

The current practice in many DoD organizations today is to control the funding authority for official TDY travel centrally. Commanders who direct and authorize travel do not always have accurate management information on funding availability and therefore cannot make informed choices on the use of those resources for travel in support of mission requirements. Furthermore, missions directed by the Joint Staff or other outside taskings resulted frequently in a two-step process with fund citations to support a mission coming at a later time than the tasking. This disconnected procedure introduces last-minute administrative delays and paperwork foul-ups.

To overcome this problem, we issued a policy directive that henceforth the authority to obligate travel funds will be delegated to the level consistent with the authority to approve travel in the department. Authorizing officials will be given their own travel budgets to manage. For the first time, line managers will have both the responsibility and the resources to actually manage the travel function.

**TO MAKE** this work, we are planning to provide timely and accurate management information on funding availability status electronically to those supervisors who authorize and manage TDY travel. Secondly, in the case of taskings from external organizations, funding guidance or a fund citation must now be provided along with that direction. This will prevent a paperwork-intensive, time-consuming reconciliation process after the fact. We believe these initiatives will effectively enhance the responsible use of travel resources and eliminate some burdens that infect the current travel process.

Effective this fiscal year, we have also simplified the accounting practices associated with travel expenses. DoD replaced 30 different accounting codes with just one or two codes. This makes the budget process easier for authorizing officials to use and eliminates the complexity of our current accounting procedures. This facilitates delegation of budget authority to authorizing officials by not requiring them to act as



budget clerks in determining which object class code is appropriate for every travel request approved.

**IN OUR** survey of best industry practices, it became clear that one-stop shopping for services with a commercial travel office was the preferred approach. These services include one-time entry of data; use of a single document for both travel authorization and voucher approval; electronic or "paperless" processing; and automatic computation of both a "should cost" pretravel estimate and post-travel "did cost" voucher request.

We have two challenges here. The first is to produce an integrated travel system that provides for these services. There are commercial software products, or enablers, available that with some modifications will allow us to perform these functions.

The second challenge is to provide a single channel of information to travelers for all arrangements including government lodging/messing facilities, per diem rate information and other government-furnished information required to make travel arrangements. The pilots are helping us determine the extent of industry capabilities to perform these functions.

The emphasis is on obtaining those services the commercial travel industry currently provides to its best private sector customers, not on developing unique DoD system requirements. We want to remain sufficiently flexible to take advantage of the new products and services being offered commercially, rather than lock into requirements that do not evolve with industry innovations.

The best practices we studied in corporate America indicate use of a corporate travel charge card is essential. This gets the employer out of the business of maintaining an overhead structure to provide travel advances to the traveler, and ultimately a corporate card makes the travel process much easier for the traveler.

We have issued policy to maximize the use of the government-sponsored travel card, currently the American Express card, for all expenses associated with official business travel. DoD travelers will use the card to obtain cash advances from automatic teller machines as well as to charge their hotels, rental cars, meals and other expenses.

This has been a significant cultural change for a population of travelers used to traveling with cash. We have also developed and implemented a training program for all travel card holders to ensure they understand the proper use of the card.

Best practices also demand we use to the greatest possible extent automated computation capabilities with built-in policy compliance checks that ensure reimbursement of travelers. Prompt payment of travelers will help ensure the travel charge card vendor is paid on time. These initiatives are designed to exploit the fullest potential of electronic transactions.

#### ☐ Electronic funds transfer.

The Department of Defense now requires travel reimbursements be paid to the traveler by an electronic funds transfer to his or her financial institution, just like paychecks. Electronic transfer reduces costs associated with reimbursements and speeds up reimbursement to the traveler. This policy was effective Oct. 1, 1995, for DoD personnel.

Within the first six months, the rate of travel reimbursements by electronic funds transfer went from 25 percent to 47 percent. We anticipate this figure will increase to 90 percent by the end of this calendar year as system changes are made to accommodate electronic funds transfers.

#### ☐ Split disbursement.

Much like electronic funds transfers, split disbursement is where travelers can elect to have the finance office electronically pay the government travel card vendor directly for the charges on their cards, the balance of the reimbursement would be transferred electronically to their personal financial institutions. This will greatly simplify a process that requires the traveler to wait for the reimbursement before sending a check to the travel card company.

Our finance centers are developing implementation requirements for testing split disbursements at our pilot sites. We have been working with the current vendor, American Express, to ensure financial data will be exchanged appropriately.

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□ Third party pay.

A third and final electronic funds transfer initiative we are testing concerns having a commercial vendor make payments directly to the travel card company. DoD would then reimburse a single invoice. This would cut yet another step from the payment process by relieving the government finance office of making those payments.

Our finance centers have prepared the necessary test procedures. If this proves to be a viable course of action, third party pay throughout DoD could result in privatized payment.

**ANOTHER MAJOR** improvement initiative was to establish procedures for the random examinations of travel vouchers in lieu of examining 100 percent of the vouchers. Effective Oct. 1, 1995, disbursing offices within the department began to move to random examinations. These quality assurance reviews, together with other audits as needed for oversight and control, should yield stronger controls at a reduced cost.

Achieving the accomplishments to date has been a collaborative effort across government. The General Accounting Office, General Services Administration and IRS have all been supportive and cooperative in overcoming regulatory barriers and adopting better business practices.

Many of these barriers were built for the best intentions at the time they were constructed. Dismantling them can run quickly into plausible reasons for their continued existence. Reasoning our way through the changes needed to bring them up to date can be tortuous for both the regulators and those being regulated.

We still have some outstanding requests to IRS, General Accounting Office and the National Archives and Records Administration that will enable us to support a paperless process and reduce bureaucratic burden. However, the regulatory agencies on the whole have worked very hard with us to ensure the necessary controls yet allow us the necessary flexibility to ensure the travel mission is conducted more efficiently. I also commend the work of the Joint Financial Management Improvement Program in providing governmentwide leadership to simplify and modernize travel management in government.

Now for the future: DoD has established a

defense travel system project management office headed by Col. Albert Arnold. This office will take all recommendations from the DoD Re-engineering Task Force and coupled with lessons learned from the pilot sites, implement a DoD-wide solution that utilizes best industry practices.

A draft standard DoD solicitation was released on Dec. 7, 1995, that asked for industry comment to help us refine our requirements in accordance with these best industry practices. We feel the best way for DoD to implement evolving travel management services is for us to take advantage of the wealth of nongovernment experience.

The travel industry is evolving, and it makes good sense for DoD to capitalize on this evolution and build a partnership with industry that will last well into the 21st century. In that light and because we have received such an extensive amount of positive comments in response to our draft solicitation, we are conducting a thorough review of our requirements and acquisition strategy.

It's too early to tell you the outcome, but I can assure you we are listening to what industry has to say. They are the experts. They are the ones who will provide solutions for our travel management challenges so DoD can put its streamlined resources to work in the appropriate areas.

It is clear we have done much already, and some significant challenges remain. They fall within three major areas: legislative, technological and cultural.

**WE HAVE** requested the amendment of 10 U.S. Code, Section 1589 as it pertains to DoD civilian travelers. We propose the repeal of statutory language that prohibits DoD from paying a lodging expense to a DoD civilian employee who does not use adequate available government lodgings while on TDY. The statutory language does not permit flexibility by the resource manager to determine, on a case-by-case basis, the most efficient and cost-effective utiliza-

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**John J. Hamre**

*The under secretary of defense (comptroller) since Oct. 26, 1993, Hamre previously was a professional staff member of the Senate Armed Services Committee for 10 years and the deputy assistant director for national security and international affairs in the Congressional Budget Office. He holds a doctorate from Johns Hopkins University School of Advanced International Studies and a bachelor's degree from Augustana College, Sioux Falls, S.D.*

tion of total travel dollars.

For example, it does not allow consideration of car rental costs between government lodging and the TDY mission locations; it does not consider the total costs of providing government lodging, such as building construction, maintenance and utilities. These costs are paid by other DoD appropriations not visible either to the traveler or to the local resource manager.

A seamless, paperless system being our vision, we must ensure data integrity since this system will result in disbursement of public funds. Electronic signature technology appears to protect data and allow us to comply with False Claims Act requirements. We are studying economical ways to achieve the necessary level of data integrity. To reduce development risks and costs, we are working closely with the General Accounting Office, National Institute of Standards and Technology and Department of Energy to develop the necessary specifications for a standard electronic signature system.

Although this system will be utilized for travel, it can also be used for a variety of other applications and is based on the digital signature standard. GAO recognizes the complexity of the data integrity issues surrounding efforts such as ours and the fact specific features needed will evolve as we gain more experience. To help us gain information we need to define the controls needed in a paperless system, GAO approved our testing of some commercially available products.

Our pilot experience has underscored the need for a sophisticated understanding of the capabilities and limitations of our communications and data processing infrastructure. Our future system will have to provide service in a wide variety of operational environments.

