Desert Shield and Desert Storm
Implications for Future U.S. Force Requirements

John M. Collins
Senior Specialist in National Defense
Office of Senior Specialists

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DESER T SHIELD AND DESERT STORM
IMPLICATIONS FOR FUTURE U.S. FORCE REQUIREMENTS

SUMMARY

Desert Shield and Desert Storm were spectacular successes by almost any standards. Postmortem specialists who attempt to extract "lessons learned" from that experience nevertheless would be well advised to proceed cautiously, because campaigns against Iraq unfolded under conditions that may not again pertain.

This preliminary assessment summarizes U.S. Army, Navy, Air Force, and Marine Corps performance during the recent war, then relates it to past experience and potential threats in ways that might help decisionmakers determine the most suitable characteristics of U.S. armed forces for the rest of this decade. Significant findings include:

- Force reductions now under review should preserve sufficient flexibility to cope well with a wide range of realistic contingencies, because levels that cause potential adversaries to question U.S. capabilities could degrade deterrence and involve the United States in otherwise preventable wars.

- Needs for airlift and sealift forces that can function well under less favorable conditions in primitive areas seem more pressing than requirements for larger numbers.

- Strategic and tactical intelligence failures can be traced directly to the shortage of well-qualified, area-oriented human intelligence (HUMINT) specialists.

- Continued needs for division-sized parachute and amphibious assault capabilities are debatable, because neither has been employed since World War II.

- The rapid proliferation of ballistic missile delivery systems, some with nuclear and chemical warfare capabilities, indicates the probable need for expeditious development and deployment of tactical anti-ballistic missile (TABM) weaponry much superior to Patriot.

- The U.S. Navy may no longer be configured to deal best with the most likely threats, because it still emphasizes abilities to defeat Soviet rivals.

- Expeditious programs to develop and deploy advanced tactical aircraft may be difficult to justify during the impending period of budgetary constraint, because present models performed magnificently during Desert Storm.

- Redefinition of Army and Marine Corps roles and functions should be a high priority task, because it would fundamentally affect the future size, configuration, and capabilities of both Services.

Finally, the study is skeptical of contentions that Desert Shield and Desert Storm "proved" the permanent ascendancy of any strategy, tactics, or armed service. Requisite forces and formulas might be quite different at future times and in dissimilar places.
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DESSERT SHIELD AND DESERT STORM
IMPLICATIONS FOR FUTURE U.S. FORCE REQUIREMENTS

BACKGROUND, PURPOSE, AND SCOPE

Armies are more often ruined by dogmas springing from their
former successes than by the skill of their opponents.

Major General J.F.C. Fuller
"The Tactics of Penetration"
RUSI Journal
November 1914

Desert Shield and Desert Storm demonstrated military strategies, operations,
tactics, and logistics that were brilliantly planned and smoothly implemented.
Armed combat culminated in quick victory with incredibly few U.S. and allied
casualties. Displays of air power and technological proficiency were especially
impressive.¹

Postmortem specialists who attempt to extract "lessons learned" from that
experience nevertheless would be well advised to proceed cautiously, because
Desert Shield and Desert Storm unfolded under conditions that may prove to be
exceptions rather than rules. War with Iraq was a classic set piece. Both sides
took 5 1/2 months to prepare for that particular conflict, beginning on August
2, 1990 when Saddam Hussein seized Kuwait. Then President Bush said, "Go!"
It was conventional combat, for which U.S. armed forces are best organized,
trained, and equipped. Technologically inferior opponents occupied static defensive
positions, falsely anticipating frontal assaults similar to those they defeated during
the eight-year war with Iran.² Most were in known locations, exposed to allied
air and missile bombardment. Most remained passive, except for antiaircraft
batteries. Allied airmobile and armored forces, aided by satellite intelligence, thus
were able to maneuver at will on flat, featureless terrain to outflank foes
entrenched in Kuwait. One Marine Corps pilot summarized the situation perfectly
when he quipped, it was "like being in the Super Bowl, but the other team didn’t
show up."³

¹For a brief discussion of concepts and operations, see "Schwarzkopf: Strategy
Behind Desert Storm," and "The Persian Gulf War: Schwarzkopf Answers to

²Cordesman, Anthony H., The Iran-Iraq War and Western Security, 1984-87:

Future U.S. conflicts, perhaps in mountains, jungles, or swamps, may call for quite different qualifications than Desert Shield and Desert Storm. The twofold purpose of this report therefore is to provide some perspectives that might help Congress to:

- Appraise Desert Shield and Desert Storm experience
- Correlate results with future U.S. force requirements

This preliminary assessment relates performance throughout the recent war (August 1990-February 1991) with past U.S. conflicts and potential future threats to put U.S. force requirements in perspective. It impartially questions proposed reductions in some categories and proposed increases in others, with particular attention to the continued value of assets that saw little action, remained unused, or appeared to be malemployed. The report also speculates about abilities of the U.S. military establishment to cope successfully with problems if situations had developed less advantageously. What if Iraqi forces had overrun Saudi Arabian ports and airfields before the U.S. vanguard arrived? What if a contingency had erupted in Korea during Desert Storm? What if Iraqi SCUDs had struck in salvos instead of single shots? Presentations cover overarching subjects first, followed by service-specific topics, but treatment throughout emphasizes interrelationships.

**COMBAT FORCE AVAILABILITY**

The peacetime configuration of U.S. armed services strongly influenced options open to the United States and its allies during the confrontation with Iraq. The total inventory determined how many active combat forces of what type theoretically could assist Central Command (CENTCOM) in the Middle East, given competing commitments elsewhere. Readiness determined how rapidly reserve component forces could supplement the active establishment.

**ACTIVE FORCE LEVELS**

The active U.S. Army, Navy, Air Force, and Marine Corps, which total slightly more than 2 million uniformed personnel, comprised the world's third largest military establishment just before Iraq seized Kuwait. Desert Shield and Desert

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5 Only the Soviet Union and China maintain larger active military establishments than the United States (about 4.5 million and 3 million respectively, including internal security troops). *The Military Balance, 1990-1991*, London, Brassey's for the International Institute for Strategic Studies, Autumn
Storm nevertheless absorbed 40 percent or more of key U.S. combat forces (Figure 1), including an armored corps and seven air wings assigned to U.S. European Command. U.S. Atlantic and Pacific Fleets furnished six carrier battle groups and two battleship groups. The Department of Defense (DOD) could not establish unit rotation policies for U.S. elements in the Middle East, because U.S.-based replacements with comparable capabilities were too few. Abilities to cope with a second sizable contingency that adversely affected U.S. security interests, such as conflict in Korea, were much abridged beginning in August 1990, and remained so for several months after Desert Storm subsided.

Several retrenchment proposals are open for deliberation. The Secretary of Defense and Chairman of the Joint Chiefs of Staff, for example, have presented Congress a "six-year package that ... reduces U.S. military capability and force structure by very, very significant amounts." Defense spending, according to their plan, would contract to 3.6 percent of the U.S. gross national product by 1995-96. The DOD budget thereafter would fund an active force of 521,000 fewer military personnel (a 25 percent cut), 12 Army divisions vice 18, 26 tactical fighter squadrons instead of 36, and 150 fewer battle force ships rather than the 600 once envisaged.

The residue must possess deterrent and defense capabilities that correlate well with present and projected threats to compelling U.S. interests. The Secretary of Defense and U.S. commanders-in-chief around the world identify few serious threats, but some indicators nevertheless may bear additional scrutiny before force level decisions become final. Five countries with large armed forces, listed on Figure 2, are long-time U.S. adversaries who still make neighboring U.S. friends nervous (North Korea, Vietnam, Iraq, and Iran, plus Syria, an unanticipated U.S. ally during Desert Storm). The Soviet Union and China are question marks that likewise cause some queasiness.


8Defense Secretary Dick Cheney and Joint Chiefs of Staff Chairman Gen Colin Powell Testimony Before the House Armed Services Committee, Washington, Reuters Transcript, February 7, 1991, p. 6, 8, 10.
Figure 1

U.S. ACTIVE FORCES FOR DESERT STORM

<table>
<thead>
<tr>
<th></th>
<th>Total Inventory¹</th>
<th>Desert Storm Deployments²</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Army</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divisions</td>
<td>18</td>
<td>8</td>
<td>44%</td>
</tr>
<tr>
<td>Separate Brigades</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>Separate Regiments</td>
<td>3</td>
<td>2</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Navy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrier Battle Groups³</td>
<td>14</td>
<td>6</td>
<td>43%</td>
</tr>
<tr>
<td>Carrier Aircraft</td>
<td></td>
<td>375</td>
<td>51%</td>
</tr>
<tr>
<td>Fleet Air Defense⁴</td>
<td>(22) 260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attack⁴,⁵</td>
<td>(41) 466</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battleship Groups⁶</td>
<td>4</td>
<td>2</td>
<td>50%</td>
</tr>
<tr>
<td>Attack Submarines</td>
<td>99</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Mine Warfare⁷</td>
<td>12</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Air Force</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bombers⁴,⁸</td>
<td>(13) 139</td>
<td>(3)</td>
<td>23%</td>
</tr>
<tr>
<td>Fighter/attack⁴</td>
<td>(65) 1594</td>
<td>(32)</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Marine Corps</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divisions</td>
<td>3</td>
<td>2</td>
<td>66%</td>
</tr>
<tr>
<td>Air Wings⁴,⁹</td>
<td>(3) 355</td>
<td>(2)</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Total Personnel</strong></td>
<td>2,020,000</td>
<td>540,000</td>
<td>27%</td>
</tr>
</tbody>
</table>

³ One aircraft carrier per group, plus escorts.
⁴ Numbers in parentheses indicate squadrons.
⁵ Total inventory includes 176 dual-purpose FA-18 Hornets.
⁶ One battleship per group, plus escorts.
⁷ Five MSO and MCM, 7 MSC. Two more reserve MSCs deployed.
⁸ Fifty-six F-111 (1 squadron) and 26 B-52G (2 squadrons) deployed.
⁹ Total inventory includes 156 dual-purpose FA-18 Hornets.
Figure 2
THE LARGEST FOREIGN ARMED FORCES

<table>
<thead>
<tr>
<th>1 million or more</th>
<th>500 Thousand or more</th>
<th>250 Thousand or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soviet Union</td>
<td>S. Korea 750</td>
<td>Egypt 450</td>
</tr>
<tr>
<td>China</td>
<td>Pakistan 550</td>
<td>Ethiopia 438</td>
</tr>
<tr>
<td>India</td>
<td>Iran 504</td>
<td>Syria 404</td>
</tr>
<tr>
<td>N. Korea</td>
<td>Iraq 500?</td>
<td>Taiwan 370</td>
</tr>
<tr>
<td>Vietnam</td>
<td></td>
<td>Brazil 324</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Indonesia 288</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thailand 288</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan 249</td>
</tr>
</tbody>
</table>


Not many potential predators, large or small, seem eager to risk retaliation like that against Iraq. Kim Il Sung, for example, may never find a more propitious time to invade the Republic of Korea, but took no advantage of U.S. preoccupation with Persian Gulf operations. appearances, however, may be deceptive. Two of the last three major wars erupted abruptly and unpredictably (Korea, 1950; Iraq, 1990). U.S. military involvement in Vietnam expanded on short notice after mid-1965. Future U.S. force requirements may be equally unforeseen. Aggressors, moreover, may increasingly instigate small, exceedingly complex wars that avoid risks associated with mid- and high-intensity conflicts, yet achieve important objectives that undermine American interests. The U.S. record in such imbroglios is unimpressive.⁹

No one can calculate future needs exactly, but they are not infinitely adjustable. Force reductions now under review therefore should preserve sufficient flexibility to cope well with a wide range of realistic contingencies, because levels that cause potential adversaries to question U.S. capabilities could degrade deterrence and involve the United States in otherwise preventable wars that would be costly to win.

RESERVE COMPONENT READINESS

Battalions, squadrons, and smaller reserve component combat forces performed well for the U.S. Army, Air Force, and Marine Corps during Desert Storm. Separate Army National Guard (ARNG) brigades did not. So-called "round out" programs, in effect since 1974, presently affiliate six of them with active duty divisions that lack one brigade apiece, largely for budgetary reasons. The concept calls for each designated ARNG brigade to receive arms and equipment compatible with that of the parent division, train regularly with that division, and be ready to deploy with it on identical schedules. The gap between principle and practice, however, proved unbridgeable.

DOD called no ARNG brigades during early stages of the crisis, because the Secretary of Defense and his advisors believed they required considerable post-mobilization training to reach an acceptable state of combat readiness. The 24th Infantry Division (Mechanized) therefore departed for Saudi Arabia in August 1990 with a separate active brigade from Fort Benning, rather than its Georgia National Guard roundout. A brigade from the 2d Armored Division at Fort Hood, Texas replaced a Mississippi National Guard roundout before the 1st Cavalry Division sailed somewhat later.

