

琉球大学学術リポジトリ

在日米軍の削減可能性を探る研究

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C4ISR. Because modernization of our forces depends on a strong C4ISR common backbone and because these systems require significant resources, the Department undertook a hard and sweeping look at our entire C4ISR effort. While a number of programmatic adjustments were evaluated, we did not change the general focus and amount of resources devoted to C4ISR in the QDR. The net effect of the programmed investments will be to substantially improve our awareness of various types of enemy forces in the areas adjacent to our forces and at longer ranges as well. We will continue to evolve toward more interoperable battle management systems with the initial deployment of the Global Command and Control System (GCCS) below the joint command level and into operational Service units. The Department is committed to achieving information superiority and to the resolution of remaining challenges over the next several years. A significant C4ISR challenge is to overcome deficiencies in our ability to move information in a timely manner to the lowest tactical levels. We will fund efforts to meet such challenges by correcting certain imbalances in the overall C4ISR program and by more aggressively using advanced technologies to reduce ongoing program costs. Decisions on C4ISR will be made in the context of other decisions on force structure, force design, weapons platforms, munitions, and information-enabled operational concepts.

JSTARS. The Joint Surveillance and Target Attack Radar System (JSTARS) provides radar data on fixed and moving targets from an airborne battle management platform that enhances our combat forces' ability to operate throughout the battlespace in responding to crises. In conflict, the JSTARS tracking data can be used by on-board and ground-based controllers to help direct timely attacks on a wide range of targets. Our approach to system development provides important enhancements to the U.S. JSTARS fleet and reflects our commitment to support NATO's consideration of the Alliance Ground Surveillance (AGS) capability.

The Department has decided to reduce the overall U.S. JSTARS fleet from 19 to 13 aircraft. A fleet of this size will provide round-the-clock coverage needed in a major theater war. Some portion of these aircraft would have to be redeployed in the event of a second major theater war. In addition, this fleet could be augmented by NATO JSTARS aircraft, if the allies collectively agree to fund the NATO AGS capability. The decision to limit the JSTARS buy also allows for funding to support the U.S. share of a four or six aircraft NATO AGS program. The six plane buy would allow for broader NATO participation, supporting our 30 April 1997 "fast-track" offer to our NATO allies.

We will also explore the potential for supplementing radar coverage of enemy force movements from long-endurance unmanned aerial vehicles (UAVs). In addition, our approach provides funds for key upgrades to U.S. JSTARS, including radar upgrades and improved connectivity to weapon platforms and broadcast intelligence.

Tactical Aircraft. Our review of tactical aircraft programs focused on the F-22 Raptor, the F/A-18 E/F Super Hornet, and the Joint Strike Fighter (JSF). We assessed alternatives to these programs from the standpoint of both warfighting risk and acquisition cost. Termination of any of the three fighter programs was not considered prudent given the warfighting risk of such a decision and the significant adverse impact it would have on technology development and the defense industrial base. However, the Department also

needed to balance such warfighting risk against the need to use scarce modernization funds prudently and to support acquisition program stability by planning for that which we can truly afford. The interrelationships among these programs were a significant factor, including the direct transfer of derivative avionics and propulsion technology from the F-22 to the JSF.

F-22. The F-22 is the Air Force's replacement for the F-15C/D in the air superiority role; it will also incorporate substantial air-to-ground capability. The F-22 will have a much-reduced radar signature, an ability to cruise at supersonic speed, and a new generation of avionics. It can also carry precision munitions that enable it to conduct air-to-ground attacks anywhere on the battlefield.

We have decided to decrease total procurement of the F-22 from 438 to 339 aircraft, consistent with its much greater capability compared to the F-15, as well as our overall affordability concerns and force structure decisions. This decision will provide three wings of this stealthy air supremacy platform. Consistent with this decision, we are slowing our ramp-up to full production of the aircraft. We will buy 12 fewer F-22s during Low-Rate Initial Production, thereby decreasing concurrency in the program. The F-22 program will build to a maximum production rate of 36 aircraft per year, down from the original planned rate of 48 per year, ensuring overall affordability beyond the program period. In the future, the Department will consider replacements for the F-15E and the F-117 long-range interdiction aircraft when they reach the end of their service lives beyond 2015. To make that decision, the Department will consider a range of alternatives, including the possible acquisition of variants of the F-22 for these roles.

F/A-18E/F. The Navy's principal fighter/attack acquisition program, the F/A-18E/F is an enlarged, much-improved follow-on to the proven F/A-18C/D, currently the backbone of carrier aviation. The E/F model has significantly greater range, carrier payload recovery capability, and survivability. It also will be able to function as a tanker for in-flight refueling. The F/A-18E/F affords valuable growth capability and more payload flexibility to effectively employ the next generation of stand-off weapons.

The Navy will plan on procuring a minimum of 548 F/A-18E/Fs, building up to a maximum rate of 48 aircraft per year in contrast to the previously projected peak rate of 60 aircraft per year. The ramp up to the full production rate of 48 per year will be delayed two years, from FY 2000 to FY 2002, in order to ensure funding balance during the program period. This will result in a reduction of 24 aircraft in the program period. The Navy will transition to the JSF as soon as the costs and effectiveness for the JSF are well understood and the aircraft is demonstrated to be superior to the F/A-18E/F. Depending upon the pace of JSF progress, this transition may begin as early as FY 2008, when initial production of the JSF is planned for the Navy. Should JSF development be delayed, additional F/A-18E/F aircraft beyond 548, to a total as high as 785 aircraft, may be added later as appropriate to sustain planned force structure. In the future, the Department will also consider variants of the F/A-18E/F as possible candidates for the eventual replacement of the EA-6B electronic warfare aircraft.

Joint Strike Fighter. The JSF will be the Department's largest acquisition program and the first to develop a family of common aircraft for use by land- and sea-based aviation

forces. The JSF will be employed by the Air Force, Navy, and Marine Corps in variants configured for each Service's specific needs. This tri-Service program reflects the judgment that developing three major new combat aircraft simultaneously would have been prohibitively expensive. The JSF is anticipated to have a substantial mission radius, high survivability, and will use advanced-technology design, materials, and manufacturing techniques.

Total procurement of the JSF was reduced to 2,852 aircraft, down from 2,978 in our previous long-range plans. A Joint Staff-led review of Service plans showed the prospect for inventory management efficiencies through such a reduction.

In addition to decreasing the total buy of JSF, the maximum planned production rate of 194 aircraft will be reached in 2012 rather than 2010, easing overall modernization affordability. Uncertainties in prospective JSF production cost warrant careful Departmental oversight of the cost-benefit tradeoffs in design to ensure that modernization and force structure remain in balance over the long term.

Marine Corps V-22 (MV-22) Osprey. The MV-22's unique tiltrotor design represents leap-ahead technology in supporting combat forces. Two changes in the MV-22 program are now planned. First, recognizing the urgent need to replace the Marine Corps' aging fleet of Vietnam-era medium lift helicopters, the Department will accelerate MV-22 procurement to a long-term rate of 30 aircraft per year in 2004. Based on the MV-22's superior capability relative to the CH-46 helicopter it will replace, the Department will reduce the MV-22 program objective from 425 aircraft to 360. By combining accelerated procurement with a reduced total buy, we will exploit the Osprey's demonstrated performance, dramatically improving our midterm operational capabilities while saving over \$3 billion in total program costs. The new program of 360 MV-22s reflects streamlined logistics requirements for the Corps' infantry battalions and divisions which are anticipated from the ongoing Marine initiatives such as the Combat Service Support Element Enterprise and the Sea Dragon advanced warfighting experiments. The new objective of 360 Ospreys also reflects the benefits of this modern aircraft's greatly increased reliability and maintainability. The accelerated procurement of the MV-22 reflects our commitment to modernization of Marine Corps combat capabilities, incorporating revolutionary 21st century technology.

B-2 Bombers. The Department has decided not to propose procurement of any additional B-2 bombers beyond the currently planned force of 21 aircraft. The assessment that led to this decision examined numerous trade-offs of other capabilities for more B-2 bombers in the broader context of the requirements identified during the QDR. It was aided by analysis conducted as part of the Deep Attack Weapons Mix Study that examined the advantages and disadvantages of reducing elements of our current force structure - other bombers, sea-based aviation, and land-based aviation - in order to procure additional B-2 bombers. The analysis showed that in a majority of the cases examined, additional B-2s deployed quickly to a conflict could improve our ability to halt an adversary's advance during the opening days of a major theater war. This was especially true in cases where there would be little or no warning of the conflict or where our tactical aircraft would be restricted in their access to the theater. In addition, the B-2 could use less expensive munitions in more missions than existing aircraft. This advantage, however, diminishes

as other low observable aircraft, particularly the Joint Strike Fighter, enter the force.

Against these advantages of the B-2, the analysis weighed several disadvantages. First, the B-2 would not provide the full range of warfighting and shaping capabilities offered by the forces it would replace. For example, missions such as air superiority, reconnaissance, and forward presence would suffer. Second, the additional B-2s did not provide the same weapons delivery capacity per day as the forces that would have to be retired to pay for B-2s. Although this difference is less important in the halt phase because of the B-2's superior survivability, it has greater impact throughout the remainder of the conflict after the adversary's air defenses have been substantially suppressed. Third, existing forces would have to be retired immediately to pay for the additional B-2s. Even then, the savings from retiring the forces are not enough to offset the large up-front investment for the B-2s in the FYDP. And, there would be a loss in warfighting capability during the decade or more between when the outgoing forces were retired and all the B-2s were delivered.

Deep Strike/Anti-Armor Weapons and Munitions. In the wake of the Deep Attack Weapons Mix Study, the Department determined that the current munitions programs, with modest adjustments, will provide the capability to defeat potential aggressors in the years ahead. The next generation of munitions will give our forces superior precision engagement capability against projected threats. The fielding of unitary and cluster bombs that can be delivered accurately from altitudes above the effective range of enemy anti-aircraft artillery and manportable surface-to-air missiles, standoff weapons that avoid dense concentrations of air defenses, and highly effective precision munitions will increase the survivability and lethality of our forces in future conflicts as called for in *Joint Vision 2010*.

For the "deep battle," the following systems will be procured in accordance with existing plans: the Wind-Corrected Munitions Dispenser carrying Combined Effects Bomblets or the "brilliant" Skeet anti-armor submunition; the Army Tactical Missile System with Brilliant Anti-Armor Submunitions (ATACMS BAT/BAT Pre-Planned Product Improvement); the product improved version of the Sensor-Fuzed Weapon, and the Joint Stand-Off Weapon (JSOW) with a unitary warhead. In addition, we will consider decreasing our buy of JSOW variants carrying Combined Effects Bomblets and Skeet; increasing our buy of Joint Air-to-Surface Stand-off Missile and laser-guided bombs; and changing the mix of Joint Direct Attack Munition variants. We will also continue Hellfire II production while analyzing the appropriate mix of Hellfire II and Hellfire Longbow missiles.

To maintain a balanced approach for the "close battle," the Department is continuing to evaluate a number of candidate anti-armor systems. Our evaluations to date support our commitment to the ongoing Javelin program as planned and demonstrate the potential importance of the "Follow-On to TOW (Tube-Launched Optically Tracked Wire Command-Link Guided Missile)" and M829E3 armor-piercing tank round. Working with the Services, the Department will reach decisions on the mix of these close-battle anti-tank weapons during the development of the next defense program.

Ship Modernization. The Navy's ship modernization program will ensure the United

States retains the ability to control the seas and project power ashore in peacetime and across the broad spectrum of contingencies. Procurement of the CVN-77, the tenth *Nimitz*-class carrier, continues the modernization of the nation's carrier fleet at a force structure level of 11 active carriers and one Reserve/training carrier. A total force structure of 12 carriers will allow the United States to sustain carrier battlegroup deployments at a level that helps shape the international security environment in support of our security strategy and commitments. Additionally, contingent on a reevaluation of peacetime overseas presence requirements, submarines will be procured at a long-term rate of one-and-one-half to two per year, consistent with a target force level of 50 attack submarines.

Army Ground Combat. The Army faces both near- and long-term challenges in executing its currently planned modernization program. Reductions in operations and support costs will help us achieve needed modernization funding increases and will provide some additional resources above those previously planned. These additional resources will address a number of the Army's most pressing modernization needs. For example, the Army will accelerate the fielding of a digitized (Force XXI) corps and complete Army National Guard Division Redesign more quickly.

"Digitization" involves the use of modern communications capabilities and computers to enable commanders, planners, and shooters to rapidly acquire and share information. This improved awareness will revolutionize the conduct and tempo of all phases of combat operations. The results of recent Army Warfighting Experiments at Fort Irwin and follow-on experiments will be used to determine the force structure, materiel requirements, and doctrine for digitized units. The Army had planned to field the first digitized corps in 2006. This corps now can be fielded one to two years sooner.

The Army National Guard Division Redesign program will relieve an important warfighting shortfall by converting lower priority combat brigades into higher priority CS/CSS forces. This program (described in detail in the Reserve Component Forces section) was established last summer but funding shortfalls have restricted the pace of conversion. The Department will now accelerate the pace by increasing both near-term and midterm funding and completing the program on a more realistic time line.

Although these actions will improve the Army's longer-term investment program, additional measures will be required to achieve a balanced modernization program. In the middle of the next decade, the RAH-66 Comanche helicopter and the Crusader self-propelled howitzer will enter production. Our review affirms that both systems are necessary to the Force XXI concept. Savings from planned Army personnel reductions alone will be insufficient to support both programs. Additional funds from sources such as base realignments and closures are critical to procuring these systems on the projected schedule. Programmatic changes, including reducing currently projected peak procurements and rephasing other major programs, may also be necessary.

Theater Ballistic Missile Defense. The QDR thoroughly reviewed all theater ballistic missile defense programs and identified programmatic issues in the THAAD system and Medium Extended Air Defense System (MEADS). Technical failures in the THAAD test program have required its restructure and brought into serious question the program's

ability to meet the 2004 target date. This restructure will improve the stability of the program, lower its risk, and allow us to explore increased commonality between the interceptor missiles and kill vehicles used in THAAD and the Navy Theater-Wide system. The MEADS program, a cooperative theater missile defense development effort with Germany and Italy, is currently unfunded beyond FY 1998. In the QDR, the Department decided to fund the program through FY 1999. The QDR reaffirmed our approach to the high priority Patriot Advanced Capability-3 and Navy Area Defense lower tier systems, Navy Theater-Wide upper tier system, and the Airborne Laser program. In addition, the Department is committed to continue pursuing increases in capability in attack operations to address the theater ballistic missile and cruise missile threats prior to launch, thereby reducing the stress and reliance on intercept systems.

National Missile Defense (NMD). Developing U.S. capabilities to deploy a National Missile Defense that will provide protection against a limited ballistic missile attack is a high national priority. The Administration established a development program aimed at creating the option to make a decision on deployment as early as FY 2000, if the threat warrants. The goal of the program is to be able to deploy an Initial Operational Capability within three years after such a decision is made. We determined in the QDR, however, that the existing NMD program could not meet these objectives within the programmed budget. The analysis further concluded that substantial additional funds should be directed to NMD over the next three years, but noted that even with additional funds, NMD will remain a program with very high schedule and technical risk. The Department has decided to add the needed funds totaling about \$2 billion. However, the precise amount and allocation over the coming years is still under review.

Cruise Missile Defense (CMD). In light of intelligence estimates that a cruise missile threat to U.S. forces may emerge after 2000, DoD has a substantial theater Cruise Missile Defense program. This effort could provide significant assistance to a national cruise missile defense effort. Over the next several years, the Department has decided to increase emphasis on national cruise missile defense.

Navigation. Upgrades to the space-based Global Positioning System (GPS) and compliance with Global Air Traffic Management (GATM) rules that will be coming into force over the next several years will require significant future expenditures which are yet to be determined. The navigation challenge is to efficiently implement upgrades to the GPS satellite constellation and user navigation equipment that allows us to respond effectively in time of crisis and to facilitate our participation in the GATM system and other navigation and safety efforts. The March 1996 Presidential Decision Directive (PDD) on GPS directs the Department to pursue the protection of our access to GPS positional information in the face of potential enemy electronic jamming and the ability to deny enemy use of GPS. A program decision in support of this directive is scheduled for late 1998. DoD efforts to ensure compliance with the new GATM regime are being coordinated by the Federal Aviation Administration (FAA) and the International Civil Aviation Organization (ICAO) and will involve significant investment to properly equip the Department's very large fleet of aircraft. The Department must introduce the needed navigation equipment to comply with the new FAA/ICAO procedures in order to preserve the worldwide deployment capability of our forces, avoid delays, and enhance air-space management capability.

TRANSFORMING OUR RESPONSE TO ASYMMETRIC CHALLENGES

Integral to our efforts to transform the Department for the future are our efforts to address a range of asymmetric challenges. Measures to prepare our forces to face these challenges, from fielding new capabilities to adapting how U.S. forces will operate in future contingencies, are already underway. To ensure that U.S. forces will be able to respond effectively to such challenges through the year 2010 and beyond, the Office of the Secretary of Defense, the Joint Staff, the Services, and the CINCs are working together in several areas. Chief among these are threats of NBC weapons use, terrorism, and information warfare.

Counterproliferation. In recent years, the Department has made substantial progress toward fully integrating the risks associated with an adversary's NBC weapons use into our military planning, acquisition, intelligence, and international cooperation activities. This need was underscored in the major theater war assessment done in the QDR. Accordingly, the Secretary of Defense has increased planned spending on counterproliferation by approximately \$1 billion over the program period, particularly for protective measures against chemical weapons. With this additional investment, the Department will continue to strengthen existing U.S. capabilities. These efforts will be critical to ensuring that U.S. forces have the counterproliferation capabilities they need as we move into the 21st century.

The QDR underscored two key challenges that the Department must meet as part of its strategy to ensure future counterproliferation preparedness: the Department must *institutionalize* counterproliferation as an organizing principle in every facet of military activity, from logistics to maneuver and strike warfare, and *internationalize* those same efforts to encourage our allies and potential coalition partners to train, equip, and prepare their forces to operate with us under NBC conditions.

To advance the institutionalization of counterproliferation concepts, the Joint Staff and CINCs will develop an integrated counter-NBC weapons strategy that includes both offensive and defensive measures. The U.S. military will continue to develop regular individual, unit, joint, and combined training and exercises that incorporate realistic NBC threats. Such training and exercises are the best means for testing operational concepts and doctrine and for fostering innovation and adaptation. Early deployment or pre-positioning of NBC defense and theater missile-defense capabilities and personnel into theaters of operations will also be explored.

Ongoing DoD programs focused on future counterproliferation capabilities include:

- Theater missile defense programs;
- Development of a capability to defeat hard and/or deeply buried targets;
- Biological weapon detection and emergency response programs;
- Chemical detection, protection, and decontamination;
- Increased funding for special operations forces counterproliferation activities.

Complementing these efforts to institutionalize counterproliferation concepts and enhance our ability to operate in NBC environments are U.S. efforts to internationalize counterproliferation by encouraging allies and friends to adapt similarly. Given the likelihood that U.S. forces will fight in coalition with others in the future, combined readiness is a key concern. Unless they are properly prepared to deal with NBC threats or attacks, allies and friends may present vulnerabilities for a U.S.-led coalition. In particular, potential coalition partners cannot depend on U.S. forces to provide passive and active defense capabilities to counter NBC threats. U.S. counterproliferation cooperation with its NATO allies through the Senior Defense Group on Proliferation provides a template for improving the preparedness of long-standing allies and potential coalition partners. In particular, efforts to strengthen international counterproliferation partnerships are currently underway with allies and friends in Asia.

Force Protection and Combating Terrorism. Over the past few years, and particularly following the attack on Khobar Towers, the Department has moved swiftly to reduce American vulnerability to terrorist attacks and to make U.S. forces as preeminent in combating terrorism as they are in other forces of warfare. The Department will ensure that U.S. forces operate under mandated standards for combating terrorism, improve intelligence collection, distribution, and information-sharing with allies, and strengthen our capability to protect citizens and military personnel from chemical or biological attacks with special emphasis on high threat regions. Future efforts will focus on enhancing both antiterrorism and counterterrorism capabilities and will range from policy initiatives to planning and training improvements, and the development of new operational systems to combat terrorism.

To ensure that the U.S. military has highly effective antiterrorism capabilities in the future, the Department will undertake several initiatives. The Department will enhance force protection training using a mobile "train the trainers" approach to reach senior leaders and their key staff. The Department also will continue to improve the newly created Chemical/Biological Incident Response Force, a Marine unit that performs consequence management in chemically and biologically contaminated environments. Finally, the Department will continually reassess the vulnerability of its facilities at home and abroad and make necessary improvements to safeguard their physical security.

The Department is also committed to improving sensitive counterterrorism training and technologies - those used to deter, defeat, and respond vigorously to terrorist attacks over the next decade. Counterterrorism forces will continue to receive the most advanced training available, exercise frequently to maintain proficiency, and develop new skills, and work with foreign peers to hone combined skills as well as develop mutual trust and confidence.

Although U.S. forces currently possess sophisticated systems for combating terrorism, the Department is increasing its research and development investment in this area. This funding will support several state-of-the-art development programs including: systems to detect, assess and disable large vehicle bombs; stand-off explosive detection capabilities; pre- and post-construction blast mitigation techniques for physical structures; capabilities to maintain surveillance of and tag and track harmful materials that can be used in terrorist attacks; and improvements to robotic vehicles used in counterterrorism

operations.

Information Operations. Efforts to exploit information technology to adapt and transform the U.S. military are well underway. To date, the Department has directed most of its efforts in this area toward protecting critical U.S. infrastructure against hostile information operations and developing U.S. information operation capabilities for use in peacetime engagement activities, smaller-scale contingencies, and major theater wars.

Although our current capabilities are adequate to defend against existing information operations threats, the increasing availability and decreasing costs of sophisticated technology to potential adversaries demand a robust commitment to improve our ability to operate in the face of information threats as we approach the 21st century. Critical to ensuring that ability will be the institutionalization of information operations - that is, the integration of information operations concepts into military planning, programming, budgeting, and operations. In the context of *Joint Vision 2010*, we will continue to develop additional guidance to strengthen information assurance - the protection, integrity, and availability of critical information systems and networks. Further, we will allocate adequate resources for these efforts within our information technology investment programs and improve the Defense-wide planning and implementation process, regularly assessing funding adequacies for all information assurance program components.

Defense against hostile information operations will require unprecedented cooperation between the Department of Defense, other federal agencies, the armed forces, commercial enterprises, our allies, and the public. The Department is working closely with the Presidential Commission on Critical Infrastructure to develop this cooperative relationship. Technical measures to protect military information systems, both hardware and software, are being greatly expanded, and all Services now provide capabilities to test and assess their information networks and systems. Capabilities to protect information systems must also extend beyond traditional military structures into areas of civilian infrastructure that support national security requirements, such as the telecommunication and air traffic control systems.

Offensive actions to disrupt our adversary's access to information are also part of U.S. military capabilities. Such capabilities will be increased in the future to ensure that the United States maintains information superiority during a conflict.

CONCLUSION

Preparing now for future challenges is critical to the success of our defense strategy throughout the 1997-2015 time frame. The Department is committed to implementing and underwriting *Joint Vision 2010* and complementary Service visions. Efforts to modernize our current force are integral to that implementation; even more important are efforts to leverage new technologies to harness the Revolution in Military Affairs through new operational concepts, new doctrine, and, ultimately, organizational changes. In addition, the Department must institutionalize innovative investigations, such as the battle laboratories and warfighting experiments, to ensure future concepts and capabilities are successfully integrated into the force in a timely manner. Finally, we

must remain ever vigilant against asymmetric strategies that threaten our forces and citizens by strengthening efforts to reduce their likely use and potential impact and by developing a range of response options. Through all of these efforts and activities, DoD is transforming itself at a substantial pace.

[Go to Section 8](#)

[Back to Table of Contents](#)

Section IX

DEFENSE RESOURCES

The QDR included consideration of the fiscal environment in developing a program to meet the requirements of the defense strategy. Absent a marked deterioration in world events, the nation is unlikely to support significantly greater resources dedicated to national defense than it does now - about \$250 billion in constant 1997 dollars per year. Indeed, any slowing of progress in reaching deficit reduction targets could generate pressure to lower DoD spending. At the same time, DoD already faces tensions among the resource priorities within its own budget and program.

The most immediate symptom of these tensions has been the chronic migration of funds the Department had planned for procurement to operations and support (O&S) activities. More fundamentally, the financial plans underlying the Department's commitment to maintain high readiness, protect force structure, and invest in modern equipment have become increasingly vulnerable to a range of potential disruptions, some quite likely and predictable, others more uncertain. Consequently, an important task of the QDR was to determine, on the basis of the chosen strategy, where to make program adjustments that would improve the Department's financial posture. The difficulty of making these determinations mirrored the fundamental challenge of the strategy: how to strike the right balance between meeting urgent obligations in the present and investing in imperative modernization for the future.

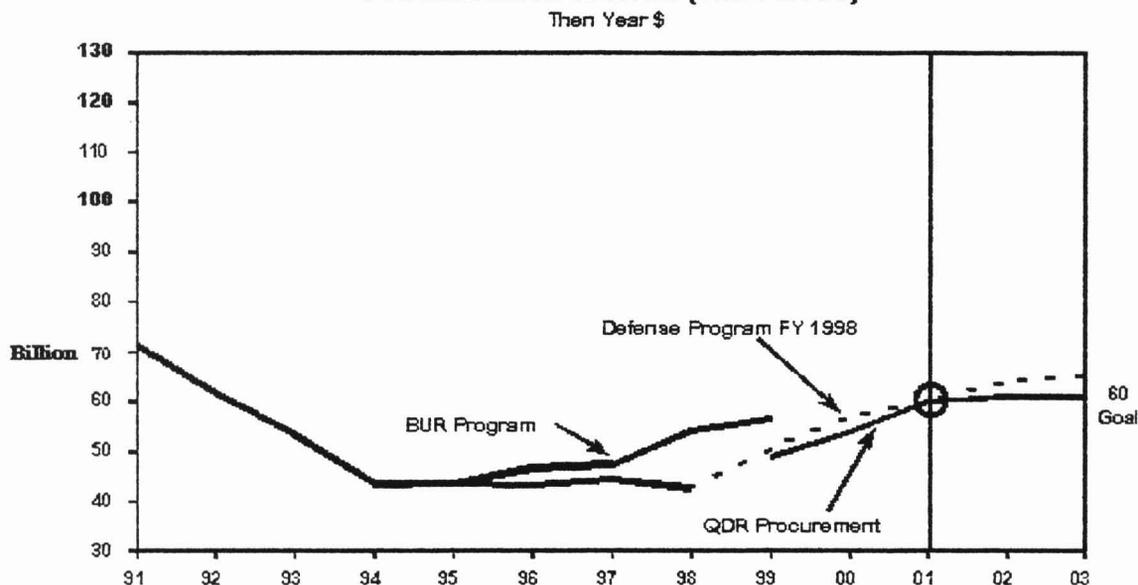
THE INVESTMENT CHALLENGE

Fulfilling a strategy of shaping the international security environment, responding to the full spectrum of crises and aggression, and preparing now for the future require substantial and ready forces, together with a focused program of investments to improve the equipment those forces will employ. Although existing plans continue to project significantly increased funding for modernization, the Department's record of having to pay operating expenses out of funding planned for investment threatens the viability of those plans. Therefore a focus of the QDR was to build a solid financial foundation for a modernization program that could reliably support the future warfighting capabilities called for by *Joint Vision 2010*. The key to that foundation is to halt the chronic disruption to modernization plans by properly projecting and funding the Department's operating and support activities.

The \$60 Billion Goal. To modernize the force, the Department established a goal of increasing procurement funding to roughly \$60 billion by FY 2001. The Chairman of the Joint Chiefs of Staff affirmed that goal during preparation and presentation to Congress of the last two defense budgets. Although we have made some reductions in the modernization program as a result of the QDR, \$60 billion remains the rough level of procurement funding the Department believes is necessary to modernize even the slightly smaller force that will result from the QDR. On the path to that goal, the Department has established somewhat lower intermediate targets of \$49 billion in FY 1999 and \$54 billion in FY 2000. Continuing efforts to reduce the costs of the defense infrastructure will be needed to achieve those targets.

QDR Procurement Goal

Procurement Trends (1991-2003)



The Modernization Imperative. In the years immediately following the end of the Cold War, the Department's reductions in spending came disproportionately from reductions in procurement spending, a decision that reflected a prudent, calculated risk initiated by the Administration of President Bush and continued by this Administration. This approach was possible because large quantities of modern equipment had been purchased during the 1980s and force reductions had permitted the retirement of older ships, aircraft, and armored vehicles in the early 1990s. That drawdown is now over, the dividend from procurement reductions has been spent, the procurement holiday must end, and investment in modernization needs to rebound. Otherwise, the technological superiority of our forces - and our ability to sustain their equipment stocks - will erode over time.

However, each new defense program since completion of the Bottom-Up Review in 1993 has had to postpone the previous year's plan to begin increasing procurement spending. As a result, with each successive budget, the trough in the Department's procurement plans has shifted one year into the future and the cumulative amount of procurement planned in each program has declined. For example, whereas the FYDP associated with the FY 1995 budget developed after the Bottom-Up Review had planned an increase to procurement in FY 1998 to \$54 billion, the budget submitted in February of this year requests procurement funding of \$42.6 billion. In addition, in the budgets for FY 1996-1998, there was a cumulative loss of \$18 billion in procurement funding relative to the BUR plan.

These postponements have been a reflection generally of the high priority the Department attaches to current spending on readiness. But in addition, they have occurred because our planning has not managed financial risk in a way that reflected the importance we also attach to investing in the future. As the most discretionary area of the

budget within an established force and operating posture, modernization has borne a disproportionate share of the disruptions and alterations that occur in the preparation and execution of budgets and programs. Unprotected from this pattern of migration, procurement plans most likely would continue the pattern of erosion they have experienced in recent years, and the planned increase from \$42.6 billion to roughly \$60 billion would fail to materialize.

ASSESSING RESOURCE CHALLENGES

Consequently, a principal resource management objective of the QDR has been understanding financial risk in the Department's program plans and devising approaches to manage that risk. The first step was a detailed analysis of the potential sources of instability that are built into the current FYDP, and the implications of that instability for funding requirements in the years beyond 2003. This analysis served to frame the fiscal context for making decisions in the QDR and will improve the prospects for full execution of the directions resulting from it.

The assessment focused on three sources of disruption to the Department's program plans:

- The *migration* to other accounts of funding planned for procurement during the FYDP.
- The accumulation into a "*bow wave*" of projected funding for modernization in the years beyond the FYDP.
- The *technical risk* and program uncertainty inherent in complex, leading-edge development efforts, which lead to unavoidable growth in costs and offsetting reductions in other programs.

Migration. The primary source of instability in the Department's current plans is the migration to other activities of funding planned for procurement. This chronic erosion of procurement funding has three general sources.

- *Unprogrammed operating expenses.* In the development of a new budget, unprogrammed must-pay expenses arise which displace funding previously planned for procurement. The most predictable causes of these expenses arise from underestimated costs in the day-to-day operations of the defense establishment, especially for depot maintenance, real property maintenance, military construction, and medical care. The least predictable of these expenses are for the incremental costs of unplanned deployments and smaller-scale contingencies.
- *Unrealized savings.* Migration also occurs when the savings planned to accrue from initiatives like competitive outsourcing or business process reengineering fail to achieve their expectations fully. Among the Department's efforts to accommodate a declining budget in the years since 1985 have been a great number and variety of initiatives to reduce the cost of doing the business of defense. While such initiatives have saved the Department many billions of dollars, they also introduce a significant source of instability into financial plans. Savings that fail to materialize

result in unplanned expenses which must be paid from the few discretionary accounts, principally modernization.

- *New Program Demands.* Instability also arises from changes to the Department's program plans. Important policy decisions can change our priorities in ways that require new investments where none were previously planned. An example that results from the QDR is the addition of about \$2 billion in development funding for the National Missile Defense program to support the "3+3" policy. Similarly, the Department may later need to sustain START I strategic force levels in the absence of the entry-into-force of the START II treaty. Enlargement of the NATO alliance may also give rise to new funding demands. Policy decisions like these each could cause migration of funds from procurement accounts and could displace or disrupt other investment plans.

The magnitude of financial risk associated with these sources of migration varies. Given the international security environment and strategy on which the QDR was based, the potential for at least some amount of unprogrammed costs materializing from, for example, contingency operations is high. The advent of other unprogrammed expenses, as from savings initiatives not fully realized, is much more uncertain and depends heavily on the Department's progress in more efficiently operating the defense infrastructure. On balance, the QDR proceeded from the assumption that, by the end of the current six-year plan, as much as \$10-\$12 billion per year of funding would be at risk to migration arising from unplanned bills, unrealized savings, and new program demands. Under those circumstances, procurement funding would erode from the planned level of more than \$60 billion in the FY 2001 to 2003 period, to a range of \$45 billion to \$50 billion, but no higher. Against the strategy and modernization priorities resulting from the QDR, a procurement program of no more than \$50 billion per year is clearly inadequate. Deterioration and obsolescence in equipment would erode long-term force structure and compromise the technological superiority of future forces. The concepts called for in *Joint Vision 2010* could not be realized.

To address the migration problem, the Department will redirect resources, building to about \$6-7 billion annually by the end of the FYDP, from the savings made available by trimming forces (see Section V), streamlining the infrastructure (see Section VIII), and adjusting modernization plans (see Section VII). Using these resources to program more accurately for the costs of operating the defense establishment and to hedge against the loss of the savings we expect to accrue from cost-reduction initiatives will go a long way toward breaking the pattern of erosion in our procurement plans. Although the savings identified in the QDR represent real progress in mitigating the possibility of future funding migration and will therefore substantially enhance stability of the defense program, further savings are needed to secure fully the planned modernization program.

A number of other steps can help address this challenge. Additional rounds of base realignment and closure would generate steady-state savings of up to \$3 billion per year. Deeper reductions to the defense infrastructure through more fundamental reform of these activities - a chief object of the Task Force on Defense Reform - could also generate needed investment funds in future years.

Without addressing the migration problem aggressively, there will be little margin for error in sustaining modernization plans in the face of unexpected demands for operating expenses or other new funding requirements.

Long-Term Challenges. The first long-term challenge to the defense program is represented by potential shortfalls in minor procurement funding. A growing shortage of smaller items of equipment may in the future present a demand for unplanned expenses that are essential to maintaining the material condition and readiness of U.S. forces. Items of equipment like generators, field kitchens, and incremental modifications to electronic equipment - things essential to field operations - are being funded in current plans at levels well below their historical average. These plans may reflect a change in the traditional composition of the Services' procurement requirements. But they may also reflect a shortcoming in the Department's planning for these requirements, introducing a risk to procurement plans somewhat akin to that of unforeseen requirements for depot maintenance and real property maintenance. These additional demands may require future growth in investment funding of some \$2-3 billion per year - further strengthening the Department's motivation to generate savings in infrastructure costs and to implement acquisition reforms to minimize the cost of the equipment needed to sustain the force.

A second long-term resource challenge concerns projections of funding requirements for modernization beyond the end of the current program in 2003. As successive FYDPs reduced the amount of procurement programmed in the six-year planning period, some of these reductions have accumulated into long-term projections, creating a so-called "bow wave" of demand for procurement funding in the middle of the next decade.

This bow wave is a source of risk to the long-term affordability of the Department's modernization plans. Since the Defense budget began declining in the late 1980s, the Department has paid closer attention to this risk. Current projections indicate that the accumulation of investment funding requirements in the years beyond the FYDP could grow by several billion dollars to support projected modernization programs. Though quite modest by historical standards and affecting selected programs, this bow wave would tend to disrupt planned modernization programs unless additional investment resources are made available in future years. Some of the rationalization of out-year modernization resulting from the QDR, especially in aviation, will have the effect of flattening the bow wave - improving future affordability and therefore the stability of the overall defense program. Realization of additional infrastructure savings through fundamental reforms and base realignments and closures will also help sustain the long-term modernization of the Department's forces.

Technical Risk and Uncertainty. Complex, technologically advanced programs all bear some risk of costing more than planned. When unforeseeable growth in costs occurs, offsets from other programs must be found, which in turn disrupts the overall modernization program. Our programming process must provide sufficient flexibility in the form of program reserves to address this risk. As a result of the QDR analysis, each military department plans to establish a prudent funding reserve in its out-year plans to offset these types of cost increases and significantly reduce one of the destabilizing factors affecting our modernization programs. Additionally, the Department will select several "pilot programs" that will carry similar reserves in the budget as a means of

mitigating significant cost or schedule impacts that arise in the year of execution.

A NEW BALANCE OF RESOURCES

The program adjustments resulting from the QDR will strike a better balance in the DoD's program and financial plans between meeting the urgent obligations of the present and investing in imperative modernization for the future. Consistent with the strategy and force posture, these adjustments will provide for a more stable and sustainable modernization program into the next century. However, even after taking these steps to protect procurement plans from disruption, some potential for migration will remain. The extent to which a more stable budget and program provide predictability, which in turn helps control acquisition costs, should mitigate some of that remaining financial risk. That some potential for funding migration will remain in the defense program after implementing the QDR only serves to underscore the importance of the Department's continuing efforts to achieve fundamental reform of its infrastructure and revolutionary changes in its business practices.

In terms of its impact on resources, the achievements of the QDR will not be immediately evident in the numbers. The total funding planned for procurement will be somewhat reduced from the out-year plans reflected in the FY 1998 President's budget. However, new budget projections that result from the QDR should be both more sustainable and less vulnerable to continued migration. The true test of any financial plan is not only in its numbers, but especially in the stability and reliability of its forecasts and in their suitability to the strategy that they serve. By this measure, the QDR will prove to have made a signal contribution to the Department's stewardship of the resources the nation commits to national defense. While upholding the capability and readiness of the force, the QDR will have launched a plan to modernize for the future whose foundation is more reliable and secure.

NEXT STEPS

The QDR has made a significant effort to understand the prospective programmatic and budgetary effects of the options it considered and resulting decisions, and this report faithfully reflects the results of that effort. Now that the QDR is complete, the Department will proceed to implement the blueprint of the QDR's broad direction by engineering its details into the budget for FY 1999 and program plans through FY 2003. The full implications of the QDR on programs and budgets will reach definitive expression in the submission of a new budget and program in February 1998.

[Go to Section 10](#)

[Back to Table of Contents](#)

Section X

COMMENTS BY THE CHAIRMAN OF THE JOINT CHIEFS OF STAFF

INTRODUCTION

The National Defense Authorization Act for Fiscal Year 1997, Subtitle B, Section 923 (c), directs that the Chairman of the Joint Chiefs of Staff provide an independent assessment of the Quadrennial Defense Review to the Secretary of Defense.

From the beginning, the Office of the Secretary of Defense, the Joint Staff, the Services, and the Combatant Commanders have worked together closely to ensure an open exchange of views and the greatest possible consensus. From the beginning, as well, it was agreed that the QDR had to be based on the strategy and that all recommended changes to the force structure and defense programs had to be tested against the proposed strategy.

The recommended changes outlined in your QDR report will strengthen our armed forces and provide our nation over the long term with the strong defense programs needed to protect America's interests well into the next century. However, for the QDR to have the desired effect, we must ensure that the savings it identifies be redirected to preserve our procurement accounts, to fix recently emerging readiness problems, and to do all that is necessary to maintain faith with our people, both military and civilian.

SECURITY ENVIRONMENT

The QDR started with a thorough, collaborative analysis of the future worldwide security environment. This process developed consensus on the complex world we will deal with in the near term, and the potentially more dangerous one we will face in the future. The conclusions which emerged and which guided the development of our defense strategy have my full agreement.

STRATEGY

Today we are presented with a unique strategic opportunity. For more than 50 years we were constrained by a bipolar rivalry with a superpower adversary. To deal with such a world, we relied on a strategy of containment and designed our military forces to react in case the strategy failed. Today and tomorrow, we have an opportunity to pursue a strategy of engagement and to design a military force to help the strategy succeed.

I fully agree with the defense strategy of helping to shape the environment to promote U.S. interests abroad; of being prepared to respond with ready forces to crises from smaller-scale contingency operations to major theater wars; and of preparing now for an uncertain future.

The more effectively we shape the environment, the less often we will have to respond to near-term crises. The more effectively we prepare for the future, the less risk we will run in dealing with crises in the longer term.

I support the QDR's recommendation to retain the capability to fight and win two overlapping major theater wars. In the near term, there are two regions, the Korean peninsula and the Middle East, where our national interests are at risk. In the longer term, regardless of how these potential crises are resolved, the United States will continue to have enduring national interests in separate areas of the world. If our country wishes to remain a global power, we will have to retain the capability to fight and win in more than one region at a time. The credible capacity to do so may mean we never have to use it.

Our challenge is to balance risk between near-term requirements and the need to prepare for the longer term. We must dominate the future battlefield, where technology will change the face of warfare, as we dominate it today. We must start now to prepare for a potentially more dangerous future which promises continuing risks and challenges, including asymmetric threats such as terrorism, chemical and biological weapons, and information warfare.

FORCE ASSESSMENT

The force structure and defense program recommendations in the QDR are based on a most extensive body of analysis. In my professional judgment, the resultant force is the minimum required to execute the strategy, and further reductions in combat structure would require a reevaluation of our strategy.

The QDR reaffirmed the need to retain a nuclear deterrent based on a triad of forces, as well as to retain 10 Army divisions, 12 aircraft carriers, 20 fighter wings, and three Marine Expeditionary Forces. It reaffirmed, as well, the requirement to keep approximately 100,000 personnel forward deployed both in Europe and in the Pacific and to regularly deploy naval, air, ground, and amphibious forces around the world.

On the other hand, analysis indicated that some restructuring of the force and the end strength reductions recommended in the QDR report can be accomplished with minimal impact on the combat force.

The strategy-based force assessment fully validates the specific recommendations to reduce selected National Guard units. The Army must restructure and downsize Guard units better to reflect requirements for federal and state missions and shed force structure retained from Cold War requirements for a strategic hedge. Given today's regional threats, the strategic hedge can be reduced and transitioned into capabilities that have greater utility across the entire spectrum, and fill a long-standing void in the support structure for sustained combat operations. The QDR adjusts National Guard end strength to improve its relevance in support of the defense strategy.

The assessment validated continued support for our airlift and sealift enhancement plans, but we must solve emerging problems in en route infrastructure.

Coincident to the QDR requirement to comment on revisions to the Unified Command Plan (UCP), the Joint Staff is conducting a biennial review as required by Title 10 of the U.S. Code. The UCP review process will be complete in fall 1997. Based on the review to date, it appears that the basic structure of the UCP is sound.

This QDR assessment process has highlighted the need for better analytical models that will allow us to accurately and rapidly conduct future force requirements analysis. These analytical tools need to capture the interaction of key variables in force-on-force assessments across the spectrum of military operations, from smaller-scale contingencies through major theater war. While professional judgment will always be required to use and interpret the models, we need better tools to conduct the analytical assessments of warfighting risk.

INFRASTRUCTURE

I strongly encourage a cooperative effort by the Executive Branch and Congress to follow through on reengineering of our infrastructure. The most prudent solution to fulfilling all three parts of the strategy is to "preserve the teeth by cutting the tail." We need to get every dollar we can by reducing our infrastructure - to include committing ourselves to two BRAC rounds and the necessary changes in law to permit further outsourcing. Ultimately, we must commit ourselves to a major reengineering of our infrastructure. Without that reengineering, the pattern of the last four years is likely to continue - investment programs will be cut and the force of the future will be sold to pay current operations and support bills. In short, we will not be able to realize the promise inherent in the Revolution in Military Affairs unless we embrace the revolution in business affairs.

INVESTMENT STRATEGY

As savings are realized from our force adjustments and the infrastructure reengineering, they must be applied to preserve the key modernization programs that prepare us for the future. Our QDR assessment concludes that developments in technology and future threats will erode current U.S. dominance unless we take strong steps. We must raise the level of defense procurement in order to improve capabilities in the long term. The QDR recommendations establish adequate procurement levels in the 2001 through 2003 time frame. The QDR also concludes we should ensure long-term warfighting capability by stabilizing procurement at planned levels and appropriately funding our operations and support. In order to accomplish this, the QDR recommends accepting the risk associated with thinning our active and reserve end strength, and our civilian manpower, and by restructuring a number of our weapons programs. I concur with the recommendations.

THE FUTURE

We must take a long-term view . . . 2010 and beyond. The initiatives undertaken as a result of this QDR will provide the nation with the military capabilities it needs, while achieving greater balance in the defense program. Reengineering of the defense infrastructure must make available the resources necessary to build the force with the capabilities articulated in *Joint Vision 2010* and spelled out in the Services' visions.

The future offers us great opportunities. Warfare is changing with the growth of technological change, and we must not only stay abreast of it, but dominate it. Remarkable advances in information technology, stealth, and precision strike promise a real revolution in military affairs. But implementing the RMA will require a sustained

effort, a process of balanced evolution toward revolutionary capabilities. *Joint Vision 2010* provides a prudent vector for combining revolutionary technical advances with new operational concepts to give us a force to dominate any future battlefield.

The QDR recommendations maintain a ready force while going a long way towards stabilizing the procurement necessary to build the force for the future. This stabilized procurement presents an opportunity to synchronize the development and fielding of advanced technologies with bold experimentation in the development of future joint capabilities. The Department faces an unprecedented challenge: transforming our military capabilities while supporting our role as the world's only remaining superpower. The key will be to manage the rate of change to achieve future capabilities without degrading present readiness. The QDR sets us on the correct path.

PEOPLE

The QDR highlighted once again that our major strength is our men and women and that our highest priority must be their welfare and that of their families. We have as fine a force as we have ever fielded and it must be preserved for our nation's future. Only the highest quality, dedicated, and well trained personnel with first-class leaders will be able to succeed in the complex and fast-paced environment of future military operations. Recruiting and retaining the best people the United States has to offer, committing to their continual professional development, providing them with challenging and fulfilling careers, and ensuring their quality of life must remain our top priorities. Pay and benefits are only part of the answer. We must provide a reasonable degree of stability for our soldiers, sailors, airmen, and Marines after having committed them to operations, deployments, or hardship assignments.

I am concerned about our high operating tempo. We are beginning to understand the many complex factors that drive this tempo, from routine training to major deployments. With the Combatant Commanders and Service Chiefs, we are developing the tools to assess and manage the strain on people of training, exercises, and operations demanded by our strategy. We will continue to develop our management information and policies until we can carry out the strategy without over-stressing the force. This initiative will take the leadership and cooperation of the Secretary, myself, the Service Chiefs, and the Combatant Commanders. We have no more important task.

There are a number of actions we can and will take now to reduce the pressure on the force: we will continue to reduce the stress on especially busy units, we will trim total exercise activity, and we will lower the turbulence in deploying units.

Because the QDR recommends further personnel reductions, we must have the proper programs in place with adequate resources to carry out these reductions in a manner that honors our obligations to those who have served us so well.

SUMMARY

The Quadrennial Defense Review proposes the correct strategy to protect our interests today and into the future. It makes proper end strength reductions, program adjustments,

and reengineering of our infrastructure to prudently balance near-, mid, and long-term risks.

The QDR embraces three steps in reforming our program. First, a vision; and we have one in *Joint Vision 2010*, supported by each Service's vision. Second, investment to both recapitalize and modernize the force. The QDR modernization decisions are investments in the right capabilities. Third, a stabilized future defense program so that we can execute procurement as planned. Our ability to have the resources in the long term to maintain the best military force in the world will depend to a large measure on our success in reengineering the infrastructure.

This has been a major effort. It was grounded from beginning to end, in strategy. It encouraged innovative thinking, but it set as its standard whether the recommendations will lead to a balanced, joint force best suited over the near, mid, and long term to protect America's interests. I fully support the recommendations of this Quadrennial Defense Review.

/SIGNED/

JOHN M. SHALIKASHVILI
Chairman of the Joint Chiefs of Staff

[Go to Glossary](#)

[Back to Table of Contents](#)

GLOSSARY

AGS Alliance Ground Surveillance

ARG Amphibious Ready Group

AWACS Airborne Warning and Control System

BRAC Base Realignment and Closure

BUR Bottom-Up Review

C4ISR Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CBW Chemical and Biological Weapons

CMD Cruise Missile Defense

CONUS Continental United States

CORM Commission on Roles and Missions of the Armed Forces

CS/CSS Combat Support/Combat Service Support

DTO Defense Technology Objective

eSB enhanced Separate Brigade

EXFOR Experimental Force

FAA Federal Aviation Administration

FCS Future Combat System

FSU Former Soviet Union

FY Fiscal Year

FYDP Future Years Defense Program

GATM Global Air Traffic Management

GCCS Global Command and Control System

GPRA Government Performance and Results Act

GPS Global Positioning System

ICAO International Civil Aviation Organization

IMET International Military Education and Training

JSF Joint Strike Fighter

JSOW Joint Stand-Off Weapon

JSTARS Joint Surveillance and Target Attack Radar System

LD/HD Low Density/High Demand

LMSR Large Medium-Speed Roll-On/Roll-Off

MEADS Medium Extended Air Defense System

MEF Marine Expeditionary Force

MTW Major Theater War

NATO North Atlantic Treaty Organization

NBC Nuclear, Biological, and Chemical

NMD National Missile Defense

O&S Operations and Support

OPTEMPO Operating Tempo

OSD Office of the Secretary of Defense

.L. Public Law

PDD Presidential Decision Directive

PERSTEMPO Personnel Tempo

QDR Quadrennial Defense Review

R&D Research and Development

RBA Revolution in Business Affairs

RMA Revolution in Military Affairs

S&T Science and Technology

SOF Special Operations Forces

SSC Smaller-Scale Contingency

SSBN Ballistic Missile Submarine

START Strategic Arms Reduction Treaty

THAAD Theater High Altitude Area Defense

TOW Tube-Launched, Optically Tracked Wire Command-Link Guided

UAV Unmanned Aerial Vehicle

UCP Unified Command Plan

USC United States Code