Our tests have demonstrated some of our communications and data processing infrastructure is inadequate for these modern techniques. One of our initiatives is to identify industry standards for electronic commerce and apply them to our new travel system. As industry becomes more reliant on electronic commerce methods, the department must likewise remain flexible enough to keep pace.

One unanticipated technical barrier encountered during the pilot phase is the time required to update the software modules with new entitlement rules and to

ensure the changes are accepted for processing payments by our accounting systems. Since entitlement changes occur regularly, this issue needs to be worked.

**ADDITIONALLY**, travel industry conditions are changing so rapidly they tax our ability to predict the costs of future travel services. For example, the commission structure of the travel arrangements industry is changing, with potentially significant implications for our future costs.

Beyond these specific legislative proposals and technological challenges, some "cultural barriers" also hamper our ability to re-engineer the system. Perhaps foremost among these is the oversight mentality that would have the department spend \$100 in rigorous internal controls to oversee a \$10 problem. We need to emulate private sector practices of systems control, random audit and supervisory accountability. We need to ensure requirements such as signatures add value to the process. Best practice in industry does not require — or pay for — fail-safe or multiple signatures on vouchers as a condition for reimbursement.

Here is where congressional leadership can help set the tone by applying cost-benefit analysis principles and common sense to oversight and internal control requirements. By treating DoD travelers and their supervisors as honest customers, we have deliberately designed a system that is not oriented around stopping the 2 percent "bottom feeders."

The costs and systems complexity required to target that population should not be allowed to drive the features of the defense travel system. Here again, the pilots will help us assess the strength and viability of the internal control features of the new system. The lessons learned from their experience will provide an invaluable tool with which we can develop rational and cost-effective control alternatives.

The Department of Defense remains highly committed to this important re-engineering effort. This change effort has been much harder than we had anticipated, but we have made significant progress in a very short period of time. Given the scope and complexity of DoD's operations and the changes under way in the travel industry itself, I would go even further to characterize the progress as extraordinary! ▼

# NBC RACE MARKS

## *Iraq-Iran-Libya* **THREAT**

**IN THIS VOLATILE REGION**, the proliferation of nuclear, biological and chemical weapons and the means to deliver them poses a significant challenge to our ability to achieve these goals. Iran, Iraq and Libya are aggressively seeking nuclear, biological and chemical weapons and missile capabilities, constituting the most pressing threats to regional stability. Iran and Iraq have demonstrated their intent to dominate the Persian Gulf and to control access to critical oil supplies.

Iran is actively attempting to acquire a full range of nuclear, biological and chemical weapons and missiles. The United States believes Iran is committed to acquiring nuclear weapons, either through indigenous development or by covertly acquiring enough fissile material to produce them. During its eight-year war with Iraq,

Tehran initiated biological and chemical warfare programs, the latter in direct response to Iraq's use of chemical weapons. In addition, Iran is dedicated to expanding its ballistic missile programs.

Iraq has long had nuclear, biological and chemical warfare and missile efforts. The challenges these weapons pose in time of conflict became clear during the Persian Gulf War when U.S. and allied forces had to deal with real and potential complications posed by Iraq's arsenal of nuclear, biological and chemical weapons and missiles.

Iraq entered the the Gulf War with

### **U.S. GOALS IN THE MIDDLE EAST AND NORTH AFRICA INCLUDE:**

- Securing a just, lasting and comprehensive peace between Israel and all Arab parties with which it is not yet at peace;
- Maintaining our steadfast commitment to Israel's security and well-being;
- Building and maintaining security arrangements that assure the stability of the Persian Gulf region and unimpeded commercial access to its petroleum reserves, which are vital to our economic prosperity;
- Ensuring fair access for American business to commercial opportunities in the region;
- Combating terrorism; and
- Promoting more open political and economic systems and respect for human rights and the rule of law.

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From the DoD report  
"Proliferation: Threat and Response,"  
released April 1996



## RANGES OF CURRENT & FUTURE BALLISTIC MISSILES SYSTEMS

North Korea is key to Iran's future missile program. Should Iran receive a longer range missile, such as the Nodong, it will be able to threaten a much wider area.

a known chemical warfare capability and a demonstrated willingness to use it — it used chemical weapons against Iranian troops and its own Kurdish population during the 1980s. Iraq also had a known biological warfare capability and a developing, complex, nuclear weapons program despite intense nonproliferation and export control efforts by the United States and the international community.

During the Gulf War, Iraq attempted to weaken the cohesion and resolve of the U.S.-led coalition by using its ballistic missiles as weapons of terror against Saudi Arabia and Israel; however, Iraq did not use chemical or biological warheads with its Scud missiles.

In their quests to establish regional hegemony, Iran and Iraq probably regard nuclear, biological and chemical weapons and missiles as necessary to guarantee their territorial integrity and national security. Possession of nuclear weapons would likely lead to increased intimidation of their neighbors and increased willingness to confront the United States. The U.S. defense commitment, military presence and demonstrated ability to defend U.S. and allied interests against such threats are vital to achieving our goals in the region.

Libya remains a significant proliferation concern. Libyan leader Muammar Qadhafi has shown he is willing and capable of using chemical weapons and missiles against his enemies. Libya sees the United States as its primary external threat, owing especially to U.S. support for U.N. sanctions against Tripoli for its refusal to turn over suspects in the terrorist bombing of Pan Am Flight 103. Although Libya's capabilities to use chemical agents and missiles are limited, Qadhafi could provide these weapons to states he supports and that support him in return.

## Regional Capabilities, Intentions, Trends

Iran poses the greatest threat to the stability of the region and to U.S. interests. This will remain the case as long as the U.N. Security Commission on Iraq is able to maintain its intrusive inspection regime in neighboring Iraq. In the past, Iran has demonstrated both the will and the ability to use nuclear, biological and chemical to advance and defend national goals. Tehran used chemical weapons and ballistic missiles with conventional warheads during the Iran-Iraq war and has fired conventionally armed cruise missiles at U.S.-flagged oil tankers.

In August 1995, Iraq admitted to a far more extensive nuclear, biological and chemical weapons and missile program than had been revealed previously. The Iraqis divulged to U.N. inspectors that prior to the Gulf War they had produced large quantities of biological warfare agents, had loaded them into missiles and bombs, had begun a crash program to build a nuclear weapon and had produced engines for Scud missiles.

In the future, the quality, scope and staying power of the U.N. inspectors and on-site monitoring and verification processes will be central in determining whether the Iraqi weapon programs are dismantled, kept in check or eventually succeed. However, Iraq's military production capabilities (not affected by U.N. sanctions and monitoring), past use of chemicals and missiles and constant efforts to deceive U.N. inspectors are strong indicators Iraq will attempt to produce nuclear, biological and chemical weapons and missiles when outside constraints are absent.

In October 1994, the Iraqis repeated their oft-demonstrated willingness to threaten military action to attain their goals when

they deployed Republican Guard forces to southern Iraq, thereby threatening Kuwait and its oil fields. With reconstructed conventional forces and nuclear, biological and chemical weapons and missile capabilities, Iraq could again threaten states in the region, oil fields and facilities, U.S. forces and key logistics facilities.

## IRAN

Iran's primary national objectives are threefold: ensuring the survival of its Islamic government, limiting foreign influence in the Middle East and spreading Islamic fundamentalism abroad.

Tehran seeks to strengthen its political, economic and military positions as a regional power and to reduce the influence of the West, especially the United States, in the Persian Gulf and in the greater Middle East. In addition, Iran champions Muslim causes worldwide, supporting Islamic activism in other areas in the Middle East, Africa and Asia. Iran's efforts to add to its military power and acquire nuclear, biological and chemical weapons and missiles support these national objectives.

Since becoming president in 1989, Hashemi Rafsanjani has sought to win international political acceptance for Iran to gain European and Japanese financial assistance to rebuild Iran's economy and military forces. Although some of Iran's public rhetoric has moderated, Iran's covert actions indicate its leadership is pursuing a policy of sponsoring terrorism and assassinations of exiled Iranian dissidents, opposing Middle East peace efforts and working to acquire and improve its nuclear, biological and chemical weapons and means of delivery.

Iran has placed a high priority on possessing nuclear, biological and chemical weapons and missiles since Tehran's defeat in the Iran-Iraq war in 1988. Iran has an adequate technological base to support production of chemical agents and missiles and a biotechnical structure capable of supporting production of biological agents. Nevertheless, Iran is attempting to expand its current technological base to achieve self-sufficient production in all phases of nuclear, biological and chemical weapons and delivery systems.

In the nuclear weapons arena, Iran is attempting to acquire an indigenous capability to produce weapons-grade fissile

material. Financial constraints, supplier reluctance and limited indigenous capabilities in certain nuclear, biological and chemical programs have slowed Iran's progress in achieving these goals.