Those substitutions seemed reasonable after the aforementioned ARNG brigades entered active service about December 1, 1990, along with one from Louisiana which was affiliated with the 6th Infantry Division (Mechanized) at Fort Carson, Colorado. Two-day training sessions per month plus the two-week summer camp were sufficient for platoons, companies, and probably battalions, but brigade requirements were too complex. Hardware shortages and mismatched skills made it impossible to take best advantage of the meager time available. Radios, for example, were in short supply. Officers and men often filled slots for which they were ill prepared. Vehicle maintenance, performed mainly by active forces or civilian contractors in peacetime, became a post-mobilization problem. Some critical ARNG items, such as computers, were incompatible with those of parent divisions. Personnel and logistic systems suffered in consequence. Most

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12 Ibid.

observers accordingly believe that the U.S. Army must devise new policies and procedures if it expects large ARNG elements to dovetail well with active combat forces on short notice.

Early mobilization of ARNG divisions to reconstitute a rudimentary Army rotation base in the United States might merit close scrutiny. That practice could permit six months to a year or more of predeployment training during protracted contingencies, depending on DOD rotation policies. ARNG divisions on active duty also could be committed piecemeal in emergency to facilitate unit replacements, if casualties dangerously depleted the Regular Army before ARNG post-mobilization preparations were complete.

At least three roundout options are open, as Figure 3 illustrates. Option 1 would replace one active brigade in designated divisions with an ARNG brigade in a much higher state of peacetime readiness than presently prevails. Option 2 proposes three active brigades in designated divisions, each with one roundout battalion, which would simplify training requirements. Option 3 recommends three active brigades with three active battalions apiece. Each battalion contains one ARNG maneuver company. All three options furnish every designated active division with nine roundout companies, which are basic combat elements and least difficult to prepare for action.

Roundout components, in accord with official concepts, should possess arms, equipment, and procedures that are fully compatible with those of parent divisions. Roundouts also should be located nearby to simplify continuous supervision by the division staff and facilitate frequent training with division troops. The 24th Infantry Division (Mechanized) and its Georgia National Guard roundout brigade clearly satisfy that criterion. The 1st Cavalry Division in Texas and its roundout brigade in Mississippi clearly do not. The 5th Division in Colorado and the 6th Division in Alaska are separated even farther from roundout brigades in Louisiana and Minnesota respectively.

**LONG-HAUL TRANSPORTATION**

Long-haul transportation moved forces farther at a faster pace than ever before during Desert Shield and Desert Storm. Elements involved all pressed to do their best beginning in early August 1990, because it was not clear whether Iraq would invade Saudi Arabia after seizing Kuwait, and if so how soon. CENTCOM put fighter/attack aircraft and a brigade-sized tripwire from the 82nd Airborne Division in place by August 8. Fully-equipped Marines began to bolster that vanguard the following week; two expeditionary brigades (each about the size of an Army division) were ashore early in September. The lead brigade of the 24th Infantry Division (mechanized) debarked about the same time. The first great surge, which deployed Desert Shield defensive forces, was complete before the end of October. A second surge from the United States and Western Europe

## Figure 3

**ARMY DIVISION ROUNDOUT OPTIONS**

<table>
<thead>
<tr>
<th></th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brigades per Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Roundout</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Battalions per Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>6</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Roundout</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Companies per Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Roundout</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total Roundouts per Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brigades</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Battalions</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Companies</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

**NOTE:** Comparisons are based on a notional division with three brigades, each of which comprises three battalions with three maneuver companies apiece.
deposited U.S. reinforcements for Desert Storm during the next three months. Routine runs sustained operations thereafter, although no U.S. airlift or sealift was available to handle a second sizable contingency.

Those impressive feats, however, transpired under nearly perfect circumstances that future U.S. conflicts may seldom duplicate. Ample time was available to assemble essential aircraft, ships, and crews then shuttle back and forth, because no enemy action interrupted the flow of U.S. forces and supplies aloft, ashore, or afloat while the buildup progressed. Modern seaports and air terminals were secure and plentiful. Prepositioned stocks were conveniently located. Allies arrived aboard their own or borrowed transports; some assisted U.S. movement. Saudi Arabia, the host country, was willing and able to furnish facilities plus substantial supplies, such as petroleum, fresh water, and food. Future U.S. long-haul transportation requirements should be considered in context with circumstances that may be less lenient.

AIRLIFT

More than 90 percent of all C-5 and C-141 transports in the U.S. inventory, active and reserve, ferried personnel, equipment, and supplies to the Persian Gulf, but they were not enough. Thirty-eight aircraft from the Civil Reserve Air Fleet (CRAF) hauled two-thirds of the troops and 13 percent of all tonnage during the first full month (August 7 to September 7, 1990). DOD called more on January 18, 1991. Crew fatigue rather than aircraft availability eventually became the limiting factor, although extensive, prolonged reliance on CRAF could have caused problems for some U.S. airlines.

No future contingency is likely to require more transoceanic airlift than Desert Shield and Desert Storm, which involved longer flights to and from the United States than any other conceivable objective area. Few countries, however, couple the airport capacity of Saudi Arabia with abilities to construct new terminals quickly and economically on hard, flat, bare surfaces. Continuing needs consequently exist for highly reliable passenger carriers and cargo aircraft that can land on and take off easily with heavy loads from short, improvised strips.


15 Prina, L Edgar, "Two If by Sea ... Are We Ready?," Army, December 1990, p. 12-13.

SEALIFT

Ships carried more than 90 percent of all material at an unprecedented clip. Critics nevertheless question whether "rapid deployment" is a contradiction in terms when applied to waterborne transport. Eight fast sealift ships, which steam at 30 knots or more, took almost a month to deliver the 24th Infantry Division (Mechanized). The first sailed on August 13, six days after President Bush issued Desert Shield orders; the last finished unloading on September 10. Most ships, somewhat slower (15-20 knots) and less well-equipped, took longer. Only 11 of the first 44 ships requested from the Ready Reserve Force (RRF) reported for duty on time. The 10 tardiest were 11-20 days late. Seventeen roll-on/roll-off (RO-RO) ships in the RRF were insufficient. Nineteen charters therefore were required. Ninety-one of 213 dry cargo ships that supported Desert Shield and Desert Storm (43 percent) flew foreign flags; crews in some cases had to be replaced, because they refused to enter the Persian Gulf. Fewer might be available for future wars.17

Plans that call for mobility forces able to project U.S. military power expeditiously to far distant places predate the Carter Doctrine (1980) and the Rapid Deployment Joint Task Force, which preceded U.S. Central Command. Sealift, however, still lags. Essential surge capabilities depend on speedy RO-RO and self-sustaining cargo ships that can load quickly and discharge across open beaches or through primitive ports that lack modern facilities. Eight "fast sealift ships," the best now available, are converted civilian container carriers. DOD accordingly might consider spending a larger share of its mobility budget for rapid deployment sealift. Innovative designs that could double or triple present speeds would be desirable. Rapid round trips, in turn, would allow fewer ships to transport requisite loads, and thereby reduce U.S. reliance on the RRF and foreign flags.

PREPOSITIONING

The initial Desert Shield surge depended heavily on equipment and supplies prepositioned near the objective area ready for use by U.S. military personnel delivered by air. Some was ashore in Saudi Arabia and Oman, but most was afloat. Two maritime prepositioning squadrons (MPS) supported U.S. Marines from locations in the Pacific and Indian Oceans. Each contained armored vehicles, artillery, other unit equipment, and supplies to sustain a Marine Expeditionary Brigade (MEB) for 30 days. The first of five ships from Diego Garcia reached Saudi Arabia in mid-August, followed by four ships from Guam. Two full MEBs were ready for action within three more weeks. Afloat Prepositioning Ships (APS)

at Diego Garcia began to furnish cargo handling equipment, fuel, and other useful items to early Army and Air Force arrivals.\textsuperscript{18}

Defense Secretary Cheney presently is weighing whether money for more fast sealift ships "might be better spent buying equipment for a division and putting it in a key spot."\textsuperscript{19} Several factors, however, influence such tradeoffs. Floating warehouses, for example, are susceptible to sabotage, especially by "frogmen" (techniques and technologies have improved immeasurably since Italian counterparts of SEALS penetrated British port defenses at Alexandria, Egypt on December 19, 1941, then planted explosives that put battleships Queen Elizabeth and Valiant on the harbor bed.\textsuperscript{20} Stocks prepositioned ashore may be tempting missile targets and are worthless if sites selected are remote from crises that erupt. Modernization and maintenance problems multiply over time, wherever storage takes place. Not many potential trouble spots offer transport points as convenient and secure as those in Saudi Arabia, where airlifted personnel were able to marry quickly with supplies and equipment. The value of prepositioning, in short, varies considerably with circumstances.\textsuperscript{21}

\textbf{MILITARY INTELLIGENCE}

Top U.S. political-military decisionmakers urgently required timely, accurate strategic intelligence concerning Iraq's military capabilities and intentions before, during and after Desert Shield and Desert Storm. U.S. commanders at every level in all four services required detailed combat intelligence concerning enemy forces they faced. Collection capabilities limited the amount of information available. Analytical capabilities limited conclusions drawn therefrom.


STRATEGIC INTELLIGENCE

The U.S. strategic intelligence community got off to a slow start, largely because the United States tilted toward Iraq throughout the Iran-Iraq war (1980-1988) and Iraq later was a low-priority U.S. interest. Satellite sensors detected the Iraqi troop buildup that began along Kuwait's northern border on July 20, 1990, and signal intercepts probably led CIA to predict the August 2 invasion the day before it occurred, but neither told how deeply Iraq would drive or how hard its forces would fight. Estimates predicated primarily on technological collection subsequently contained large loopholes concerning the overall strength, disposition, capabilities, limitations, and intentions of Iraqi armed forces. Debates about Iraq's abilities to withstand economic embargoes and naval blockades never were resolved.

Hindsight, for example, reveals that the vaunted Republican Guard was vastly overrated. Its will to fight was little better than other Iraqi forces. The original number of mobile SCUD launchers never was resolved (speculation spread from 18 to more than 200). Most knowledgeable observers believed that Iraq lacked nuclear weapons, but no one was certain and official debates about chemical warfare capabilities continued after combat ceased.

COMBAT INTELLIGENCE

The U.S. theater-level combat intelligence apparatus for Desert Shield and Desert Storm initially comprised a few specialists who accompanied General Schwarzkopf to Saudi Arabia in August 1990. Burgeoning capabilities, coupled with attacks that "blinded" Iraq, however, soon afforded coalition forces decisive advantages.

Space-based satellite sensors, employed for the first time in a large-scale conflict, furnished commanders and staff with unprecedented information, often in near real time. No mountains or vegetation obscured their view, which was

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25 "U.S. Intelligence In the Gulf and Into the 1990s," p.3.
crystal clear for the first several months. Sunlight during daylight hours cast strong shadows that were perfect for photo interpreters. Static targets were easy to identify and prioritize. Global positioning satellites helped allied land and air force pinpoint their locations and navigate trackless deserts. Other spacecraft-assisted SCUD alerts and meteorological forecasts. Two Joint Surveillance and Target Attack System (JSTARS) aircraft, plucked from development for Desert Storm employment, complemented Airborne Warning and Control System (AWACS) aircraft. The former monitored enemy ground force movement. The latter looked for Iraqi air attacks that never materialized. Both acquired targets for allied elements to engage.

Technologically derived intelligence, however, has severe limitations. Satellite coverage was incomplete, even on clear days, because sensors were not always overhead. Only Lacrosse, which carries synthetic aperture radar, could see through clouds that were increasingly worrisome after Desert Storm started. Reconnaissance aircraft were too few to fill gaps. The distribution system in many instances was unable to disseminate available data rapidly enough for recipients to benefit. Post-strike damage assessment thus was far from scientific. U.S. and British signal intelligence experts reportedly broke all Iraqi military codes and routinely monitored radio transmissions, but the dearth of skilled translators became a bottleneck. The shortage of Arabic linguists similarly restricted U.S. abilities to interrogate prisoners of war. Reliance on remotely located Saudi specialists, who did not always share their findings, was a poor substitute. Special operations forces had to establish listening posts and patrols deep in hostile territory, designate targets and collect other useful intelligence, because well qualified human intelligence (HUMINT) agents were in short supply. They were

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especially valuable during foul weather, but results suggest that abilities to locate mobile SCUD missiles were more or less hit or miss.\textsuperscript{30}

**FUSION AND FUTURE NEEDS**

Slow starts which typified U.S. strategic and tactical intelligence during the recent conflict with Iraq were scarcely aberrations. Basic intelligence on the tiny island of Grenada, for example, can best be described as substandard before Operation Urgent Fury opened in October 1983, despite warning signs that exceeded a year (U.S. aircraft bombed a misidentified mental hospital).\textsuperscript{31} Calls have continued for high performance reconnaissance and surveillance aircraft that could complement space satellites ever since SR-71 Blackbirds retired from the active inventory in 1989.\textsuperscript{32} The lack of HUMINT professionals able to furnish otherwise unavailable information from high-priority areas has been obvious for many years. Not all need be U.S. citizens, if the U.S. intelligence community develops indigenous networks in appropriate countries during peacetime.

