SENIOR SERVICE COLLEGE FELLOWSHIP RESEARCH PAPER

The views expressed in this paper are those of the author and do not necessarily reflect the views of the Department of Defense or any of its agencies. This document may not be released for open publication until it has been cleared by the appropriate military service or government agency.

THE TRANSFORMATION OF RESERVE COMPONENT (RC) MODERNIZATION: NEW OPTIONS FOR DoD?

BY

LIEUTENANT COLONEL RICK ALFORD
United States Army Reserves

LIEUTENANT COLONEL RAFAEL O'FERRALL
Army National Guard

LIEUTENANT COLONEL CARL REHBERG
United States Air Force Reserves

LIEUTENANT COLONEL KEVIN RIEDLER
United States Army Reserves

DISTRIBUTION STATEMENT A:
Approved for public release.
Distribution is unlimited

USAWC CLASS OF 2002
Senior Service College Fellows

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013

20020806 196

The Transformation of

Reserve Component (RC) Modernization:

New Options for DoD?

LTC Rick Alford, USAR

LTC Rafael O'Ferrall, ARNG

Lt Col Carl Rehberg, USAFR

LTC Kevin Riedler, USAR

National Security Fellows
Harvard University
JFK School of Government
79 John F. Kennedy St.
Cambridge, MA 02138

The conclusions and opinions expressed in this document are those of the authors alone, cultivated in the freedom of expression, and academic environment at Harvard University and the Kennedy School of Government. They do not reflect the official position of the U.S. Government, Department of Defense, or any of the Service or Reserve Components.

DISTRIBUTION STATEMENT A:
Approved for public release.
Distribution is unlimited.

Contents

Executive Summary		4
Chapter 1	**Introduction**	6
	RC Critical to the National Security Strategy (NSS)	6
	Total Force Integral to NMS	8
	Priorities	11
	Summary	12
Chapter 2	**RC Modernization From Different Perspectives**	14
	Army National Guard Issues	15
	Army Reserve	19
	Air Reserve Component (AFRC & ANG) Issues	24
	Naval Reserve	28
	Marine Reserve	29
	Coast Guard Reserve	30
	Recent RC Modernization History	31
	A DoD Perspective on an RC Modernization Tool	34
Chapter 3	**Policy Options & Analysis**	37
	Historical Funding Analysis	37
	Average Age of Equipment Shortages	40
	Transformation	42
	Transformation Analysis	43
	Qualitative Analysis	45
	New Policy Options	48
	Analysis of Results Summary	50
	Other Issues	54
Chapter 4	**Conclusions and Recommendations**	55
	Making New Policy a Win-Win For All Stakeholders	55
	Conclusions	56
	National Military Strategy (NMS) Implications	58
	Equipping Policy Needs Changes	59
	Recommendations	61
	Legislative And Implementation Strategy	66
	Strategy for RC Equipping Policy	68
	Appendix 1	72
	Appendix 2	73
	Appendix 3	74
	Appendix 4	75
	Appendix 5	76
	Appendix 6	77
	Appendix 7	78

Appendix 8
End Notes 80

Work Consulted 96

EXECUTIVE SUMMARY

Current DoD equipping policies have proven ineffective in meeting readiness requirements in support of the National Military Strategy – and particularly so for the RC.

Conflict about the role, composition, employment and equipping of Active Component (AC) and Reserve Component (RC) forces has existed since the Revolutionary War. Modernization is a particularly critical issue to the RC, which has historically been equipped with less up-to-date weapon systems and older equipment than the AC. Utilizing the RC in the National Military Strategy (NMS) is a substantial link in effectively implementing the new National Security Strategy (NSS). RC modernization and recapitalization are critical Centers of Gravity (COG) for successful DoD transformation.

Since the Cold and Gulf Wars, the RC has played an increasing role in the daily defense of America. This will hardly diminish post 9-11. In 1997, an oral agreement was reached to eliminate the National Guard Reserve Equipment Appropriation (NGREA), through which the RC received a substantial portion of its equipment funding. The result was for the RC to rely solely on the AC to appropriate for them through Service processes. Unfortunately, also lost was the ability to use NGREA funds for innovative and cost-effective RC acquisition.[1] Research data show substantial difficulties in using AC appropriations processes (P-1R)[2] to purchase RC equipment, compounded by systemic difficulties in tracking procurement from appropriation to equipment delivery.

The policy to eliminate NGREA may have been a case of implementing a solution to deal with the symptoms rather than the underlying core problems. Having left those impediments unaddressed, the current policy remains ineffective and unsatisfactory in a number of areas. Absent a change in equipment modernization and procurement appropriations and the associated processes and policies, RC force capabilities will continue to diverge from the AC, leading to

less integration, interoperability, and combat capability, and ultimately to an inability to fulfill the requirements of the NMS.

A quantitative analysis shows that since the implementation of the new DoD policy, there has been an overall decrease in procurement funding for the RC, with a commensurate drop in equipment readiness. While overall DoD procurement funding has increased, the RC lags in almost every quantifiable procurement measure. Before Congress *de facto* reinstated NGREA (December 2001), RC procurement was at the lowest percentage of total DoD procurement since such data has been recorded. Future procurement data (FY 02-07) shows the AC growing 49.4% with the RC actually in decline (-14.5%). Cascading of equipment, once relied upon heavily to equip the RC, will be limited in the future. These trends have obvious readiness implications for the ability of two thirds of the defense triad (Reserve and Guard) to fulfill their portion of the NMS, much less their ability to seamlessly work with their Active Component counterparts.

Short-term recommendations include the reform of the NGREA to a Reserve Component Transformation Account (RCTA) budgeted across the FYDP. The DoD Equipping Policy should receive a complete review. The very successful Air Guard and Air Reserve Test Center (AATC) should be expanded and replicated in other RCs. DoD must aggressively address P-1R accounting problems – appropriations through execution.

The events of 11 September have caused the Congress to review their level of commitment to funding all service components. By engaging Congress, DoD, and those organizations/associations interfacing with both Congress and DoD in an attempt to affect the funding processes (and in like fashion, how Congress views funding the equipping needs of the RC), we have the opportunity to shore up problems in meeting the NMS, and more effectively achieve a desired "Win/Win" scenario for all stakeholders – DoD, AC, RC, Congress … and most importantly, the American people.

CHAPTER 1
INTRODUCTION

The focus of the paper is to evaluate the current DoD equipping policies, and particularly so for the Reserve Components (RC)[3], and determine their effectiveness in meeting requirements of the National Military Strategy, leading to new policy options, if necessary. This paper explores the effects of changes in policy on resource levels and historical funding trends. The authors examine service plans for transformation, and identify options for resourcing, allowing them to better contribute to Service/DoD transformation. Additional analysis explores processes and innovative policies that will help ensure RC modernization and recapitalization for effective Service transformation. This paper explores the question: How effective are the current policies regarding RC modernization and what new options are available to DoD?

RC Critical to the National Security Strategy (NSS)

As the NSS changes, one of the critical tasks for DoD is to translate it into an effective National Military Strategy (NMS). Although the current administration has not yet produced a definitive document that spells out the NSS, the Bush Doctrine is clear and cogent. On Sept. 21, the President declared that the U.S. had "found our mission," and it is "global terrorism." We must "prevent regimes that sponsor terror from threatening America, or our friends and allies" with nuclear, biological and chemical weapons. In the President's words, "Either you're with us or against us." Additionally, the United States will not distinguish between terrorists and states that willingly harbor terrorists. The United States' new mission is aggressive, open-ended, global policing for the short-term. Fundamentally, the defense of the United States will be Washington's top priority, with all other foreign policy interests taking a back seat. The Bush Doctrine is grounded on the premise that the "...defense of the homeland from attacks represents

an interest so fundamental that all other foreign policy interests must be completely subordinated."[4]

These efforts to combat terrorism and implement the Bush Doctrine undoubtedly imply significant changes to the roles, missions, and functions of the AC and RC forces. Some have argued that potential changes in roles and missions justify bypassing designated and significant RC modernization or recapitalization for the next several years. Ironically, there has been no similar call for a moratorium on "Total Force" procurement as we continue to fund Cold-War weapon systems that have little rationalization with the emergence of asymmetric and 4th Generation Warfare (4GW) threats and the decline of major theatre of warfare (MTW) threats.

One of the more recent elements of our NMS is a capabilities-based strategy. For the last forty-plus years, we have relied on predicted threats in specific areas. The focus now shifts more to "*how*" an antagonist may fight. Our recent experience with adversaries has seen the use of asymmetric means and 4GW.[5] The term 4GW refers to any method of dealing with the U.S. military other than confronting them on the battlefield. "It includes all forms of terrorism, guerilla warfare, intifada-type urban unrest…"[6] Thus, instead of building F-23s to counter our F-22s, an adversary may counter by poisoning the squadron's mess hall, blowing up a barracks or a variety of other asymmetrical measures.[7]

Derived from the National Security Strategy (NSS), the National Military Strategy (NMS) of the United States provides strategic guidance to fight and win in a variety of conflicts. Critical to the implementation of the NMS is the Total Force Policy that inextricably integrates the Active and Reserve Components (AC - RC) throughout the spectrum of conflict and military operations. The services have assigned their respective RCs roles, missions and functions that support this continuum.

Properly equipping the RCs with modernized equipment, and thus allowing them to maintain the readiness required to meet those roles is at the core of this strategy.

Total Force Policy Integral to NMS

Conflict about the role, mix, and employment of Active Component (AC) and Reserve Component (RC) forces has existed since the Revolutionary War.[8] In the 1970's Secretary of Defense (SecDef) Melvin Laird initiated efforts to mitigate this conflict. His concept was eventually institutionalized as the "Total Force Policy"; and it, along with the "All Volunteer Force" policy, has had a major influence on U.S. military personnel, readiness, and budget policies throughout the 1980s and 1990s.

The basic concept underlying Total Force Policy is that the lower cost of sustaining Reserve force units in peacetime, compared to similar AC units, will result in budgetary savings that can sustain a larger Total Force and free up resources for other priorities such as modernization and recapitalization.[9] The Total Force Policy presumes that Reserve forces can perform most peacetime missions in conjunction with training that reaps significant manpower and monetary savings over a force with a more robust AC mix; this is due in part by a flow of experience from the AC to the RC. But the purpose of the RC is much more than mere cost effectiveness and budget savings. This country has a long history of citizen-soldiers that begins before our early revolutionary period, critical to a constitutional republic.[10]

The evolution of the Active Duty and Reserve (National Guard and Reserve) military Components into a "Total Force" has been a great DoD success story. The "Total Force" concept was outlined in the early 1970s as part of a post-Vietnam era strategy for dealing with changing national priorities that called for reductions in military spending and the end of conscription into military service, though it had the additional effect of initiating a clearer

understanding of the respective roles of the various components, AC and RC. Since the All Volunteer Force (AVF), the RC has provided increased social utility by enhancing military-civilian connections critical to the effectiveness of our National Military Strategy (NMS).

Historically, the Guard and Reserve were war-fighting forces trained and held in reserve for low-probability/high-intensity conflicts, whereas now they are increasingly used in higher-probability/low-intensity contingencies such as humanitarian and peacekeeping missions, and to relieve Active Component (AC) tempo.[11] But their greatest growth has been in operational support. Guard and Reserve members provide this support in a variety of ways: voluntary and involuntary orders to Active Duty, two-week annual tours both in the U.S. and overseas, inactive duty (training category), additional training periods, and Active Duty for special work (either AC or RC). As the 21st Century unfolds, the AC is increasingly taking proper advantage of the experience and unique civilian skills that RC personnel bring to their respective Services.

This evolutionary transformation away from a wartime force in reserve that began with the Total Force Policy was accelerated following the Persian Gulf War. There was a rapid growth in the use of Presidential Reserve Call-up (PRC)[12] authority (five PRCs are still open as well as two partial mobilizations),[13] and a corresponding growth in RC volunteerism to support smaller-scale contingencies and routine engagement operations. PRC authority was originally developed and approved by Congress to give the Executive Branch the capability of responding to an imminent major conflict. However, the focus of PRC changed after the Gulf War in response to operations in places as diverse as Haiti, and Bosnia. Simply adding AC end strength[14] will not solve this problem, as this would not address the need for experienced personnel without large increases in personnel budgets. Additionally, continuing operations with no associated PRCs (e.g., Northern Watch) have put a strain on both AC and RC forces. In fact, the USAF started the Air

Expeditionary Force (AEF) in part to utilize their RC more effectively without resorting to PRCs.

The number of mandays required of the RC has risen significantly from the mid 1980s through the 1990s, from less than 1million duty days in the late 1980s, to between 5-6 Million Duty days after Desert Shield/Storm, doubling in the late 1990s to 12 million plus with no abatement. This reflects the increased demand and need for RC forces. (See Appendix 1 for details.)

There are substantial and important differences between AC and RC forces.[15] It is not easy blending disparate components into a single smoothly running team; however, both the AC and RC hold a commitment to integration as presented in the Reserve Component Employment (RCE) 2005 Study, and the roles and missions of most of the Services and the RCs direct further integration.[16]

The latest step in the integration process has been movement toward a policy of an "Integrated Total Force," where the lines of distinction between the various components become even more blurred and each component provides comparable capabilities to the AC.[17] On the one hand, the potential benefits of integration are significant. Integrating the components during peacetime offers solutions to a number of AC challenges driven by trends in the U.S. economic and cultural environment.[18] On the other hand, this integration requires equipment that is interoperable, compatible, and complementary. In some cases the NMS may require equivalent capabilities. It also requires an elimination of structural and cultural barriers for integration, while still leveraging the unique characteristics of each individual component.[19]

Priorities

In every organization, people make the difference between success and failure. For those in the military, the soldiers, sailors, airmen, and marines are critical to whatever we do. Personnel issues determine combat effectiveness as much or more than doctrine, logistics, or technology. Overwhelmingly, personnel are identified as the number one strength of the RCs.[20] We need weapons that are combat effective, and affordable in sufficient quantities for the uncertainty of combat. "People, Ideas, and Hardware"[21] are the priorities. When doing a thorough search, one finds significant research on the first two priorities, with a dearth of information on the "Hardware" part of the triad, especially regarding the RC. Nevertheless, one of the biggest stumbling blocks to increased RC future effectiveness, and indeed, that which still requires the greatest attention, is RC equipment and the RC's role in transformation.

When a Service's overall modernization program is disconnected, it has tended to affect the RCs disproportionately, either in age disparity or equipment available percentages. (See Appendices 2 and 5 for examples.) The issue of aging equipment and recapitalization is extremely important for the both the ACs and RCs, affecting short-term and long-term readiness. As aging equipment becomes more difficult to maintain, associated costs increase each year, which then necessitates increased Operations and Maintenance (O & M) funding. The combined effects of these processes siphon funds from desperately needed modernization or procurement accounts. This affects current military readiness and effectiveness, but also future capabilities and long-term readiness. Aging equipment issues cause compatibility and interoperability problems, and perhaps more importantly, these problems also mean capability shortfalls that frequently leave RC units less capable than their AC counterpart, and hence less able to perform their portion of the Services' assigned missions.[22]

Summary

The AC is increasingly dependent on the RC, necessitating near total interoperability. While the AC/RC force structure cannot be completely symmetrical, it must be complementary, interoperable and of comparable capability. Modernization is a particularly critical issue to the RC, which has historically been equipped with less up-to-date weapon systems and older equipment than the AC, as the primary tool for equipping has been "cascading."[23] Conditions in the RC improved substantially in the 1980s and early 1990s due to increased funding for the RC and downsizing of the Total Force. With cascading as the primary method of equipment modernization for the RC, the lack of procurement in the 1990s will have a greater impact on the RC vice the AC. Why? As new equipment purchases were reduced significantly, there was a declining pace of equipment transfers from the AC to the RC. The lack of substantive procurement in the 1990s means that a significant portion of the equipment available to be cascaded is inoperable or so old that it has little usable life remaining.[24] Funding levels and rising costs have made it difficult for the Guard and Reserve to maintain their aging equipment, let alone modernize and recapitalize their inventory. This would indicate that cascading *de facto* is implausible as a major tool for modernization in the future.

"Without a significant effort to increase resources devoted to recapitalization of weapon systems, the force structure will continue to age, but, perhaps more significantly, become operationally and technologically obsolete."[25] Age of equipment and weapons' inventory only increased modestly in the 1990s because we purchased significant numbers in the 1980s and reduced force structure in the early 1990s—getting rid of the oldest equipment and inventories. Over the next 10 years, without a change in equipping and procurement policies, ages of equipment will increase substantially because we are not procuring equipment in sufficient

quantities to reduce average age. If recent trends hold, this will disproportionately affect the RC. With this in mind, the AC and RC must react as a "Total Force" as they plan for future transformation, modernization and recapitalization.

This paper will analyze RC Modernization options, develop conclusions, make policy recommendations as appropriate, and suggest an implementation strategy for the DoD. A historical funding analysis will be one method of determining effectiveness of the current policy. A future funding analysis helps us analyze the implications of the new NMS and the early stages of transformation. We will also provide a value critical analysis, which includes interpretation of facts and an explicit role for values and their ordering.

Without effective policies for RC modernization, the future readiness, interoperability, recapitalization and capability of the Reserve Components, and therewith the Total Force's capability to meet mission requirements is at risk.

The next chapter will focus on the individual RCs by looking at their specific equipping problems and issues, as well as a DoD perspective. Chapter three contains data analysis, policy options and their analysis. The fourth chapter presents the necessity of creating a win/win situation for all stakeholders, contains conclusions, recommended policy options (short term and mid-to-long term), and concludes with a legislative and implementation strategy.

CHAPTER 2

RC MODERNIZATION FROM DIFFERENT PERSPECTIVES

The concept of the non-standing army (militia) is recognized and protected by historical precedent. The Constitutional presumption is that citizen-soldiers should provide the personnel for our military. Throughout most of America's history this has been the case—we have been predominately citizen soldiers.[26] The Militia, the National Guard, and the federalized Reserve forces have developed over time and are an integral part of the American defense establishment. "Hamilton, Madison and their partner John Jay explained in The Federalist that balancing military power between the standing armies and the militia provided for the nation's security in a manner most compatible with the democratic principles of the republic."[27]

The RC consist of the seven different components: Army National Guard, Army Reserve, Air Force Reserve, Air National Guard, Navy Reserve, Marine Reserve and Coast Guard Reserve. The National Guard is a dual state-federal force, functioning as the militia of the states under control of state authorities and as a federal military reserve force. In contrast, the Reserves of each service are purely federal forces, created in the 20th Century.

If you compare just the Selected Reserve, these Reserve Components constitute approximately 38.3% of the total manpower for all the Services.[28] In the last 10-12 years the Selected Reserve has become a larger percentage of the total manpower. Significant percentage changes occurred in the Air Force and the Army, while the other Services had no statistically significant changes. Table 2-1 shows a break down by Service and component.

Table 2-1[29] Personnel Manpower By Component

	Active Only	Reserve Only	Guard Only	Total AC & RC	Percent RC
Army	480,000	205,000	350,000	1,035,000	53.6%
Air Force	358,800	74,700	108,400	541,900	33.8%
Navy	376,000	87,000	N/A	463,000	23.1%
Marine Corps	172,600	39,558	N/A	212,158	18.6%
Total	1,387,400	406,258	458,400	2,252,058	38.3%
Coast Guard	36,000	8,100	N/A	44,100	18.4%

It is important to note that each Reserve Component is unique in its roles and missions, and level of integration with its parent AC. There is variance between the components regarding average ages of equipment, shortages of equipment, compatibility and interoperability problems. Each RC is described separately so its unique situations and problems can be illuminated. Then, a DoD perspective is presented focusing on the current NGREA policy and on how and why it came about.

ARMY NATIONAL GUARD ISSUES

Historical Background

The Army National Guard is the oldest military organization in the United States of America. In 1636 three militia regiments were organized to protect Boston and the interests of the Massachusetts Colony. The National Guard is the only U.S. military organization specifically chartered by the Constitution, which gives Congress special prerogatives regarding its makeup.[30] Article 1, Section 8 of the Constitution directs Congress, "To raise and support Armies, … to provide for organizing, arming, and disciplining, the Militia, …"

In 1776, 140 years after the first muster, the militia complemented the Continental Army and served as a manpower pool for George Washington's command while augmenting his forces during crucial engagements of the Revolutionary War.[31] Citizen-soldiers have been integral in

most of our nation's wars.[32] The Dick Act of 1903 ratified the National Guard as the nation's organized militia. Then, the National Defense Act of 1916 added a federal mission to the Guard's state requirements and established that "the Army of the United States shall consist of the Regular Army, the National Guard while in service of the United States, the Officers' Reserve Corps, the Organized and Enlisted Reserve Corps."[33] It created types of training and required units to organize like the Active Army. It also permitted the President to mobilize the National Guard in case of war or national emergency.

Following World War I, the National Defense Act of 1933 created a new designation and component, the National Guard of the United States. This new component consisted of the same units that made up the militia, though this time as part of the Army primary reserve force. The Guard has made significant contributions to the Army's combat power throughout World Wars I and II, Korea, