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FIVE MILITARY LESSONS OF THE IRAQ CRISIS

INTRODUCTION

When Iraq's Saddam Hussein ordered his forces into Kuwait on August 2, he triggered an American response that put to the test years of United States military preparation for just such an emergency. Although shots have not been fired — yet — the dispatch of American troops to the Persian Gulf already has taught the U.S. a number of lessons that apply to the defense budget and to the longer-term debate over the missions, organization, and arming of America's armed forces in a post-Cold War world.

So far Operation Desert Shield justifies many of the crucial military decisions made over the past decade or so: bolstering airlift capabilities; expanding realistic training; stationing floating bases stocked with military equipment around the world; and equipping American forces with modern and technologically sophisticated equipment. These and other dividends of the U.S. defense investment of the 1980s enable America to confront Saddam with overwhelming military force, stopping further aggression. Only America, the world's remaining superpower, can carry out such an extensive and sophisticated military operation.

Shortcomings in Preparedness. Operation Desert Shield also reveals some shortcomings in America's military preparedness. Despite the purchase of eight "fast sealift" cargo ships over the past decade, the U.S. came up short on the ships needed to move such heavy weapons as tanks and artillery quickly to the Middle East. The U.S. finds, meanwhile, that a failure to resolve nagging issues like whether or not to field a new light tank can have serious consequences when war suddenly seems imminent. And the U.S. finds itself less than fully prepared to protect its soldiers, sailors, and airmen against the threat of an Iraqi attack with ballistic missiles and chemical weapons.

If Saddam fails to withdraw his army from Kuwait, and George Bush is compelled to order into battle the military forces now assembled in the Persian Gulf, the test of combat undoubtedly will provide new lessons to be learned. For now, some lessons already are evident:

Lesson #1: The U.S. defense investment of the 1980s paid off; Congress and the White House should go easy on defense cuts.

American military power, rebuilt during the 1980s, undergirds the national self-confidence that is Bush's strongest suit in his confrontation with Saddam. Precipitous cuts in the defense budget will threaten the military capabilities that have allowed the U.S. to react swiftly and decisively to Saddam's aggression against Kuwait.

Lesson #2: America has a leading military role in a post-Cold War world.

Only the U.S. has the military force and global stature to lead the international coalition now opposing Iraqi aggression. American military power will be essential to maintaining regional and global stability even if the Soviet military threat continues to recede.

Lesson #3: Power projection should be America's top military priority in the 1990s.

America's heavy investment in power projection — forces that allow the U.S. to respond quickly to military crises around the globe, including aircraft carriers, the Marine Corps, and airlift — proved its value during Operation Desert Shield. Serious deficiencies in U.S. power projection, however, have become apparent, particularly the shortage of "fast sealift" ships to move such heavy military equipment as tanks, armored personnel carriers, and artillery quickly into combat. As the U.S. reduces its reliance on forward bases in Europe, the Philippines and elsewhere, the importance of power projection will grow, and with it the importance of sealift, airlift, and such programs as the V-22 *Osprey*, a new aircraft needed to transport Marines from ship to shore.

Lesson #4: Technology matters, even against Third World foes.

Outnumbered in men and equipment, as they are on the Saudi peninsula, American forces still can be confident of victory, largely because of their technological edge. This should prompt a reconsideration of several advanced weapons that either the Pentagon or Congress has considered cancelling in light of the decreasing Soviet threat. Some of these include: FOG-M, an anti-tank missile in development; J-STARS, a new airborne radar that sees deep into enemy territory; and ATACMS, a deadly-accurate Army missile with a range of over 100 miles.

Lesson #5: The U.S. must be better prepared to meet a worldwide nuclear, biological, chemical, and ballistic missile threat.

U.S. forces in Saudi Arabia find themselves less prepared than they ought to be to meet Iraq's formidable chemical weapon and ballistic missile threat. These Iraqi weapons, as well as Iraq's advanced nuclear weapons program, highlight the need

for the U.S. and its allies to: maintain credible retaliatory forces; build defenses against ballistic missiles; stop exports that could be used to create mass destruction weapons; and take preemptive military action if necessary to eliminate potential nuclear, biological, chemical, or ballistic missile threats from such unstable leaders as Saddam or Libya's Muammar Qadhafi.

LEARNING FROM THE PAST

From its military successes, like last year's Panama operation, and its failures, like the death of 240 Marines in Lebanon in 1983, America invariably has learned lessons. A key lesson learned from these past crises is that once a decision is made to challenge an aggressor, halfway measures will not do. If force is to be used or threatened, overwhelming power must be brought to bear swiftly and decisively. Already, this lesson has been confirmed in the Persian Gulf. Saddam's forces still are in Kuwait, but he has not sent them to Saudi Arabia. America's first objective, stopping Saddam in his tracks, has been achieved through a massive deployment of U.S. military forces.

In the course of the American deployment, new lessons are becoming apparent. Some have immediate implications, such as putting more money in this year's defense budget for sealift and airlift. Others have longer-term implications, such as ensuring that the U.S. and its allies act more forcefully to stop the spread of nuclear, biological, and chemical weapons. Among the lessons of Iraq:

Lesson #1: The U.S. defense investment of the 1980s paid off; Congress and the White House thus should go easy on defense cuts.

Saddam is a tough foe. As of late September, he had 430,000 troops within striking distance of Kuwait, along with more than 3,500 tanks, 1,800 armored vehicles, and 1,450 artillery pieces.¹ Challenging Saddam's forces is requiring the most rapid deployment of major military forces in history. The U.S. has been able to accomplish this buildup in the Persian Gulf because of its defense investment of the 1980s. Precipitous cuts in the defense budget will jeopardize the gains that made this possible.

In late July, the U.S. military presence in the Persian Gulf area consisted of a handful of cruisers, guided missile frigates, and a single destroyer. By the end of August, one month after Saddam sent his armies into Kuwait, the U.S. had amassed tremendous firepower in the region, including: three aircraft carrier battle groups and the battleship *Wisconsin* at sea; about five tactical aircraft wings on the Saudi peninsula, including F-15 *Eagle* and F-16 *Fighting Falcon* fighters, A-10 *Thunderbolt* ground-attack aircraft, and F-117 *Stealth* fighter-bombers; nearly a

¹ Figures provided by Pentagon spokesman on September 25. The figures represent troops in Kuwait and southern Iraq, and supplement the testimony of Secretary of Defense Richard Cheney to the Senate Armed Services Committee, September 11, 1990. Cheney gave the following figures for forces actually in Kuwait: 174,000 troops; over 1,500 tanks and 1,000 other armored vehicles; 778 artillery pieces.

full Marine Expeditionary Force of 50,000 troops; most of an Army mechanized division with its complement of 300 tanks and 300 armored fighting vehicles; and elements of two Army infantry divisions, one with tank-killing *Apache* helicopters.

Many of the capabilities that are making this buildup possible were attained during the 1980s. Combat readiness was improved; Navy aircraft "mission-capable" rates were raised by 66 percent. Airlift was beefed-up with the addition of 19 C-5B *Galaxy* and 51 KC-10 *Extender* aircraft, which along with others already on order nearly doubled U.S. airlift capacity to about 47 million ton-miles per day.² Eight fast sealift ships were purchased from a private shipping company. Modern M-1 tanks and fighter aircraft such as Air Force F-15 *Eagles* and Navy F-18 *Hornets* entirely replaced older generations of equipment throughout the active force. Maritime Prepositioning Forces (MPF), or "floating bases" were dispatched to the Atlantic, Pacific, and Indian Oceans, each with 30 days of supplies for a Marine Expeditionary Brigade of 15,000 troops; these supplied the equipment for the first Marines to arrive in the Persian Gulf. Moreover, U.S. forces in Saudi Arabia are ready to fight: every Army division there has been through the National Training Center (NTC) within the past eighteen months. The NTC, established at Fort Irwin California in 1981, provides realistic desert training for U.S. forces against mock divisions armed with Soviet weapons and trained in Soviet tactics — just like the Iraqis.

Threat of Budget Cuts. To be sure, some things could have been done better. The U.S. still is critically short of fast sealift — ships to transport troops and equipment quickly to combat. U.S. forces still lack a light tank that can be moved in large numbers by air. The military is not as ready as it should be to face chemical weapons. But by and large, the U.S. has provided the training and equipment that its soldiers need to protect their lives and to defeat such foes as the Iraqis. This is more than could have been said a decade ago. The defense spending increases that made this buildup possible peaked in the mid-1980s. Since 1986, U.S. defense spending has dropped by 7.6 percent, and further cuts are coming. The Iraqi crisis highlights what the U.S. could lose if these cuts are made precipitously or unwisely. But such cuts still are on the table. Example: The House of Representatives version of this year's Defense Authorization Bill would reduce the size of the Army by 68,500 next year, meaning that nearly one in ten GIs would lose their jobs in a single year.

If these cuts had been made in 1990, the 24th Mechanized Infantry Division, the first Army heavy division to reach the Gulf, would have arrived significantly short on manpower and commensurately low on morale. Despite the crisis in the Persian Gulf, a declining Soviet military threat will permit the U.S. over the next five years to reduce the size of its armed forces — perhaps as much as 25 percent — and to cut as much as \$170 billion or so from the defense budget, excluding the costs of

² Ton-miles per day is the accepted measure of airlift capacity, arrived at by multiplying the number of tons moved by the number of miles they were transported.

the Persian Gulf operation or other unexpected crises. But Operation Desert Shield should serve as a reminder that ill-considered cuts in Pentagon spending will threaten the gains that make possible Bush's decisive military response to Iraqi aggression.

Lesson #2: America has a leading military role in a post-Cold War world.

Given the Soviet Union's deteriorating political and economic situation, the U.S. may soon by default find itself the world's only superpower. Even if the Soviet Union holds together and retains much of its formidable military power, it is not likely to engage in open aggression itself in the next few years, or to continue providing as much overt diplomatic and military support as it has in the past to such aggressive client states as Iraq. Less concerned about finding themselves at war with Moscow, America and its allies will have greater freedom of action in confronting aggressors who threaten to upset the global or regional stability supporting such Western interests as freedom of the seas, access to resources, and the survival of democracy.

Ultimately, the Iraqi crisis is not likely to stand as a paradigm for most security threats that America will face in coming years: countering terrorism and narcotics traffic, protecting Americans abroad, or intervention with relatively small and lightly-armed forces as in Grenada or Panama. The U.S. likely will address these threats unilaterally or in cooperation with a few other states directly involved. But for the rare, major military operation like Operation Desert Shield, Bush has set an important precedent in demanding that Western allies and regional partners contribute their fair share.

Limits of Cooperation. At Bush's urging, 25 nations now are involved militarily in the effort to reign in Saddam. Bush also is making effective political use of the United Nations, taking the lead in organizing an international embargo against Iraq under Chapter 7 of the United Nations Charter. Bush also has shown that he understands the limits of effective international cooperation, carefully avoiding so far the creation of a United Nations command in the Persian Gulf. A U.N. command would tie America's hands if military action were required, particularly if the command included Soviet forces. Moscow still cannot be counted upon as an ally against Iraq. In fact, at least 1,000 Soviet military and intelligence advisors remain in Iraq supporting the Iraqi war effort against the U.S. and its allies, along with another 6,000 Soviet technical advisors, many of whom are involved in the Iraqi defense industry.³

Regional military cooperation with the U.S. is particularly impressive. Saudi Arabia is making U.S. forces welcome on its territory, committing its own forces to the front, shutting down Saddam's pipeline across the Arabian peninsula, supplying U.S. forces in the Gulf with all the fuel they need, and increasing oil supplies

³ House Republican Research Committee, Task Force on Terrorism and Unconventional Warfare, *The Soviet Union's Support for the Iraqi Invasion*, September 6, 1990.

to make up for the loss of Iraqi and Kuwaiti oil on world markets. Other Arab states, including Egypt and Syria, are sending divisions to Saudi Arabia. Israel also is playing a critical role through its implicit commitment to attack Iraqi forces if they cross into Jordan, obviating the need to station U.S. forces on Iraq's western front.

Prompt Response. NATO allies Britain and Turkey supported the U.S. effort against Iraq from the start. A week after the Iraqi invasion, Turkish Prime Minister Turgut Ozal agreed to shut down Iraqi oil pipelines through Turkey. Britain also needed no prodding, providing warships and squadrons of *Tornado* and *Jaguar* attack aircraft within the first weeks of the crisis, to which it added in mid-September a ground force of 6,000 elite desert-fighting troops and 120 tanks.

In the face of heavy U.S. diplomatic pressure, loud complaints in Congress, and continued Iraqi belligerence, other Western allies gradually are expanding their commitments. France, which sent seven warships including the carrier *Clemenceau* early in the crisis, decided on September 16 to send a 4,000-man light armored brigade to Saudi Arabia. Perhaps most significantly, West Germany and Japan are breaking with their non-interventionist post-war policies to pledge significant contributions to the American-led effort to oust Saddam. After a September 16 visit to Bonn by Secretary of State James Baker, West German Chancellor Helmut Kohl promised \$2 billion and the use of German transport planes and ships for U.S. forces. The money will go to the U.S. and to such countries as Egypt, Jordan, and Turkey that are hard hit economically by the worldwide embargo of Iraq. Japanese Prime Minister Toshiki Kaifu on September 14 added \$3 billion to Tokyo's initial pledge of \$1 billion to support the Gulf effort. Japan also plans to send military support personnel to help U.S. and international forces in Saudi Arabia.

Lesson #3: Power projection will be America's top military priority in the post-Cold War world.

With the U.S. thinning its forces based in Europe, the Pacific Rim, and elsewhere around the globe, America will become ever more reliant on the capability to project military force rapidly into trouble spots to deter wars or to fight them. The Gulf operation demonstrates the value of such "power projection" forces as Navy aircraft carriers, Marines, rapidly-deployable Army divisions, and Air Force F-111 bombers. A Navy aircraft carrier was on the scene in the Persian Gulf, ready to provide air cover for the deployment of ground forces, even as Secretary of Defense Richard Cheney traveled to Saudi Arabia one week after the Iraqi invasion of Kuwait. By August 8, a day after the U.S. decision to send forces to Saudi Arabia, troops from the 82nd Airborne Division — the army's fast response force — were on the ground at the Saudi port of Al Jubayl. A brigade of about 15,000 Marines quickly moved into the port, where they matched up with tanks and other equipment unloaded from maritime prepositioning ships sent from the U.S. base on Britain's Indian Ocean island of Diego Garcia. Meanwhile, Air Force bombers and fighters moved into position in Egypt, Turkey, and prepared bases in Saudi Arabia. The operation validated years of planning and preparation by the U.S. Central Command, which was created in 1983 to defend U.S. Middle East inter-

ests, and now is led by General Norman Schwarzkopf, the top U.S. commander in the Persian Gulf.

Too often, however, efforts to improve "power projection" have focussed on so-called "light" forces, like the 82nd Airborne Division, lacking M-1 tanks or powerful artillery. But an army the size of Saddam's cannot be countered by light forces alone. During the first weeks of the U.S. deployment, light U.S. forces in Saudi Arabia were highly vulnerable. While superior U.S. air power would have helped blunt an Iraqi advance during this time, Air Force and Navy fighters would first have had to gain control of the air, and even then might not have been able to stop Iraqi armor on the ground. To ensure the defeat of Iraq's ground forces, the U.S. needs its own "heavy" forces — "armored" and "mechanized" divisions — containing M-1 *Abrams* main battle tanks, *Bradley* infantry fighting vehicles, Multiple Launch Rocket Systems (MLRS), and other heavy artillery.⁴ But the first Army heavy forces — elements of the 24th Mechanized Division — did not arrive until August 25, or 24 days after the Iraqi invasion of Kuwait, and still were not fully deployed by mid-September.

Sealift Crisis. It makes little sense to move heavy divisions by air; even the huge C-5 *Galaxy* airlifter can carry only two M-1 tanks. These divisions must be moved by sea. The 24th Mechanized Division was sent to Saudi Arabia aboard eight "fast sealift" ships known as SL-7s, one of which broke down and had to be towed across the Atlantic. Few other heavy forces yet have made it to Iraq, largely because of a lack of sealift. This inability to move heavy forces quickly is the most serious deficiency in U.S. force posture exposed by the Iraqi crisis.

The Navy's eight fast sealift ships were purchased in 1981 and 1982 from a commercial shipping company. These ships can travel at 33 knots, compared to 20 knots for most modern cargo ships, and as little as 10 to 15 knots for older ships. The result: the fast sealift ships can steam to the Middle East from the U.S. in about eleven days. Seventeen other modern cargo ships capable of about 20 knots were supposed to have been available from what is known as the Ready Reserve Fleet (RRF); only three were readied on time. As a result, tanks and other equipment of the 1st Armored Cavalry Division have been waiting in Houston, Texas, since the end of August without transport. Because of a lack of sealift, the 1st Armored Cavalry's equipment will have to wait for SL-7s returning from their first trip to the Persian Gulf before moving out.

Bargain Ships. The U.S. needs more fast sealift, perhaps up to three times the current eight ships. Congress authorized \$600 million last year for fast sealift, but Bush shifted \$217 million of this into other accounts used to pay military personnel costs. This money should be reinstated in the fiscal 1991 budget, as well as money for further procurement. Fast sealift is a bargain. A fast sealift ship costs between \$100 million and \$200 million depending on design.⁵ Its cost is comparable

4 A typical "mechanized" division contains 290 tanks; an "armored" division contains 348 tanks.

5 See "Saudi Deployment Highlights Fast Sea-lift Funding Debate," *Defense Daily*, August 10, 1990, p. 232.

to the \$174 million cost of a single C-17 cargo plane, now in development. The fast sealift ship carries 20,000 tons of cargo to the C-17's 86 tons.

As a short-term measure, the U.S. should purchase available modern sealift ships ("fast" sealift ships have to be commissioned since none are available on the open market) for the Ready Reserve Fleet (RRF). Also, the fiscal 1991 Pentagon budget should include at a minimum the \$225 million requested by the White House for the RRF, to modernize the fleet and boost readiness. In 1990, Congress neglected the RRF, cutting its budget to \$89 billion from the \$239 billion requested by the President.

The Pentagon also should look into shifting responsibility for the RRF from the Maritime Administration to the Navy, which may better ensure that modern cargo ships are kept ready to go in the event of a crisis. Over the longer-term, the U.S. should join research forces with Japan, which has done extensive development work on "ultra fast sealift," ships that would travel at speeds in excess of 35 knots, enabling them to outrun most attack submarines.

Importance of Airlift. The Iraqi crisis demonstrates U.S. forces' heavy reliance on airlift. U.S. C-5 *Galaxy* and C-141 *Starlifter*, operating at "surge" levels that saw a cargo plane landing in Saudi Arabia every ten minutes, brought 75,000 troops and 65,000 tons of equipment to Saudi Arabia in just over one month.⁶ The U.S. also relied, as planned, on chartered commercial airliners to ferry troops to the Middle East. This included 38 of the Boeing 747s and other wide-body civilian aircraft of the Civilian Reserve Air Fleet (CRAF) that have been modified to meet military requirements.

The problem is that the C-141s are beginning to reach the end of their useful service life. No plans exist to extend the life of the C-141 through what is known as a Service Life Extension Program (SLEP), or to re-open production lines for the C-5 *Galaxy*. In the absence of these plans, the only option for preserving or expanding U.S. airlift is to procure the C-17, which should have its first flight next year. The Pentagon's Major Aircraft Review in April cut the size of the planned C-17 fleet from 210 to 120, bringing its cost down from \$41.8 billion to about \$30 billion. The size of the fleet may have to be revised upward again, however, as a result of what has been learned through Operation Desert Shield.

Expanding Marine Capabilities. Over the past decade, the U.S. has invested heavily in Marine power projection capabilities, buying new cargo and troop transport ships, maritime prepositioning ships, and new landing craft that travel at high speeds on a cushion of air. The importance of the Marines is demonstrated today in the Persian Gulf — Marines were the first troops to arrive with heavy tanks (albeit older M-60s rather than M-1s) to match Saddam's. The only major Marine modernization program that has not been carried out is procurement of

⁶ See testimony of General Colin L. Powell, Chairman of the Joint Chiefs of Staff, Senate Armed Services Committee, September 11, 1990.

the V-22 *Osprey*. The *Osprey*, a small transport plane that takes off like a helicopter and tilts its rotors forward to fly like an airplane, would extend the speed, range, and safety with which Marines could move troops and equipment from ship to shore and within a combat theater. The Pentagon tried to kill the program in 1990 and 1991, but both houses of Congress have kept *Osprey* research and development funding alive. In addition to funding the *Osprey*, the U.S. should deploy another Maritime Prepositioning Squadron, the "floating bases" that proved so successful in getting equipment quickly to the Marines heading for the Persian Gulf. These bases should be stocked with modern M-1A1 tanks rather than older M-60s.

Deploying a Light Tank. Critical power projection needs like sealift often are not met because they do not have a strong constituency within the military services; the Navy brass simply doesn't like to spend its money on cargo ships that will carry Army equipment and be piloted by Merchant Marine captains. A light tank for the Army is another power projection requirement that has suffered from lack of support within the military services.

In its last two operations, in Panama and now in Saudi Arabia, the Army deployed the 82nd Airborne Division armed with its 77 *Sheridan* light tanks, the only light tanks in service with the Army. The *Sheridan*, which was built in the 1960s, is smaller and about one-third the weight of the 65-ton M-1. It is not as survivable as a heavy tank because it is lightly armored. But unlike heavy tanks, it can be transported in large numbers by air; eight or so might be carried in the hold of a C-5 *Galaxy*, compared to two M-1s. Despite its age, the *Sheridan* proved its worth against the lightly armed Panamanians. It is not the ideal weapon for challenging Iraq's T-72 heavy tanks, but until heavy M-1s arrived by sea two weeks after the decision to move U.S. forces into Saudi Arabia, the light *Sheridans* were the only Army tanks on the ground.

The Army rejected the deployment of a new light tank in the 1980s, perhaps because it feared jeopardizing funding for the M-1, or for its ongoing research program to design a new light tank that will be nearly as survivable as a heavy tank. Despite the Army's best efforts, however, the technology to build a survivable light tank remains years away. As an interim measure, the Army should modernize and overhaul some of the 1,000 *Sheridans* now in storage to boost the firepower of its light divisions, or purchase a version of the Rapid Deployment tank developed but never purchased during the 1980s.

Lesson #4: Technology matters, even against Third World foes.

As the Iraqi crisis has shown, U.S. forces may face the prospect of fighting outnumbered, particularly during the early stages of a conflict. Advanced technology is a "force-multiplier" that helps better the odds for U.S. forces by allowing them to shoot at greater distances, fire with more accuracy, and gather more intelligence information than an adversary. This technology includes missiles that allow a gunner to fire at a tank or plane and immediately seek cover; munitions that use sensors to seek out targets actively and strike with precision; and airborne radars capable of looking deep behind enemy lines to track moving targets. The bottom

line: advanced technology in the hands of U.S. forces helps protect the lives of American GIs.

Some of these new technologies are available today; others still are in development. The decreasing risk of war with the Soviet Union will allow the U.S. to slow the development of some advanced weapons needed specifically to counter Soviet weapons. Example: the Air Force's Advanced Tactical Fighter. But the Iraqi crisis demonstrates the advantages of technological superiority even against Third World foes. One of the first steps the U.S. took after Saddam invaded Kuwait was to increase its production of advanced *Patriot* missiles, the only weapon with even a limited capability to shoot down Iraqi *Scud* ballistic missiles, and the Army Tactical Missile System (ATACMS), able to strike such targets as command posts with precision up to 100 miles behind Iraqi lines. The Iraqi crisis illustrates the need for a number of weapons that the Pentagon, or Congress, has considered cancelling in light of the decreasing Soviet threat. These include: FOG-M, a long-range anti-tank missile guided by a fiber optic cable, now in development, that would be the ideal weapon against Iraqi armor; J-STARS, an airborne radar system used to track ground targets over great distances — it would have been so valuable for tracking Iraqi tanks in Kuwait that the Army and Air Force considered sending one to Saudi Arabia last month even though the system has just begun testing; and ATACMS, the Army's new long-range missile which the House of Representatives recommends cancelling.

Another system that would have proved extremely valuable had it been available to U.S. forces in Saudi Arabia is the Israeli *Harpy* drone, designed to home in on the signals emitted by radar to destroy anti-aircraft missile sites and command posts. The U.S. did not purchase *Harpy*, which is deployed with Israeli forces, because it preferred to continue research on its own system, known as ground-launched *Tacit Rainbow*. Ground-launched *Tacit Rainbow* still is in development, and its projected cost is about four times that of *Harpy*, if it ever is developed and deployed. The U.S. has no system equivalent to *Harpy* for suppressing Iraq's modern, mobile Surface-to-Air missile network, including SA-6 and SA-8 missiles.

Lesson #5: The U.S. must be better prepared to meet a worldwide nuclear, biological, and chemical weapon threat.

In Iraq, the U.S. finds itself on the brink of war with an adversary possessing chemical and perhaps biological weapons, ballistic missiles, and an extensive nuclear weapons research program. Washington must assume that American troops may face weapons of mass destruction, once associated only with superpowers or other advanced industrialized nations, anywhere in the world.

The Iraqi nuclear, biological and chemical threat already is out of hand. Iraq produces three kinds of chemical weapons, including mustard gas, which causes severe skin irritation and lung damage, and sarin and tabun, two forms of nerve agents which cause convulsions leading to heart failure or asphyxiation. It developed these capabilities with the help of West European firms as well as the Soviet Union. It has artillery systems, aircraft, and ballistic missiles which might be used to deliver these weapons against U.S. troops, bases, and ships in the Middle

East, and could be used in coming years to deliver them against American territory.

Scramble to Update. America has come up short in its preparations to fight on a chemically-contaminated battlefield. The U.S. is scrambling to update its outmoded chemical detection capabilities, borrowing 60 German *Fox* chemical-reconnaissance vehicles. These use an instrument known as a "mass spectrometer" to detect chemicals while operators remain inside the vehicle. The U.S. has nothing comparable. Only some of the U.S. forces in Saudi Arabia are equipped with the latest in chemical alarm units, a British-made hand-held device; the rest will have to rely on chemically-sensitive paper tied to a stick and dragged on the ground. Before the next crisis, modern European equipment should be purchased for all U.S. forces.

U.S. chemical protective clothing provides basic protection if worn properly, but can be oversaturated by a nearby attack. It was designed, moreover, for use in Europe and meant to provide some extra warmth in a cool climate — just the opposite of what is needed in the Saudi desert. Marines in the Persian Gulf are being issued new British-made suits and gas masks, which are considered more effective than U.S. equipment. Increased research and development into light-weight chemical protection suits, designed specifically for desert warfare, is a U.S. priority.

The U.S. also must ensure that it maintains its ability to retaliate in kind against a chemical attack. This capability, essential to deterring attacks in the first place, may be in jeopardy in coming years. The U.S. began in 1987 to produce a new generation of "binary" chemical weapons; these contain two inert chemicals that become lethal only when mixed after firing. They thus are safer to store and handle than older "unitary" weapons containing deadly chemicals. Some binary artillery shells have been produced, but binary chemical warheads for the army's multiple launch rocket system, and binary chemical bomb — known as "bigeye" — have not yet entered production.

Destroying Chemical Weapons. By the terms of this year's June 1 Bush-Gorbachev summit agreement, the U.S. and Soviet Union will cease producing chemical weapons as soon as the agreement enters into force, which could be later this year. Since the U.S. temporarily stopped production last spring due to a shortage of chemicals, no more U.S. chemical weapons will be produced if the agreement goes into effect. At the same time, the 1986 National Defense Authorization Act requires the Pentagon to destroy all of its older unitary chemical weapons by April 30, 1997. If this schedule is carried out, the U.S. will be left with only the binary ar-

7 See Baker Spring, "America's Options If Iraq Uses Chemical Weapons," Heritage Foundation *Backgrounder* No. 785, August 24, 1990.

tillery shells produced so far as its entire chemical stockpile. While the precise size of this residual stockpile is a secret, its total capability will be measured in hundreds of tons, perhaps less than Iraq's yearly estimated output of 700 tons. Bush would be wise to forego a chemical weapons production ban until the U.S. has produced a sufficiently diverse chemical stockpile, and until such countries as Iraq and Libya, not just the Soviet Union, are placed under verifiable chemical weapon constraints.⁸

Limited Effectiveness. Iraqi ballistic missiles create another, related, headache for U.S. forces in the Middle East. Iraq possesses Soviet-built *Scud B* missiles, some of which it has modified to extend their range from 185 miles to as much as 550 miles. It is not known whether Iraq yet has produced chemical warheads for these missiles. The U.S. has available a limited number of *Patriot* surface-to-air missiles which have been modified to shoot down missiles as well as aircraft, but their effectiveness is limited against chemical attack: *Patriot* may not do enough damage to chemical warheads, or destroy them at a high enough altitude to prevent deadly chemicals from reaching the ground.

A top U.S. priority should be the *Arrow* project, a joint U.S.-Israeli program to develop a defense against ballistic missiles. Because of its unique warhead and the high altitude at which it destroys incoming missiles, *Arrow* will protect a wider area than *Patriot* and will be able to protect against chemically-armed ballistic missiles. The U.S. should sign a new Memorandum of Understanding with Israel which would speed *Arrow* development. Research also should begin into a mobile *Arrow*, which could be used to protect U.S. troops in the field as well as fixed targets, such as airbases or cities.

But even *Arrow* is effective only against missiles with ranges of up to about 650 miles or so. The U.S. also needs protection for its own territory against intercontinental-range missiles, which in coming years could be developed by Iraq or some of the fifteen to twenty Third World countries with ballistic missile programs. Noting that Iraq tested a space-launch rocket in 1989, the Pentagon's Strategic Defense Initiative Organization (SDIO) Director Henry Cooper told The Heritage Foundation on August 29 that "once an ability to place satellites in orbit is achieved by any nation, it is not an extraordinary technical challenge to deliver weapons of mass destruction to essentially any place on earth."

Need for Strategic Defenses. While it would be unconscionable for a U.S. President to permit Iraq or other hostile states to gain the ability to strike America with nuclear weapons, the U.S. must be prepared to defend itself against the possibility. The most effective defense against intercontinental nuclear missiles is a layered strategic defense system. A system along the lines now being planned by SDIO

⁸ See U.S. Congress, Senate, National Defense Authorization Act for Fiscal Year 1991, pp. 81-86, and U.S. Congress, House, National Defense Authorization Act for Fiscal Year 1991, for discussions of chemical weapons production and arms control.

would provide complete protection against any feasible Third World missile force for decades to come.

Efforts to defend U.S. forces and territory against nuclear, biological, and chemical (NBC) weapons should be coupled with effective efforts to stop the spread of NBC technology. Iraqi nuclear and chemical weapons programs have been supported by technical assistance from Western, particularly West German, companies.⁹ Creation of a serious NBC control regime that imposes tight restrictions on the export of this technology should be the first order of business for Western allies and the Soviet Union. In cases where the control regime fails, the U.S. should be prepared to use covert military action to prevent the proliferation of mass destruction weapons. Action should include preemptive strikes on NBC facilities abroad when necessary to protect vital U.S. interests.

CONCLUSION

The dispatch of American troops to Saudi Arabia has deterred further Iraqi aggression. Whether these forces will have to go to war to push Saddam Hussein's armies out of Kuwait is still unclear. If so, new lessons undoubtedly will become apparent through the test of combat. Already, however, Operation Desert Shield reveals much about what the U.S. has done well, and what it has neglected, in arming and organizing its armed forces over the past decade.

On the plus side, in mere weeks following Saddam's aggression, America rushed enough forces to the Persian Gulf to stop an Iraqi invasion of Saudi Arabia. This would not have been possible without the U.S. defense investment of the 1980s, including the purchase of airlift, sealift, maritime prepositioning "floating bases," stepped up training and readiness programs, and modernized military equipment for all three services. If the U.S. cuts its defense budget precipitously in coming years, it is likely to lose the military capabilities that allow Bush to challenge Saddam decisively. One clear lesson of Iraq: military power matters, even in a post-Cold War world. No country but America can provide the international military and political leadership needed to stop Saddam, or future Saddams.

On the minus side, the U.S. finds itself short on sealift, particularly "fast" sealift ships needed to transport heavy U.S. forces — tanks, artillery, and armored fighting vehicles — quickly to the Middle East. Six weeks after the Iraqi invasion of Kuwait, the U.S. still had only one heavy division on the ground in Saudi Arabia, while another waited on the docks in Texas for sea transport. Sealift and airlift capabilities should be improved in coming years through the acquisition of two to three times the current inventory of fast sealift ships and purchase of the C-17 airlifter since no plans exist to upgrade or expand the present fleet of military air cargo planes. The U.S. also has found that the Army's failure to procure a light

⁹ See, for example, Gary Thatcher and Timothy Aepfel, "The Trail to Samarra," *The Christian Science Monitor*, December 3, 1988, for background on Western involvement in the Iraqi chemical weapons program.

tank, transportable in large numbers by air, added to U.S. vulnerability during the early days of the crisis when heavy tanks, which must travel by sea, were not yet available.

Another lesson learned from the Iraqi crisis is that technology matters. American forces arriving in the Persian Gulf remain outnumbered in troops and equipment. Their combat edge, in addition to superior training, is provided by weapons that are more capable than those of their adversaries. George Bush and the Congress will have to reconsider proposals to cancel or discontinue such advanced weapons as: FOG-M, a long-range anti-tank weapon, and J-STARS, an air-borne radar capable of tracking tanks and other vehicles behind enemy lines.

The U.S. also has found that there is a price to be paid for years of ignoring Iraq's expanding nuclear, biological, chemical (NBC) and ballistic missile capabilities. U.S. forces have had to scramble to prepare themselves for possible chemical attack by obtaining an emergency loan of *Fox* chemical reconnaissance vehicles from West Germany and advanced chemical protective clothing from Britain. Meanwhile, the U.S. stopped production of its own chemical weapons this year and will destroy most of its chemical arsenal by 1997.

Salutary Effects of Crises. The Iraqi experience reinforces the importance of new efforts to: maintain credible retaliatory forces against weapons of mass destruction; build defenses against ballistic missiles; stop exports of technology used in NBC weapons; and take preemptive military action if necessary to eliminate nuclear, biological, chemical or ballistic missile threats from such unstable leaders as Saddam or Libya's Qadhafi.

Crises can have a salutary effect if lessons are learned and incorporated into policy; after the U.S. frigate *Roberts* hit a mine in the Persian Gulf during reflagging operations in 1988, the U.S. decided to add ten minesweepers to its inventory by 1994, and another ten by 1998. If America learns the lessons of Iraq, deficiencies in America's defense posture can be corrected, even in an era of declining defense budgets. If not, America will find itself increasingly unprepared to meet the inevitable crises to come.

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