Above all, strategic and tactical intelligence both would benefit from better integration. Concerted efforts to fuse electronic, signal, communications, photo, and human intelligence into an integrated whole greater than the sum of its parts almost surely would facilitate in-depth, synoptic coverage beyond current capabilities.\textsuperscript{33}

**FORCIBLE ENTRY FORCES**

There was no need for U.S. armed forces to seize a foothold on well defended shores at the onset of Desert Shield, because Saddam Hussein instructed his troops to stop (perhaps temporarily) in Kuwait. The U.S. buildup and subsequent combat would have developed quite differently if Iraqi invaders had moved immediately to occupy principal Saudi ports, airfields, and coastal territory as far south as Dhahran, then consolidate their hold. The closest friends ready to receive Central


\textsuperscript{33} U.S. Intelligence in the Gulf and Into the 1990s, p. 3.
Command (CENTCOM) contingents in such event would have been the United
Arab Emirates (UAE) and Oman. Israel, far to the West, was politically
inappropriate as well as remote. A survey of U.S. forcible entry capabilities thus
seems advisable.

PARACHUTE ASSAULT

Paratroops are organized, trained, and equipped primarily to conduct vertical
assaults, establish lodgments, and control critical terrain until forces moving
overland or across beaches relieve them. Early linkups usually are required,
because airborne units are lightly armed and lack much staying power.

The U.S. Army includes a single airborne division, based at Fort Bragg, North
Carolina. Whether one would have been enough to secure points of entry in Iraqi-
held Arabia is debatable (two were on alert throughout the Cuban missile crisis
in 1962.84) One division in any case requires more C-141 aircraft for parachute
assault than reasonably would have been available, given competition by other
rapid deployment requirements. Lengthy delays would have accompanied any
plan to stage division-size operations from the UAE, relying heavily on C-130
transports from the Air Force Reserve and National Guard.

Desert Shield experience, however, does not automatically indicate needs
for more paratroops and supporting airlift. On the contrary, it extends a 45-year-
old pattern, which suggests that less might be enough. The last large parachute
assault for forcible entry purposes occurred in Normandy on D-Day, June 6, 1944,
when General Eisenhower employed two U.S. and one British airborne divisions.
The final parachute assault by a full airborne division of any nation for any
purpose was the March 24, 1945 leap across the Rhine.85 U.S. regimental- and
brigade-scale drops since then have been few and far between: two during the
Korean War; one in Vietnam (largely for show); and one to spearhead Operation
Just Cause in Panama (1990). Two Ranger battalions also participated. General
Schwarzkopf assigned the 82d Airborne Division no assault missions during Desert
Storm.

U.S. defense decisionmakers, bearing that record in mind, should question
whether one or more airborne divisions coupled with adequate airlift are required
to cope well with present and projected threats. The existing airborne-qualified
ranger regiment, perhaps supplemented by a separate brigade, is one possible
alternative.

84House, Jonathan M., "Joint Operational Problems In the Cuban Missile

AMPHIBIOUS ASSAULT

Amphibious assault forces are organized, trained, and equipped to establish beachheads that facilitate rapid buildups by follow-on formations from sea and air. Suitable landing sites improve prospects for success and lessen the likelihood of high casualties.

The U.S. Marine Corps contains three active division-wing teams -- commonly called Marine Expeditionary Forces (MEF) -- and one in the Marine Corps Reserve. Sixty-four amphibious ships dispersed around the world, however, are able to lift less than one at a time. Assemblage in the Persian Gulf, coupled with preparation time, probably would have consumed much more than a month (it took a month for two unopposed brigades to receive prepositioned equipment). Shallow gradients and shoals characterized approaches to the 36-mile Iraqi waterfront, which consists mainly of mud flats. Kuwaiti beaches bristled with mines and other manmade obstacles. One Marine Expeditionary Brigade embarked on 34 amphibious ships within easy striking distance posed a threat that pinned many Iraqi defenders in place, but General Schwarzkopf never ordered an assault. All other Marines landed at secure sites.

Desert Shield/Desert Storm experience may not be typical, but seaborne assaults have been scarce since World War II. The last multidivision operation crossed Okinawa's beaches on April 1, 1945. The 1st Marine Division, minus one regiment, stormed Inchon, Korea in September 1950. All subsequent landings, like the one in Grenada (1983), have been much smaller. Decisionmakers who seek to determine the necessary number of MEFs might bear that lengthy record in mind and recall that army divisions (3 U.S., 2 British, 1 Canadian) conducted the most ambitious amphibious assault ever seen: D-Day landings in Normandy. Soviet doctrine, which assigns assault operations to a few naval infantry regiments, may also be relevant; tank and motor rifle divisions aboard merchant ships expand the footholds they seize. A thorough review of roles and missions perhaps should underpin future Marine Corps force structure (see subsequent section on that subject).

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36See footnote 15.


38Appleman, Roy E., South to the Naktong, North to the Yalu, Washington, Office of the Chief of Military History, Dept. of the Army, 1961, p. 488-514.


FIRST LINE DEFENSES

Demands for air and missile defenses to protect U.S. and allied command posts, forces, ports, airfields, and logistic installations arose as soon as Desert Shield started. An umbrella over civilian population centers and selected oil installations also enjoyed a high priority. Interceptor aircraft and surface-to-air missile units accordingly were among the first arrivals. Reinforcements that phased in later augmented initial capabilities.

AIR DEFENSES

The Iraqi Air Force, with few exceptions, showed little fight. Allied attacks immobilized most fighter-bombers before they took flight, by cratering runways and wrecking revetments. No fixed-wing aircraft or helicopters lasted long in the air except 130 some that fled safely to Iran. U.S. terminal air defenses thus were scarcely tested.

Such success may be elusive in future conflicts, because some potential opponents possess impressive tactical air combat capabilities and existing U.S. defenses are not well balanced. Ground-based apparatus ideally should comprise a complementary array of mobile surface-to-air systems, each with unique characteristics that make it impossible for enemy aircraft and cruise missiles to elude the envelope of one weapon without becoming vulnerable to others, regardless of altitudes and angles from which they elect to attack, day or night, in favorable or foul weather.\(^{41}\)

U.S. point and area defenses are somewhat less synergistic than that model, and most systems (even Patriot) incorporate 1960s or 1970s technologies, long since eclipsed.\(^{42}\) Studies to ascertain what corrective actions (if any) seem reasonable should start with threat assessments beyond the scope of this unclassified study. Progress meanwhile remains imperceptible.

TACTICAL BALLISTIC MISSILE DEFENSES

Iraq launched 81 SCUD surface-to-surface missiles at targets in Saudi Arabia, Israel, and Bahrain during Desert Storm. U.S. Patriot missiles intercepted 42


of them in flight and disregarded others too far off course to do any damage. Overall performance received high marks.43

Euphoria, however, may be unjustified. Patriot, designed primarily for terminal defense against aircraft and cruise missiles, displayed only modest antitactical ballistic missile (ATBM) capabilities.44 The system performed fairly well against single-warhead, unsophisticated SCUDs, which never were launched in salvos that made Patriot engage many targets simultaneously or in rapid succession (one at a time was the norm, with long intervals between). No SCUD released decoys to deceive defenders. Twenty-two missed intended marks by large margins. Nevertheless, intercepts occurred at such short range that debris sometimes rained down on targets that Patriot tried to protect. Untouched SCUD warheads seeped through when Patriot hit the missile's fuel tank instead of its lethal payload. Patriot never touched the SCUD that killed 28 U.S. military personnel and wounded 100 in a Dhahran barrack on February 25, 1991.45

The rapid proliferation of intermediate-, medium-, and short-range ballistic missile delivery vehicles and rockets among countries on every populated continent except Australia suggests that DOD should seriously consider versatile, reliable ATBM capabilities beyond the capacity of Patriot (Figure 4). Some of those missiles currently can carry nuclear or chemical warheads. Others may attain that status in the foreseeable future. Adequate defenses appear quite expensive, but the value of targets protected should make essential ATBM systems cost-effective.46


### TACTICAL BALLISTIC MISSILE PROLIFERATION

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<th>Missile Forces</th>
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**SRBM = Short-range (43-620 mi.)**  
**MRBM = Medium-range (621-1860 mi.)**  
**IRBM = Intermediate-range (1861-5100 mi.)**

ARMY DIVISIONS

Debates about the balance between heavy and light Army divisions began almost a decade ago. Champions of heavy divisions contend that Desert Storm confirmed the validity of their cause. Other evidence indicates that compromise positions may be preferable to either pole.

HEAVY DIVISIONS

U.S. armored and mechanized divisions performed admirably during Desert Storm. Tanks and Bradley fighting vehicles executed precision maneuvers rapidly on the open plains (3d Armored Division advanced 120 miles in one night), then easily defeated the Iraqi Republican Guard in battle. Only 4 of 1,956 M1A1 tanks and 3 of 2,200 Bradley's were disabled. Operational readiness rates exceeded 90 percent.47

Armored and mechanized divisions, which are much heavier than predecessors, nevertheless would have limited value if the next major contingency occurred in Korea's mountainous terrain or in jungles and swamps elsewhere. Many bridges, even in Europe, refuse to bear great weight (M1A1 tanks tip the scales at 67 tons combat loaded; the recovery vehicle currently under development weighs almost 70 tons, 13 tons more than the present model). Many roads that lack convenient bypasses are too narrow for heavy tank traffic. U.S. main battle tanks and armored fighting vehicles also preclude rapid deployment to meet emergencies. C-5 transports, the only U.S. long-distance cargo aircraft that can carry outsized loads, normally accommodate just one tank or four Bradleys per sortie. Heavy divisions consequently must travel largely by sea, a time-consuming process.48

LIGHT DIVISIONS

The U.S. Army's four light infantry divisions (LID) were conspicuously absent during Desert Storm, basically because they lacked sufficient firepower, mobility, and staying power to contribute significantly, unless augmented in many ways. The 82d Airborne Division, among the first arrivals, was largely relegated to rear area security roles for similar reasons after the Desert Shield buildup was well under way.


How many (if any) light infantry divisions should remain if the active Army total dwindles to twelve, as Defense Secretary Cheney proposes, is a controversial issue. The original rationale, which persists, postulates rapid deployment capabilities, plus utility against comparably equipped forces anywhere in the world or against heavy divisions under favorable conditions. Critics from the beginning, however, have questioned the combat capabilities of light divisions. Common complaints contend that LID's likely would be outgunned by most Third World adversaries, many of whom possess Soviet arms and equipment (one battery of eight 155mm howitzers comprises the largest LID artillery); that they are poorly protected (no armored vehicles and scant air defense); that they are mainly foot-mobile (only one of nine infantry battalions can be heliborne and one more motorized at any given time); and that scenarios which call for more than one LIC are unrealistic.

MIDDLEWEIGHT DIVISIONS

Some observers, bearing in mind the disadvantages of too many heavy or light divisions, believe the best future mix might combine heavy armored and mechanized infantry forces with rapidly deployable, agile, and lethal middleweight divisions that feature tanks and fighting vehicles able to fit into tactical air transport easily, and preferably tolerate parachute delivery. Senior commanders might form expedient light divisions by temporarily stripping selected accoutrements and personnel from heavy and middleweight formations to handle low-intensity threats, then reverse that process when needs cease. U.S. Army divisions in Vietnam, for example, left most vehicles in motor pools for the


60 Senior Army officers have declined to criticize light divisions openly unless protected by pseudonyms. See, for example, Damon, Sam and Ben Krisler, "Army of Excellence: A Time to Take Stock," Armed Forces Journal, May 1985, p. 86-87, 90, 92, 94. Other views are typified by Segal, David, "Army Light Division: Are They Fit to Fight?" Armed Forces Journal, October 1988, p. 82, 84,86,88.

duration of that conflict, but would have been ready for Desert Storm-style operations if required.

NAVAL COMBAT CAPABILITIES

The 7-ship U.S. Middle East Force based at Bahrain was on the spot when Desert Shield started. Naval reinforcements augmented that nucleus rapidly.52 Five carrier battle groups enforced the UN-imposed embargo against Iraq, acting in loose collaboration with ships from 14 other nations. Aircraft from six carriers participated in combat operations during Desert Storm from stations in the Persian Gulf, Red Sea, and eastern Mediterranean. Two battleships and perhaps seven attack submarines launched Tomahawk cruise missiles.53 Battleships and their escorts also furnished naval gunfire support for allied forces and U.S. Marines near the Kuwaiti coast. Minesweeping deficiencies predictably provided the only notable disappointments.54

U.S. naval warfare during Desert Storm conformed to a pattern that has persisted since World War II. The last "blue water" surface battle took place off Kyushu on April 6-7, 1945. The last enemy warship sunk by a U.S. submarine was the Japanese destroyer Nokaze near Saigon on February 19, 1945. The last victim of a U.S. submarine was a merchant ship in the Sea of Japan the following August.55 All subsequent engagements constitute two categories. Representative ship-against-shore operations include those connected with the Korean War, the Vietnam War, the Dominican Republic (1965), Lebanon (1983-84), Grenada (1983), and Libya (1986). All ship-to-ship encounters, excluding Cuban missile crisis confrontations, were small scale and close to coasts. The North Korean seizure of USS Pueblo (1968), the Mayaguez incident off Cambodia (1975),


53 Vice Admiral Roger F. Bacon, Assistant Chief of Naval Operations (Undersea Warfare), in unclassified testimony before The House Armed Services Committee on March 20, 1991 announced that 13 attack submarines participated in Desert Storm. Not all were present at one time, however, and some never engaged in combat, according to amplifying information from his office.


altercations in the Gulf of Sidra (1981, 1989), and Persian Gulf escort duty (1987-88) are typical.

America’s maritime strategy until quite recently emphasized abilities to deter and, if need be, defeat the Soviet Navy. U.S. Naval forces are still configured to perform those tasks, although most authorities, who include the Secretary of Defense, JCS Chairman, and the Chief of Naval Operations, believe Soviet threats are much muted. Decisionmakers therefore should determine whether basic changes in composition should accompany proposed naval force reductions. Fewer carrier escorts and submarines, for example, might be appropriate in the new context, if experience since 1945 remains relevant. More mine warfare ships seem advisable. Attention to underway replenishment ships could increase, if the U.S. Navy loses access to forward bases, such as Subic Bay in the Philippines.

TACTICAL AIR COMBAT FORCES

U.S. tactical air combat power was spectacular during Desert Storm. Army Apache helicopters fired the first shots when they destroyed two Iraqi early warning sites in the wee hours of January 17, 1991. Unarmed EF-111s, which specialize in electronic warfare, widened the corridor into Iraq when they jammed antiaircraft radars and fire-direction centers. Bombers, attack aircraft, and Tomahawk cruise missiles then began the systematic destruction of command-control-communications facilities, military airfields, and air defenses. Resultant air supremacy, swiftly achieved, thereafter allowed U.S. aircraft to strike at will from medium altitudes, almost with impunity. SCUD launchers, missile storage sites, electrical power plants, nuclear development facilities, and chemical/biological warfare factories were lucrative targets before coalition air forces turned their


attention toward the Iraqi Army. Air-to-air encounters were short and conclusive: the score was 42-to-0 in favor of allied forces. Ground fire downed 32 U.S. aircraft of all types during 43 days of Desert Storm. Other coalition forces lost 9. Those figures are phenomenally low, considering a combat sortie rate that averaged more than 1,000 per day (U.S. Army Air Forces lost 60 B-17 bombers, each with a crew of 10, during the Schweinfurt-Regensburg raid of August 17, 1943 -- 19 percent of the force -- and 60 more on a second raid two months later).  

**AIRCRAFT MODERNIZATION**

Tactical air operations against Iraq continue trends in motion for many years. Official Air Force, Navy, and Marine Corps accounts of air war in Korea and Vietnam concentrate on bombardment. Air-to-air combat received scant attention in comparison. Subsequent aerial encounters have been confined to minor altercations with Libya in 1981 and 1989. Carrier aircraft made substantial contributions, but land-based squadrons predominated.

Current generation U.S. tactical aircraft far outstripped expectations throughout the war with Iraq. Readiness rates for all types exceeded those recorded in peacetime, despite accelerated sortie rates and time aloft. Expeditious programs to develop and deploy advanced tactical fighters and

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improved interdiction aircraft, as presently proposed, therefore may be difficult to justify during the impending period of budgetary constraint, unless perceived threats clearly indicate requirements for immediate and major improvements. Replacements for SR-71 "spy planes" and close air support aircraft able to perform well at night and in bad weather might deserve higher priorities.\textsuperscript{66}

Future U.S. armed conflicts may not always favor Air Force and Marine aircraft with adequate bases ashore. Carrier air power sometimes might predominate. Vertical takeoff and landing capabilities could be more in demand by tactical air combat forces ashore. The current interservice mix therefore merits review. Navy officials moreover might reconsider the proportion of shipboard aircraft dedicated to fleet defense, if they wish to contribute more effectively to land battles.\textsuperscript{67}

\textbf{AIRCRAFT-Cruise MISSILE MIX}

Decisionmakers concurrently could reconsider tradeoffs between manned aircraft and land attack cruise missiles. Tomahawks, for example, demolished heavily-defended hard targets without endangering air crews during Desert Storm. Featureless plains imposed no obstacles between launch sites and precisely located targets. Terrain-following computers, however, might not work so well on short notice in poorly mapped regions that feature rough topography. Computerized data also are difficult to update rapidly after initial strikes obliterate landmarks. Some Tomahawks consequently became confused after bombardment levelled tall buildings in Baghdad.\textsuperscript{68} Reusable manned aircraft are much more versatile. Variable payloads can be tailored for particular targets. Crews can maneuver


to avoid enemy air defenses, assess situations on-the-spot, and adjust accordingly. 69 Some mix of manned aircraft and land attack missiles thus seems mandatory.

MARINE CORPS ROLES AND MISSIONS

Two Marine divisions, in concert with other coalition forces, breached Iraqi barriers on February 24, 1991 and quickly liberated Kuwait. Their performance, in General Schwarzkopf's words, was "absolutely superb ... a textbook, and I think it'll be studied for many, many years to come as the way to do it." 70 Marine aviation furnished direct support.

Those admirable actions, however, were remotely related to statutory Marine Corps roles and missions, which are to organize, train, and equip forces "for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign." A DOD directive further stipulates that those duties "do not contemplate the creation of a second land Army." Marines ashore nevertheless performed tasks that were indistinguishable from those of the U.S. Army, which prepares "primarily for prompt and sustained combat incident to war on land" (more specifically to "defeat enemy land forces and to seize, occupy, and defend land areas." ) 71 First, Marine divisions guarded Saudi Arabian oil installations and port facilities; 72 second, they defeated Iraqi land forces in Kuwait; third, they remained in Kuwait as a security contingent after the shooting war ceased.

Marine duplication of Army roles and missions is nothing new. Overlaps started early in the Twentieth Century with lengthy employments in Haiti, the Dominican Republic, and Nicaragua. Marine Major General John A. Lejeune commanded a composite Army-Marine division in France during World War I. Few Marines in Korea or Vietnam ever smelled salt water after the Inchon

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landings. That practice perpetuates a larger Marine Corps with different purposes than otherwise might be required.

Neither Title 10 nor DOD's amplifying directive presently address contingency roles and functions. Those deficiencies foster competition between the Marine Corps and Army over respective responsibilities. Early decisions seem advisable, because they would fundamentally affect the future size, configuration, and capabilities of both Services.

SPECIAL OPERATIONS

Special operations during Desert Shield and Desert Storm were shrouded in secrecy, but even a handful of declassified details indicate that the missions they performed were diversified and important. Skilled linguists accompanied more than 100 coalition formations to facilitate coordination with English-speaking forces on their flanks, arrange U.S. air strikes, and reduce the likelihood of casualties from "friendly fire." Special Forces collected intelligence, designated targets for U.S. aircraft using laser "pointers," searched for mobile SCUD missile launchers, severed land lines of communication, helped organize resistance inside Kuwait, and destroyed suspected terrorist safe houses in Kuwait City. Soil samples they provided the U.S. Army's VII Corps identified surface materials that would support armored traffic. SEALs conducted raids, reconnaissance, and sabotage operations closer to the coast. They also cleared some naval mines. Aircraft manned by crews skilled at clandestine infiltration and exfiltration participated in most special operations that penetrated hostile space. They comprised the only resource able to rescue downed fliers who otherwise would have fallen into enemy hands.


QUESTIONABLE EMPLOYMENT PRACTICES

U.S. special operations forces (SOF) are small, carefully selected, and superlatively trained to undertake risky tasks that other units could accomplish only with far greater difficulty and far less effectiveness, if at all. Each type is unique. Rangers, for example, are elite light infantry optimized for hit-and-run raids, ambushes, and other shock actions. SEALs, skilled at surreptitious operations, commonly reconnoiter and attack littoral targets of value to navies. Beach defenses, harbor facilities, submerged obstacles, and enemy ships in port typically attract their attention. Main missions of area-oriented Army Special Forces (Green Beret) detachments are to instruct foreign armed forces, paramilitary groups, and undergrounds in fine points of insurgency, resistance, or counterinsurgency. Their diversified repertoire of techniques runs a gamut from guerrilla tactics to civic action, subversion, evasion and escape. Uniquely qualified aircraft and crews furnish all SOF with highly specialized airlift, fire support, reconnaissance, and rescue capabilities while blacked out in bad weather.76

Misuse of SOF may squander valuable assets assembled at great expense in time, money, and training. Two lightly-armed Ranger battalions were decimated at Cisterna, Italy during World War II after being committed to sustained action like standard infantry. They were never reconstituted.77 SEALs took a shellacking during Operation Just Cause in Panama on December 20, 1990, when ordered to seize and hold Paitilla airfield (3 of 48 were killed in action, 1 died later, 9 more were wounded).78 A regular rifle company would have been more suitable for that mission. Uncharacteristic employment of Army Special Forces as intelligence collectors, target designators, saboteurs, and counterterrorists in Iraq and Kuwait had a happy ending, but nonetheless is open to argument. Their competence is unquestioned. Desert Shield and Desert Storm practice, however, risked hard-to-replace personnel who spent years acquiring language proficiency and cross-cultural understanding applicable to a particular geographic area.

U.S. defense decisionmakers therefore might better dispatch Special Forces teams to train selected allies and provide them the wherewithal to perform tasks like those outlined above. A more expensive but more dependable alternative


might be to form nondivisional U.S. units much like former long-range reconnaissance patrols (LRRPs) responsive to theater commanders.\textsuperscript{79}

**MISSED PSYOP OPPORTUNITIES**

Psychological operations (psyop), which may precede, accompany, replace, or follow applications of force, constitute the planned use of propaganda (broadly defined) and physical actions (such as terror) to influence the behavior of friendly, enemy, or neutral audiences in support of political-military aims. Saddam Hussein engaged in strategic psychological warfare throughout the campaign. Coalition efforts were largely confined to tactical endeavors connected directly with military plans and operations.\textsuperscript{80}

Saddam Hussein encouraged "oppressed" peoples throughout the Muslim world to overthrow their governments, which he called corrupt, promised to promote pan-Arab interests, redistribute wealth among "have" and "have not" Arab nations, and protect Islam against infidels. He encouraged pacifist sentiment in the United States, which suited his purposes perfectly, then claimed U.S. aircraft were deliberately bombing civilian residences and religious sites after the shooting war started (the alleged assault on a "milk factory" got extensive play in the U.S. press).\textsuperscript{81}

Coalition leaders, who could not foresee that he would fail, were justifiably concerned for several months, but made no cohesive, sustained countermoves, although many themes directed at the Iraqi people might have weakened Saddam’s position before and after Desert Storm started, if pursued adroitly and persistently:

- His disregard for the fate Iraqi armed forces
- His disregard for the suffering of Iraqi civilians


• His amassment of a personal fortune at their expense
• His waste of national resources on a military machine
• His brutal attacks on Muslim brothers
• His repression of minorities
• His cynical manipulation of Islamic religion and disregard for sacred tenets
• His deliberate disregard for international law: mingling military and civilian installations; collocating hostages and prisoners of war with military targets

No serious repercussions accompanied U.S. failure to employ strategic psyop effectively during Desert Shield and Desert Storm, but the future may not be so kind. A sophisticated, area-oriented psyop apparatus staffed by professionals and supported by specialized intelligence accordingly may be worth reconsideration.

INTERCONNECTING COMMENTARY

Planners, programmers, and budgeteers who prepare armed forces to refight the last war frequently do their nations a disservice, because conditions that foster success in one place and time period may not pertain to forthcoming conflicts. France reconfirmed that fact after Germany invaded in 1940. U.S. defense officials learned similar lessons in Vietnam.

Students of Desert Shield and Desert Storm thus should resist temptations to "learn" more from those experiences than the facts allow. Contentions that air power has emerged as the dominant influence on future warfare should cause some skepticism. Those who assert that no ground campaign can succeed anywhere in the world if opponents possess air superiority or believe that armored divisions will always be most desirable might remember the outcome in Southeast Asia circa 1965-72, when footsoldiers gained ascendancy. The U.S. Navy and Marine amphibious forces played supporting roles in the Persian Gulf, but conceivably could predominate in different environments.

Congress and senior DOD officials therefore might wisely defer decisions to reduce and reconfigure U.S. armed forces until they have digested Desert Shield and Desert Storm experience more thoroughly and have compared options with perceived threats.