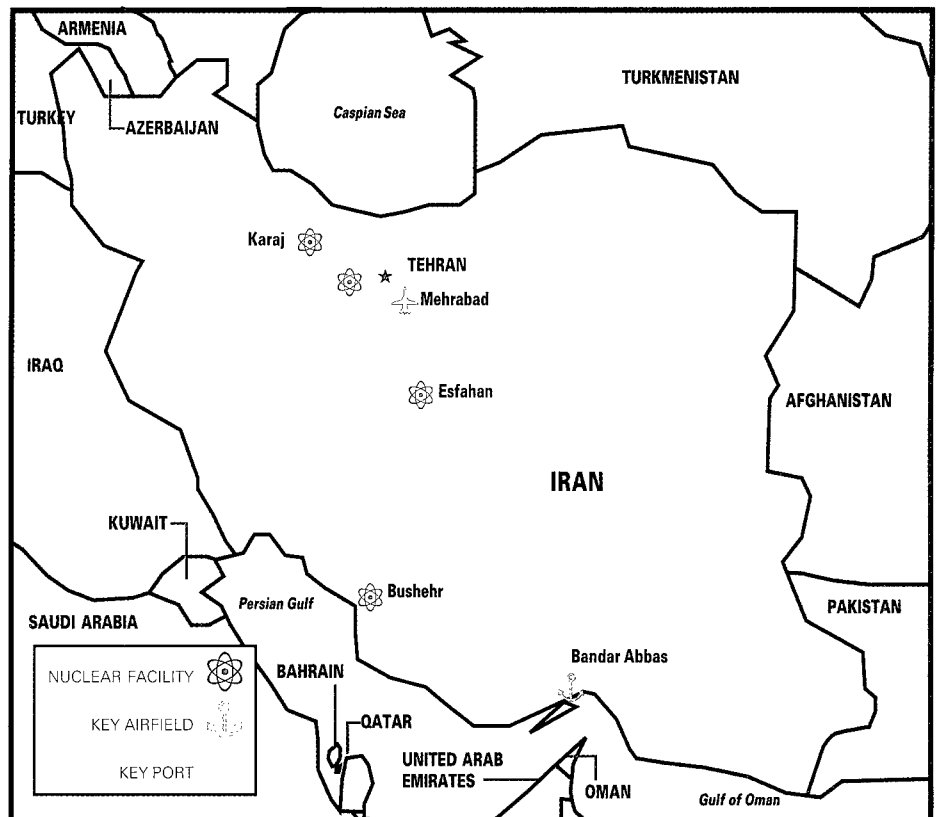
## Constraints Working

Iran continues to suffer the negative economic effects of revolution, war and mismanagement. Foreign debt has reached about \$30 billion, and Iran can afford only about \$1 billion annually for military-related imports. These financial constraints affect the pace of Iran's programs for nuclear, biological and chemical weapons and missiles, even though these programs continue to have high priority.

Iran makes many of its efforts to purchase nuclear, biological and chemical weapons and missile-related technologies on the open market, and there are indications Iranian officials stationed abroad provide clandestine support, obtaining information on foreign companies and on employees susceptible to recruitment and looking for ways to avoid relevant laws and customs procedures. In addition, Iran employs some students studying abroad to acquire technical information and identify scientific researchers

## SELECTED NUCLEAR FACILITIES AND POINTS OF TRANSSHIPMENT

Major ports and airfields serve as key transshipment points for the delivery of NBC and missile related material.



who might cooperate with Iran.

Expanding its nuclear, biological and chemical programs, improving means of delivery and improving conventional military capabilities all strongly support Iranian national objectives. Iran has emphasized the acquisition of power-projection capabilities — ballistic missiles, combat aircraft and submarines — to oppose intervention by foreign forces during some future conflict. To attain self-sufficiency for its military industry, Iran purchases complete weapons and components for assembly to facilitate the flow of technology necessary for indigenous production.

Iran's nuclear energy program began under the shah and included power plant development and a small research reactor purchased from the United States. The shah also sponsored research aimed at producing fissile material for weapons development. In 1979, the country's Islamic revolution essentially halted both weapons-related work and civilian nuclear activities such as the construction of foreign-supplied power reactors. Since the end of the war with Iraq, the Islamic government has initiated civilian and weapons-related nuclear efforts, despite having signed the nuclear Nonproliferation Treaty. Of greatest concern, however, are Iran's efforts to acquire fissile material and key nuclear technology to support nuclear weapons development.

Iran has sought heavy water research reactors even though such technology has no use or value in its light water reactor-based civil nuclear power program. Iran's interest in uranium enrichment and spent fuel reprocessing, activities with no economic justification in Iran's civil nuclear energy plans, indicates Iran's desire for the capability to produce fissile materials for nuclear weapons.

China is a principal supplier of nuclear technology to Iran, and Russia may soon become another key supplier. The Iranians have purchased an electromagnetic isotope separation unit from China. China has also sold Iran a research reactor that could be used as a training model for a plutonium-producing reactor. Iran's procurement activities provide strong evidence of this.

The Iranians state nuclear energy is required to meet their present and future energy demands. They argue for using their oil and natural gas reserves to generate hard currency revenues rather than wast-

ing them on domestic consumption. At the same time, Iran's nuclear power program could be used to legitimize its attempts to acquire capabilities in sensitive phases of the nuclear fuel cycle related directly to weapons development, such as uranium enrichment or spent fuel reprocessing.

At this stage, Iran's scientific and technical base remains insufficient to support major nuclear programs. The Iranians recognize their dependence on foreign assistance and are encouraging younger Iranians to study abroad to gain needed technical expertise.

### ***Delivered by Artillery***

Iran's offensive chemical warfare program began in 1983 in response to Iraq's use of mustard gas against Iranian troops. By 1987, Iran was able to deliver limited quantities of blister (mustard) and blood (cyanide) agents against Iraqi troops using artillery shells.

Iran has been producing chemical agents at a steadily increasing rate since 1984 and has cumulatively produced at a minimum several hundred tons of blister, blood and choking agents. Tehran has put some of these chemicals into weapons and stockpiled them to support ground combat operations. In addition, Iran could attempt to deliver chemical bombs against targets such as airfields, ports or oil installations across the Persian Gulf.

Iran has increased defensive and offensive chemical warfare training for its ground forces in the last two years. Furthermore, it is making efforts to buy defensive chemical equipment from foreign sources, perhaps a prelude to acquiring indigenous production capability.

Although Iran has signed the Chemical Weapons Convention, its efforts to establish an independent chemical production capability and a wider program to put chemicals into battlefield weapons cast doubt on its adherence to the agreement.

Iran began its biological warfare program in the early 1980s during the Iran-Iraq war. It made agreements with numerous countries for cooperative research, scientific exchanges and technology sharing. The Iranians are conducting research on toxins and organisms with biological warfare applications.

With their biotechnical support structure, the Iranians are capable of producing many



different biological warfare agents. Iran has evolved from piecemeal acquisition of bioprocessing equipment and is now pursuing complete biological production plants that could be converted to producing biological warfare agents. Some of its major universities and research organizations may be linked to its biological warfare program.

#### **War Provided Motivation**

Iran first acquired Scud-B ballistic missiles from Libya and North Korea and used them during the Iran-Iraq war. Later it received Scud-B and Scud-C missiles from North Korea, and CSS-8 missiles and other material from China. Iran fired nearly 100 Scud-B missiles at Iraq from 1985 to 1988. As was the case with chemical weapons, Iran's motivation to improve and expand its ballistic missile force results from the war with Iraq, during which Iran could not respond adequately to Iraqi missile attacks on Iranian cities.

Iran has a two-track ballistic missile program. In addition to acquiring Scud missiles and missile-related equipment from North Korea, it also seeks to establish its own missile production capability. Its production program is planned for both liquid-fueled and solid-propellant missiles. As part of the process, Iran has already begun assembling missiles using foreign-made components, and eventually it may produce these components domestically. Further, it is actively attempting to acquire

other assistance and missile-related technology from a variety of foreign sources for its goal of producing a medium range ballistic missile.

With its current inventory of missiles, Iran can strike targets in neighboring countries, including oil installations and ports in Saudi Arabia. With a longer-range missile, such as the North Korean Nodong, it would be able to strike targets in Israel and in most of Saudi Arabia and Turkey.

Iran has Chinese land-based and shipborne anti-ship cruise missiles and Russian air-to-surface missiles, and it has experience in employing some of them in combat conditions. During the Iran-Iraq war, for example, Iran fired at least 10 coastal-based Chinese missiles at Kuwait, one hitting a U.S.-flagged oil tanker. Iran will continue to rely on China as its cruise missile supplier. In addition, Iran has artillery and aircraft that can deliver chemical and biological agents and Russian-made Su-24 fighter-bombers that could deliver nuclear weapons.

#### **IRAQ**

Despite Iraq's defeat in the Gulf War and the severe costs to its military forces and its civilian infrastructure, Saddam Hussein's goals remain almost identical to those in effect prior to the war: to establish Iraq as the leading Arab political and military power in the Middle East and to dominate the Persian Gulf. To these ends, Saddam or

#### **SELECTED NUCLEAR, CHEMICAL, BIOLOGICAL, AND MISSILE FACILITIES**

Despite severe war damage and over four years of U.N. inspections, Iraq retains some infrastructure to resurrect many of its NBC weapons and missile programs.

any successor with similar ambitions will seek to rebuild Iraq's conventional military forces and reconstruct its nuclear, biological and chemical warfare and ballistic missile capability.

Historically, Iraq had developed nuclear, biological and chemical weapons and missiles programs to support Saddam's goals. He has demonstrated his willingness to use chemical weapons and ballistic missiles for their tactical, strategic and psychological value. Iraq orchestrated the development of these weapons by diverting dual-use technologies and creating extensive procurement networks with front companies.

Since the end of Desert Storm, the United Nations has challenged Baghdad's lack of cooperation and its noncompliance with U.N. Security Council resolutions. Iraqi government officials have used concealment, deceit and intimidation with the aim of eventually rebuilding their missile force and their nuclear, biological and chemical weapons programs.

Iraq's economy remains weak because of U.N. sanctions. Based on a number of Security Council resolutions, these sanctions prohibit arms imports as well as most industrial imports that support the civilian sector. Iraq also is not permitted to export oil or other goods unless the proceeds are spent on food and medicine (under U.N. supervision), and its assets abroad remain frozen.

Although industrial production has increased since the end of the war, it is only about one-third of its prewar level. In November 1993, Iraq accepted U.N. Security Council Resolution 715, calling for continued U.N. monitoring of Iraqi weapons programs; unfortunately, all indicators suggest this acceptance does not signal Iraqi intentions to forgo eventually rebuilding its NBC weapon capabilities.

Prior to Desert Storm, Iraq systematically misled foreign suppliers and governments regarding the actual end-users of purchases. Further, Iraq purchased controlling interests in selected Western companies to obtain legal mechanisms for placing orders for products subject to export controls. It employed middlemen and established front companies to facilitate covert acquisition activities to funnel dual-use technologies to Iraq. In addition, the Iraqi government sent numerous students to Western universities to study nuclear technology so these individuals could eventually support Iraq's

nuclear program.

Iraq has continued its deceptive efforts to keep alive elements of its nuclear, biological and chemical weapons and missile programs, as demonstrated by the August 1995 public disclosures concerning the extent of Baghdad's biological warfare effort. Another example of Iraq's noncompliance is a December 1993 incident involving the interdiction of a shipment of ammonium perchlorate, a dual-use chemical with solid missile fuel applications. The shipment was a violation of U.N. Security Council Resolution 715, which Iraq had already accepted.

The return of production equipment, computers and documentation removed from key facilities prior to and during Desert Storm has expedited reconstruction of military industries. Furthermore, Iraq is preserving enough of its nuclear, biological and chemical weapons programs to provide the foundation for revitalized efforts once sanctions are lifted and inspections ease or are terminated.

Iraq's large number of scientists and technicians is one of its most valuable resources for rejuvenating its programs for nuclear, biological and chemical weapons and missiles. Iraq retains the services of several thousand scientists, engineers and technicians previously employed in its nuclear weapons program. With this pool of expertise, together with significant assistance and supplies, Iraq could probably rebuild its nuclear weapons program and manufacture a device in about five to seven years.

### **A Textbook Case**

Iraq's efforts to acquire a nuclear weapon production capability constitute a textbook case of the many avenues a country can pursue to reach this objective. To realize its nuclear weapon ambitions, Iraq established a broad, multifaceted program to produce fissile material and to develop the associated technology essential for nuclear weapon design.

Iraq began laying the groundwork for its nuclear weapons program in the 1970s, when it attempted unsuccessfully to purchase a plutonium production reactor similar to the one France used in its nuclear weapons program. In 1976, France agreed to build the Osirak and Isis reactors, part of Iraq's large nuclear research complex at Tuwaitha in Baghdad.



From the late 1970s to the early 1980s, Baghdad experienced several setbacks, the most notable being the Israeli air strike on the Osirak reactor in June 1981, shortly before its first fuel was to be loaded. With the loss of this reactor, Baghdad apparently refocused its nuclear weapons effort on producing highly enriched uranium. Its interest in acquiring plutonium as fissile material for weapons continued, but at a lower priority.

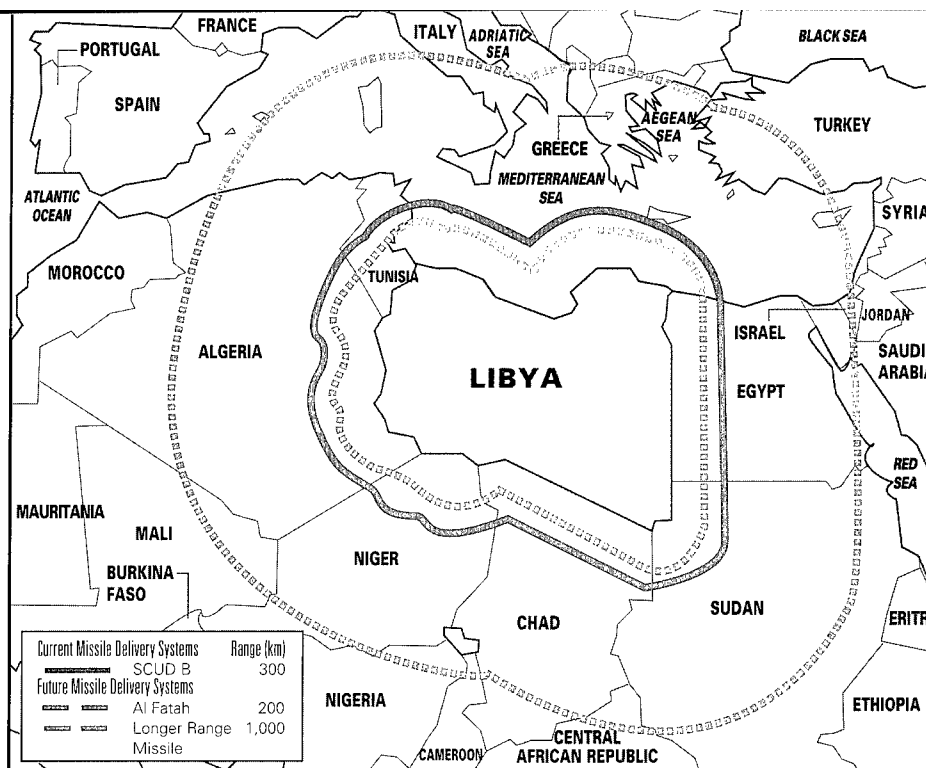
Iraqi scientists concurrently investigated almost every viable uranium enrichment technique. Documents seized by International Atomic Energy Agency inspectors in 1991 revealed a broad-based Iraqi effort to design and develop a nuclear weapon. In addition, in August 1995, the Iraqis admitted that they had established a crash program to build a nuclear weapon by April 1991.

Iraq's nuclear weapon design and development work, supported by at least 16 primary and supporting facilities, was severely disrupted by Desert Storm. Most of the facilities were in Baghdad and the outskirts of the city, but others were in Mosul in the north and Al Qaim and Akashat in the west near the Syrian border.

The extent and sophistication of the Iraqi nuclear weapon program uncovered by U.N. and International Atomic Energy Agency inspectors surprised the international community. The diversity and broad scope of the Iraqi program prompted subsequent efforts to tighten up International Atomic Energy Agency safeguards procedures and export controls.

Since the early 1980s, Iraq has produced several thousand tons of chemical agents, primarily at its main production facility in Samarra. Other chemical warfare-related facilities were located at Al Habbaniyah. Iraq used some of its chemical weapons stockpile against the Iranians and the Kurds during the mid- to late-1980s. By the time it invaded Kuwait, Iraq probably had 1,000 metric tons of chemical agent on hand, split equally between blister agents and nerve agents. Also, it had become self-sufficient in producing many types of precursors, had produced a variety of chemical agents on its own and had produced munitions with some of these agents.

Iraq built its chemical program with assistance from Western individuals and companies that supplied it with vital chemi-



cal processing equipment, chemical precursors and technical expertise. In the absence of U.N. monitoring or import controls, Iraq could revive a viable chemical weapon capability in a matter of months, despite war damage to its production and storage facilities.

The Iraqis still have a domestic chemical industry, and converting some of these plants from producing chemicals to producing chemical warfare precursors and even agents would be relatively straightforward. Iraq retains the capability to deliver chemical agents using a variety of munitions, including artillery shells and rockets, aerial bombs, spray tanks, mortar rounds and Scud-type missile warheads.

Iraq's past use of chemical weapons demonstrates its willingness to ignore international norms of conduct. Iraq first used chemical agents in 1983, when Baghdad attacked Iranian military forces with mustard gas. In 1984, Iraq employed tabun-filled aerial bombs against Iran, making Iraq the first and only nation ever to have used a nerve agent on the battlefield.

Iraq's successful integration of chemical weapons into offensive operations is widely accepted as one of the reasons for its victory over Iran in 1988. Baghdad used chemical weapons for their tactical and strategic value, not to mention their overwhelming psychological effect on Iranian forces. Iraq also used lethal chemical agents against its own Kurdish civilian population in 1988.

## CURRENT AND FUTURE BALLISTIC MISSILE SYSTEMS

Should Libya acquire a longer range missile, such as the North Korean Nodong, it will be able to strike southern Europe and Israel.

Iraq revealed to U.N. inspectors in August 1995 it had a far more extensive and aggressive biological warfare program prior to the Gulf War than previously admitted.

The Iraqis claim to have produced 90,000 liters of botulinum toxin and 8,300 liters of anthrax, as well as significant quantities of an agent that causes cancer. Further, the Iraqis claim to have loaded botulinum toxin and anthrax on Scud missiles warheads and aerial bombs. Baghdad also admitted conducting research on mycotoxins and infectious viruses. The Iraqis claimed in August 1995 they destroyed the agents after the Gulf War, but have yet to produce evidence to support their claim.

### ***Inspections Reveal Links***

Since the end of Desert Storm, Iraqi declarations and U.N. inspections have exposed an extensive dual-use fermentation capability and additional facilities probably linked to the weapons program. Because of their dual-use nature, most equipment and procedures related to producing biological agents are rationalized as legitimate agriculture, biomedical and biotechnical industrial activities.

Coalition air strikes destroyed or damaged many of Iraq's facilities associated with biological warfare, including those at Al Kindi and Salman Pak. However, before the coalition operations began, the Iraqis had relocated virtually all of their agent production equipment to Al Hakam and other facilities.

All known fermentation and bioproduction equipment remains intact, and key experts are still available to serve Iraq's military programs. Consequently, Iraq retains the infrastructure that previously developed and produced biological warfare agents and weapons and could easily renew production of biological agents when intrusive U.N. inspections are discontinued.

Soviet Scud missiles were the basic building block of Iraq's missile development program. During the late 1980s, Baghdad began to enlarge the propellant tanks and reduce the Scud warhead weight to reach targets beyond the missile's 300-kilometer maximum range. Iraq also focused on a domestic manufacturing capability for these modified Scuds, as well as the Badr 2000, a solid-propellant missile based on the Argentine Condor, with a 750-1,000-kilometer range. Baghdad also had plans for a 2,000-

kilometer-range Tammouz I missile. As a result, by the start of Desert Storm, Iraq had a support structure for the eventual manufacture of liquid- and solid-propellant ballistic missiles.

The principal missile launched during Desert Storm was the 600-650 kilometer Scud variant called the Al Husayn. A variant known as the Al Husayn Short was also produced. The Iraqis claimed to have fired another Scud variant, the Al Hajarah, which may have had a concrete-filled warhead, at Israel during Desert Storm.

Even though most of Iraq's missile production facilities received heavy damage during the Gulf War, Baghdad maintains some equipment needed to produce ballistic missiles, in part because of the dual-use nature of much of the equipment required for producing Scuds. Today, Iraq's production efforts are focused on developing the Ababil-100, with an estimated maximum range of 150 kilometers, and the Ababil-50, a Yugoslav-designed 50-kilometer range battlefield artillery rocket. Many Ababil-100 liquid-propellant missile production technologies are compatible with Scud production.

U.N. Security Council Resolution 687 prohibits Iraqi possession of missiles with a range greater than 150 kilometers. Nevertheless, the United States believes Iraq has hidden a small number of mobile launchers and several dozen Scud-type missiles produced before Desert Storm.

Iraq has Chinese land-based and air-launched anti-ship cruise missiles. Although its stockpile is likely limited, Iraq used French air-launched and Chinese land-based and air-launched missiles during the Iran-Iraq war. Iraq enhanced its anti-ship capability by forward deploying aircraft and by using aerial refueling to strike oil tankers in the Strait of Hormuz. Iraq still possesses a variety of other platforms capable of delivering both chemical and biological weapons, including artillery and tactical rockets, combat aircraft and helicopters.

### ***LIBYA***

Libya has a long history of subverting and destabilizing Arab and African nations by supporting coups, funding and training opposition forces and guerrilla groups, and plotting the assassinations of foreign leaders. Qadhafi has invaded, occupied and

claimed territory in all of Libya's neighbors except Egypt. He has at times supported foreign Islamic extremists, and he has frequently criticized Arab governments that have attempted to open dialogue with Israel.

Under Qadhafi's leadership, Libya remains a potential threat to the international community and neighboring states. While pursuing his political and military aspirations, he has squandered the country's oil wealth on a program for nuclear, biological and chemical weapons, missiles and an enormous inventory of conventional military equipment. Since seizing power in 1969, Qadhafi has unsuccessfully attempted to turn the Libyan state into a regional military power.

### Willful Use of Chemicals

Qadhafi has demonstrated both his desire to acquire ballistic missiles and a nuclear, biological and chemical weapon capability as well as his willingness to use the capabilities at his disposal. In 1987, when his military operation against Chad was nearing defeat, Qadhafi ordered his forces to use chemical agents against Chadian troops.

In response to U.S. retaliatory strikes for the terrorist bombing of a Berlin discotheque, Qadhafi fired Scud missiles at the Italian island of Lampedusa. Although the Scud missiles did not cause significant damage, the act constituted a symbolic gesture of defiance directed at the United States and the international community. Finally, and more importantly, Qadhafi has ordered kidnappings and both supported and employed international terrorism against Western nations.

Qadhafi, who remains largely unchallenged as Libya's leader, controls nearly all policy decisions for his country. His aim is to enhance Libya's military strength and power-projection capability, in part by possessing nuclear, biological and chemical weapons and missiles. Qadhafi apparently believes these efforts promote Libya's status as a regional military power, enhance national prestige and provide Libya limited strategic military capabilities.

Libya probably dedicates several hundred million dollars annually to acquire nuclear, biological and chemical weapons and missiles, made possible by its substantial income from oil and natural gas exports. However, since it does not have the ability

to produce these weapons on its own, Libya will continue to rely heavily on foreign technical assistance.

Qadhafi's efforts to become a recognized military power in the region have been generally unsuccessful. Despite accumulating a large military inventory, Libya has failed to develop its conventional military capabilities, as evidenced by its embarrassment at the hands of Chadian forces in the 1980s.

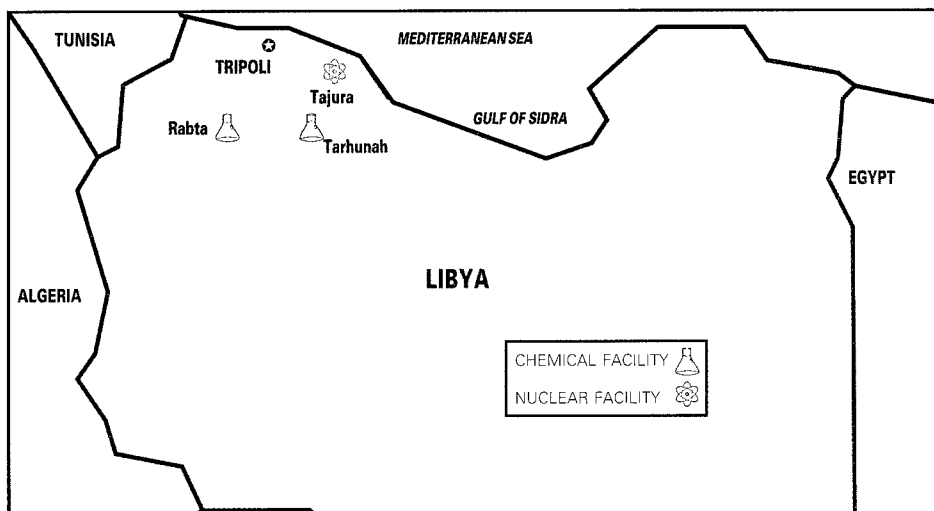
Even though Qadhafi has been successful in holding onto power in Libya, he has not become a regional leader. His numerous schemes to form political unions with other Arab states have failed, and his support of insurgent and opposition movements has done little to enhance Libya's standing or further its policy agenda. Qadhafi's continued support for terrorism has resulted in an extended confrontation with the United States and more recently, has prompted U.N. sanctions.

As a result of these setbacks, Qadhafi has placed greater emphasis on a more dangerous strategy: developing nuclear, biological and chemical weapons and missiles. Qadhafi views these weapons as critical in his drive to establish himself as the leader of the Arab world. In addition, he hopes ongoing efforts to develop and ultimately produce nuclear, biological and chemical weapons, especially nuclear weapons, will give his nation prestige among Islamic and other Third World nations, recognition he has sought for three decades.

Qadhafi's long-standing desire to acquire a nuclear weapon is well-known. Nonetheless, despite concerted efforts, Libya's program to establish an independent nuclear research and fuel cycle capability remains in its early stages. Despite Libya's public pronouncements of its peaceful intent, the underlying motivation behind this program continues to be acquiring

### SELECTED NUCLEAR AND CHEMICAL FACILITIES

While progress for its nuclear weapons program has remained elusive, Libya has had greater success in producing chemical agents.



nuclear weapons.

Libya deposited its instruments of ratification to the nuclear Nonproliferation Treaty in 1975 and its declared facilities are under International Atomic Energy Agency full scope safeguards. Libya's rudimentary nuclear program includes a small research reactor, provided by the Soviet Union in the mid-1970s, at the Tajura nuclear research center near Tripoli. Waning commitments by Russia to provide assistance to operate and maintain the center have diminished activities at the site.

To compensate and to build up its indigenous resources, Libya continues to send scientists abroad for training and actively recruits foreign nuclear scientists and technicians. However, Libya's program lacks well-developed plans, technical expertise, consistent financial support and sufficient support from foreign suppliers.

Libya is one of few nations in the last decade to have employed chemical weapons, having dropped chemical agents from a transport aircraft against Chadian troops in 1987. Iran supplied the agents in exchange for naval mines.

#### ***Blister, Nerve Gas Produced***

In addition, Tripoli has looked to establish an indigenous chemical warfare program, and in late 1988, with extensive foreign assistance, completed construction of the Rabta chemical agent facility. During three years of operation, at least 100 metric tons of blister and nerve agents were produced at this facility. When the United States brought Libya's chemical warfare program to the attention of the international media in 1988, Libya responded in 1990 by fabricating a fire to make the Rabta facility appear to have been seriously damaged.

Although the Rabta facility appears inactive, Libya's chemical weapons program continues to flourish. To replace the Rabta facility, Libya has begun constructing a large underground chemical warfare plant near Tarhunah, a mountainous region about 60 kilometers southeast of Tripoli. Putting the facility underground masks its activities and increases its survivability in case of an attack. In the meantime, Libya will rely on foreign sources for its precursor needs.

Libya claims it will not sign the Chemical Weapons Convention as long as other countries in the region possess nuclear, biological and chemical weapons. Libya almost cer-

tainly will keep its chemical warfare program as long as Qadhafi remains in power.

Libya continues its efforts to establish a biological warfare capability. However, hampered by its inadequate biotechnical foundation, the Libyan offensive biological warfare program remains in the early research and development stage. Libya may look to small research and development programs supported by universities to fill in the gaps in its technical knowledge. These technical shortcomings, combined with limitations in Libya's overall ability to put agents into deliverable munitions, will preclude production of militarily effective biological warfare systems for the foreseeable future.

Libya's only operational ballistic missile system is the Scud-B, acquired from the former Soviet Union in the mid-1970s. The acquisition of an extended-range missile, such as the North Korean Nodong, and the development of an indigenous missile designed to reach 1,000 kilometers would give Libya the capability to reach regional adversaries.

International constraints make purchasing a longer-range missile, such as North Korea's Nodong, difficult. In addition, developing an indigenous ballistic missile production program also requires extensive foreign assistance. So far, Libya's program has made slow progress in its 13-year history, and has succeeded only in manufacturing liquid-fueled rockets with an approximate range of 200 kilometers. However, despite this lack of dramatic gain, the program continues to receive government support.

In addition to its liquid-fueled rocket program, Libya also may pursue testing and production of solid-propellant tactical rockets and missiles. Although U.N. sanctions have impeded its ability to obtain the technologies it needs for these programs, Libya continues its research and development efforts aimed at acquiring ballistic missiles.

Libya has Soviet-made shipborne and European-made land-based and shipborne anti-ship cruise missiles. Libya has artillery and tactical rockets, as well as several aircraft that could deliver chemical agents, including MiG-23, Su-22 and Su-24 fighters, Tu-22 bombers, Mi-2 and Mi-8 helicopters, and AN-26 transports. ▼

# SALES, TRADES SPREAD ASIAN Nuclear KNOW-HOW

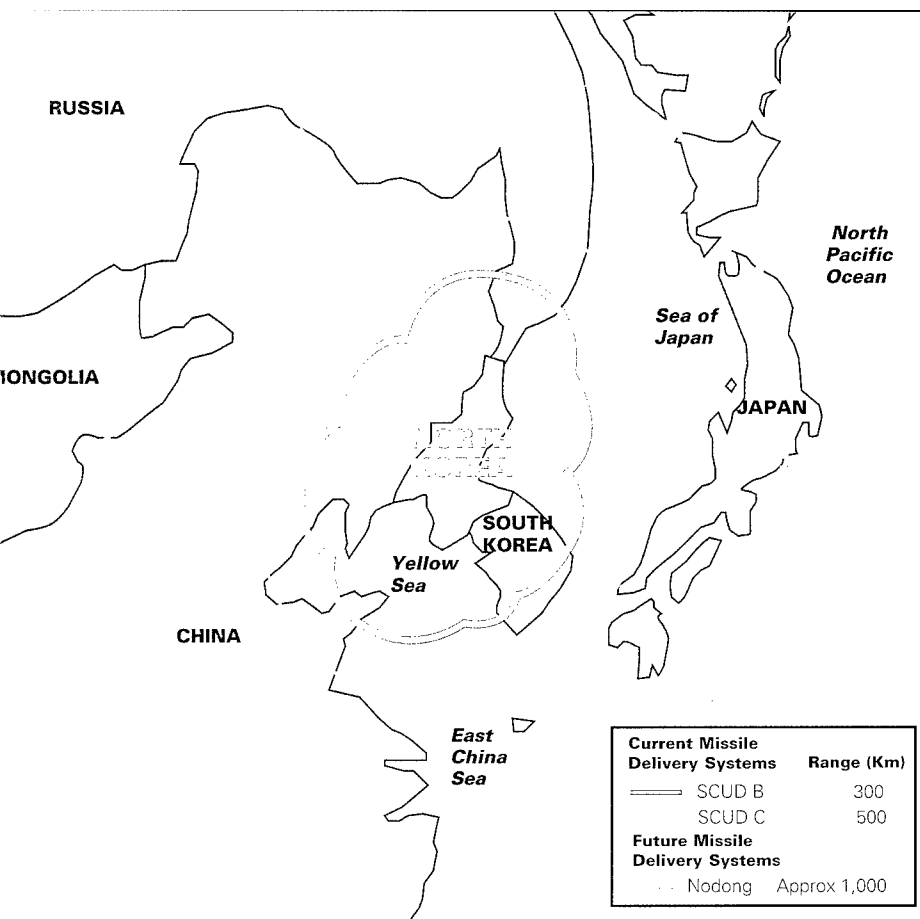
**NORTHEAST ASIA REMAINS** a region of vital importance to the United States, particularly in view of the growing prominence of the Pacific Rim nations as trading partners and as important players in the global economy. Security and stability in this region are essential if our economic relations are to continue to flourish.

Our overarching long-term objective in the region remains the peaceful reunification of the Korean Peninsula. The United States will continue to maintain forces on the peninsula to assure security for South Korea as long as the Republic of Korea government wants them to stay.

Although the October 1994 agreed framework with North Korea over its nuclear facilities mitigated the immediate nuclear threat, Pyongyang still possesses an unnecessarily large conventional force, as well as militarily significant chemical weapons and the means to deliver them. Proliferation, particularly the broad-based nuclear, biological and chemical weapons and missile programs North Korea has implemented, poses a significant challenge to U.S. security interests as well as to those of our allies and friends.

In the event of another war on the Korean Peninsula, these weapons present a significant threat to our forces and the security of our allies. Should a conflict occur, North Korea likely will try to consolidate and control strategic areas of South Korea by striking quickly and attempting to destroy allied defenses before the United States can provide adequate reinforcements. Pyongyang hopes to do this with its large conventional force and its chemical weapons and ballistic missiles complement.

From the DoD report  
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## REGIONAL BALLISTIC MISSILE THREAT

North Korea's current inventory of ballistic missiles allows it to strike targets throughout the peninsula. When the longer range missile — the Nodong — becomes operational, nearly all of Japan will be in range.

Strong bilateral relations with our allies and friends are the foundation of our Asia-Pacific strategy, and the North Korean nuclear, biological and chemical weapons and missile programs have the potential to complicate relationships within our bilateral alliances throughout the region. Should a proliferant go unchecked, calling U.S. capabilities and commitments into question, states may seek unilateral alternatives to ensure their security, thus stimulating proliferation. Nearly 100,000 soldiers, sailors, Marines and airmen of the U.S. Pacific Command maintain the strong forward presence that deters aggression, reassures our allies and enhances stability throughout the region — a critical mission.

### Nuclear Supplier

China has been a nuclear weapons state since 1964. It remains a source of concern primarily because Chinese companies supply a wide range of materials, equipment and technologies that could contribute to nuclear, biological and chemical weapons and missile programs in countries of proliferation concern.

Beijing has signaled some willingness to adopt a more responsible supply policy by adhering to international nonproliferation

norms such as the nuclear Nonproliferation Treaty of 1992 and reaffirming to the United States its pledge to abide by the basic tenets of the Missile Technology Control Regime. However, Chinese firms' continued willingness to engage in nuclear and missile cooperation with countries of serious proliferation concern, such as Pakistan and Iran, presents security concerns in many regions where the United States has defense commitments. Counterproliferation will continue to be a strong component of our regional strategy in Northeast Asia as long as our defense commitments and our forces are threatened by the spread of nuclear, biological and chemical weapons and missiles.

### NORTH KOREA

The urgent threat of North Korean nuclear proliferation has abated since Pyongyang signed the agreed framework with the United States in October 1994. If Pyongyang adheres to the agreement, its current nuclear program will phase out over time. In the near term, its production of fissile material for nuclear weapons has halted under International Atomic Energy Agency monitoring. Nonetheless, North Korea continues developing missiles and chemical warfare capabilities and exporting ballistic missiles and related technologies, which contribute to proliferation.

North Korea has significantly advanced its nuclear, chemical and ballistic missile programs during the last 10 years. While agreeing to freeze activity at and eventually eliminate its existing plutonium production nuclear reactors and associated facilities, North Korea maintains chemical warfare and ballistic missile capabilities.

For many decades, Pyongyang has mounted an all-out effort to build and strengthen its military. As a result, it has one of the five largest armed forces in the world — over 1 million active duty personnel. Over the years, Pyongyang has worked to improve its ability to launch a surprise attack against South Korea. With the right conditions or the perception of them, Pyongyang could launch an attack supported by chemical weapons and Scud missiles against any military or civilian targets in South Korea, including key logistics facilities at Pusan, Taegu and Kwangju.

Despite its isolation, North Korea uses several methods to acquire technology

related to nuclear, biological or chemical warfare and missiles. For example, the Japan-based General Association of Korean Residents — the Chosen Soren — has among other activities an ongoing effort to acquire and export advanced technology to North Korea. In addition, North Korean intelligence organizations are involved in clandestine operations to acquire technology, equipment and scientific and technical information to aid the full spectrum of North Korea's conventional and nuclear, biological and chemical weapons programs.

In the 1960s, under a "peaceful uses of atomic energy" agreement, the Soviet Union provided North Korea a small nuclear research reactor and related training. This assistance vested North Korea with a fundamental understanding of and practical experience in nuclear physics and engineering as well as reactor operations.

#### **A Decade of Development**

During the 1980s and early 1990s, North Korea developed a complete nuclear fuel cycle that included a plutonium production capability at the Yongbyon Nuclear Research Center. This center, about 90 kilometers north of Pyongyang, comprises facilities with capabilities to fabricate nuclear fuel, a five-megawatt (electric) reactor to produce plutonium and a reprocessing facility to extract weapons-grade plutonium from irradiated fuel — the key materials needed to produce nuclear weapons.

The plutonium production reactor became operational in 1986. Some refueling in 1989 provided weapons-grade plutonium for at least one nuclear weapon. Fuel from this reactor also was discharged in May-June 1994 and, had it been reprocessed, could have provided enough plutonium for several additional nuclear weapons.

Additionally, North Korea was building a 50-megawatt (electric) reactor at Yongbyon and a 200-megawatt (electric) power reactor at Taechon. Construction of these reactors has been halted under International Atomic Energy Agency monitoring as part of the agreed framework, under which all of these facilities are obliged to be dismantled. The 50-megawatt reactor would have produced enough plutonium for North Korea to build an additional seven to 10 nuclear weapons per year. Moreover, the reprocessing facility at Yongbyon has been sealed. This large facility was key because it would have

enabled Pyongyang to extract weapons-grade plutonium from irradiated fuel from both the five- and 50-megawatt reactors.

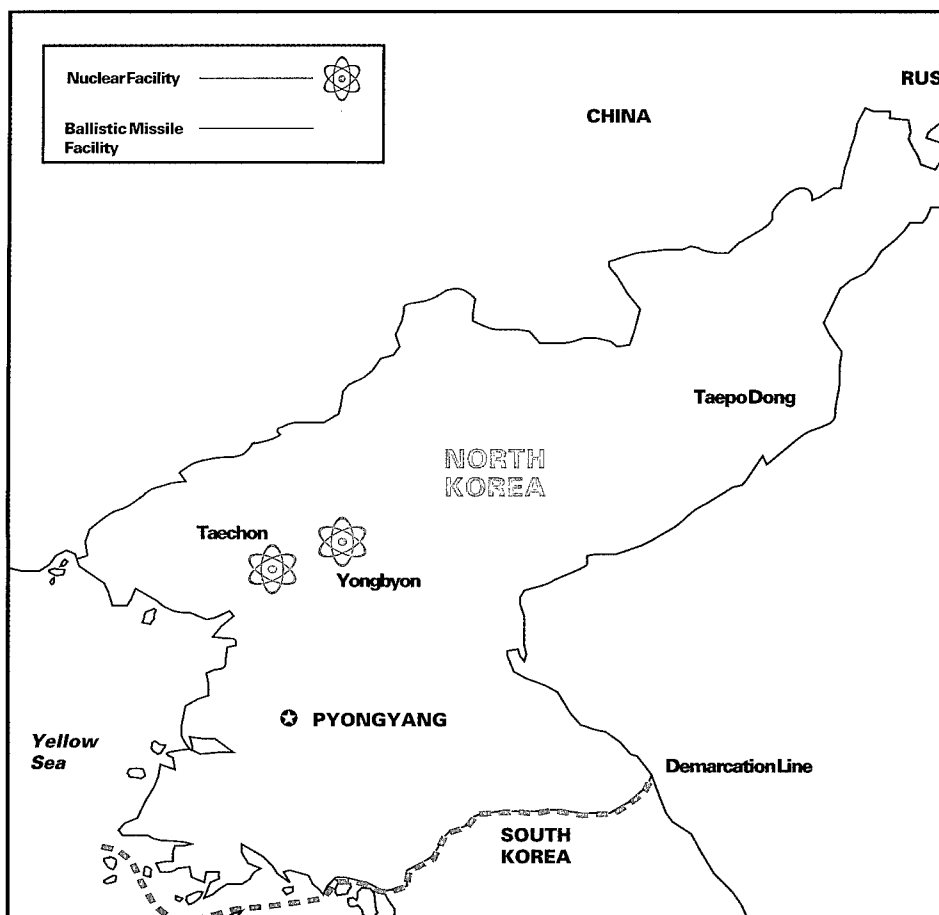
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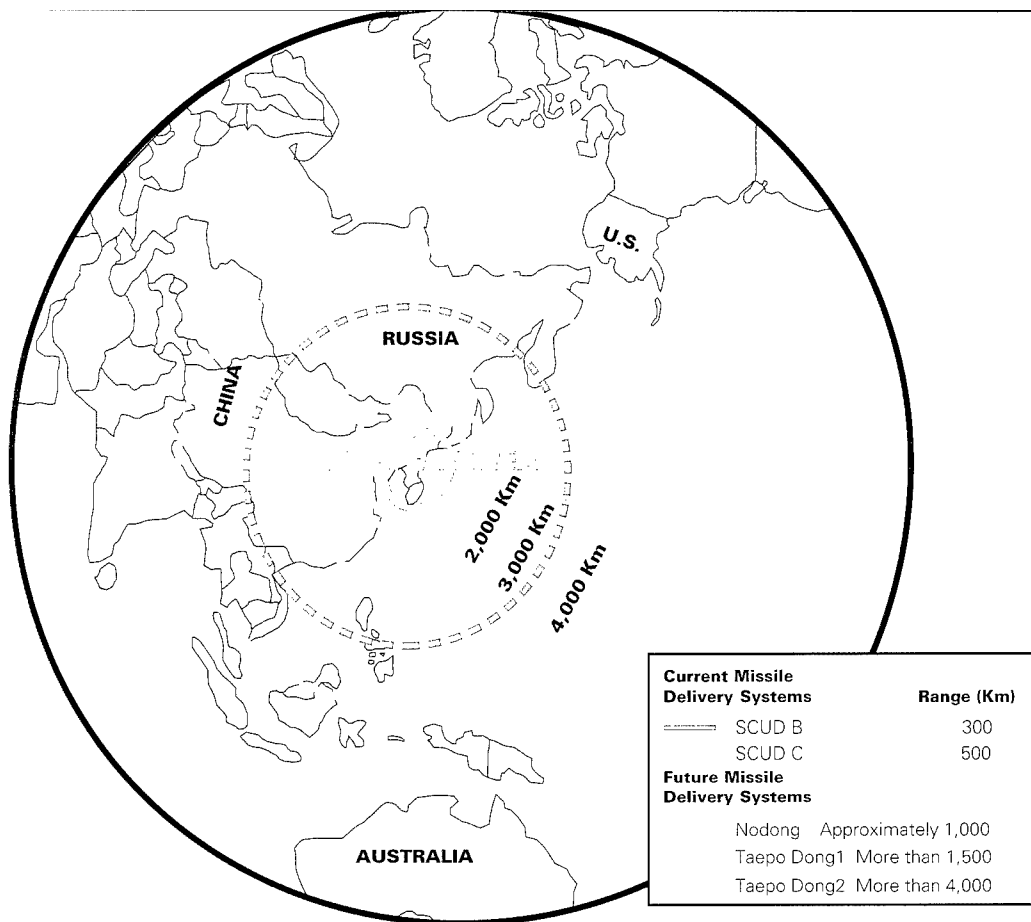
North Korea has not allowed the International Atomic Energy Agency to perform inspections sufficiently comprehensive at all sites to verify the operating history of the five-megawatt reactor, the amount of reprocessing accomplished and whether special nuclear materials have been diverted to develop nuclear weapons. Under strict adherence to the Agreed framework, however, North Korea must make its nuclear program completely transparent and must allow the IAEA to perform special inspections prior to the delivery of Nuclear Suppliers' Group controlled items to the light water reactors. North Korea also has obligated itself beyond its nuclear Nonproliferation Treaty and International Atomic Energy Agency requirements by agreeing to eliminate eventually all its existing or planned nuclear power and related facilities.

North Korea began to develop a chemical industry and a chemical agent production capability after the Korean War. It had made significant progress by the late 1960s, when it began to produce offensive chemical agents experimentally.

#### **SELECTED NUCLEAR AND MISSILE FACILITIES**

While the nuclear complexes at Taechon and Yongbyon play a key role in North Korea's nuclear program, it is the 200 megawatt facility at Yongbyon that would have enabled North Korea to develop additional nuclear weapons. Taepo Dong is North Korea's main missile testing and launch facility.





#### RANGES OF CURRENT AND FUTURE BALLISTIC MISSILE SYSTEMS

The North Koreans are designing two new missile systems — the Taepo Dong 1 and Taepo Dong 2 — which have estimated respective ranges of greater than 1,500 and 4,000 kilometers. Though neither missile has been flight tested, the designs of both are likely based on new combinations of existing missile system components.

Since the late 1980s, North Korea has intensified and expanded its chemical warfare program as part of its military preparedness plan. Today, it can produce large quantities of nerve, blister and blood chemical warfare agents, and it maintains a number of facilities involved in producing or storing chemical precursors, agents and weapons. A precursor is a commercial chemical that is necessary for the production of a lethal chemical agent.

#### Chemicals Have Priority

Since 1990, Pyongyang has placed a high priority on military and civilian chemical defense readiness. It has mandated training in chemical environments as an integral part of armed forces training and is attempting to equip all military forces, including reserves, with full protective gear. In addition, broad segments of the population engage periodically in simulated chemical warfare drills.

These drills ensure coordination and control of the population should North Korea employ tactical chemical weapons against opposing forces on its own territory. The drills also reinforce Pyongyang's propaganda that the United States and South Korea intend to employ chemical agents. Pyongyang has emphasized building and

installing protection equipment at military production and civilian alternate war-time relocation sites, and it directed the entire population be issued protective masks.

#### Program Begun in 1960s

At the direction of President Kim Il-Song, North Korea began to emphasize an offensive biological warfare program during the early 1960s. With the scientists and facilities for producing biological products and micro-organisms, North Korea probably has the ability to produce limited quantities of traditional infectious biological warfare agents or toxins and biological weapons.

North Korea has progressed from producing Scud missiles to establishing a broad-based missile industry, developing and producing a

variety of missiles both for its own use and for export. Serious ballistic missile development began in the early 1980s when Pyongyang started to reverse-engineer Scud-B missiles. North Korea now produces the Scud-B, with a maximum range of 300 kilometers, and a variant, the Scud-C, with a maximum range of 500 kilometers. Several hundred of these missiles are available for use in the North Korean missile force.

North Korea is in the late stages of developing the new Nodong missile for its own military and for export markets such as the Middle East and North Africa. Flight tested in May 1993, this 1,000-kilometer-range missile will be able to strike nearly all of Japan when deployed.

The North Koreans are looking well beyond the Nodong. Currently, they are designing two new missile systems — the Taepo Dong 1 and Taepo Dong 2 — which have estimated respective ranges of greater than 1,500 and 4,000 kilometers. Though neither missile has been flight tested, the designs of both are likely based on new combinations of existing missile system components.

North Korea has four types of land- and ship-based anti-ship cruise missiles. Since the 1980s, North Korea has produced two



variants with ranges of about 100 kilometers based on Soviet and Chinese technology. It is developing a longer-range anti-ship cruise missile, flight tested in 1994.

North Korea has a wide variety of combat aircraft capable of delivering nuclear, biological and chemical weapons, including MiG-29, MiG-23, MiG-21, Su-25, and Su-7 fighters; Il-28 bombers; and Mi-2, Mi-4 and Mi-8 helicopters. It could use its indigenously produced artillery, multiple rocket launchers, mortars and agricultural sprayers to disperse chemical agents. North Korea has a very limited air-to-surface missile capability.

North Korea has provided hundreds of Scud missiles to countries in the Middle East, such as Iran and Syria, and is developing and marketing the new 1,000-kilometer-range Nodong missile. These sales provide Pyongyang critically needed foreign exchange. North Korea has received millions of dollars worth of bartered goods and services and hard currency for its deliveries, and it will continue to market missiles and missile-related technology to support its weak economy. Although North Korea is an active supplier of missiles and related production technology, it has not yet become a supplier of nuclear, chemical or biological warfare-related technology.

## CHINA

Since mid-1991, China has shifted from avoidance to participation in international arms control regimes. In 1992, it acceded to the nuclear Nonproliferation Treaty and agreed bilaterally with the United States to abide by the guidelines and parameters of the Missile Technology Control Regime.

In 1993, Beijing signed the Chemical Weapons Convention. In October 1994, it reaffirmed its commitment to abide by the 1987 version of the control regime guidelines and committed not to export ballistic missiles inherently capable of reaching a range of 300 kilometers with a payload of 500 kilograms in exchange for the United States agreeing to lift the control regime Category II sanctions it imposed in August 1993 for China's transferring M-11-related equipment to Pakistan.

In addition, China has expressed support for negotiating a multilateral convention banning the production of fissile material for nuclear weapons and endorsed the 1994 U.S.-North Korean agreed framework.

While China continues to conduct underground nuclear tests, it has stated it intends to sign the Comprehensive Test Ban Treaty in 1996.

## Proliferation Concerns

Nonetheless, some Chinese commercial transactions, particularly transactions involving nuclear-, missile-, and chemical-related technologies to unstable regions such as the Middle East and South Asia, raise serious proliferation concerns. The Chinese continue to modernize their inventory of nuclear weapon systems, which now includes over 100 warheads deployed operationally in medium-range, intermediate-range and intercontinental ballistic missiles. Since becoming a nuclear weapons state in 1964, Chinese officials have declared a policy of "no first use" repeatedly and have stated China's nuclear arsenal is for self-defense only.

China has a mature chemical warfare capability and may well have maintained the biological warfare program it had prior to acceding to the Biological Weapons Convention in 1984. It has funded a chemical warfare program since the 1950s and has produced a wide variety of agents and weapons. Its biological warfare program included manufacturing infectious microorganisms and toxins. China has a wide range of delivery means available, including ballistic and cruise missiles and aircraft, and it is continuing to develop systems with upgraded capabilities.

China plans to expand its already substantial nuclear power program by constructing several new plants during the next 20 years. China continues to market its growing expertise in nuclear power technology to other countries, which adds to concerns about proliferating nuclear materials and know-how that may support weapons programs.

Because its conventional arms exports have declined significantly since the late 1980s, China's defense industry is reluctant to reduce its remaining arms exports. In the past, China has exported chemical warfare-related material and missile technology and components to Iran. Overall, China continues to try to balance its role as an aspiring global power that abides by international arms control regimes with its need to use exports to expand its influence abroad and sustain its defense industries. ▼

# C O N T E N T S



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## NBC RACE MARKS IRAQ, IRAN, LIBYA THREAT

*From the DoD report  
"Proliferation: Threat and Response,"  
dated April 1996*



## SALES, TRADES SPREAD ASIAN NUCLEAR KNOW-HOW

*From the DoD report  
"Proliferation: Threat and Response,"  
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**COVER:** Special Forces parachutists land during Combined Joint Task Force 96, in which 53,000 U.S. Army, Navy and Air Force members joined with the British Special Air Service.

Senior Airman Edward Littlejohn, USAF

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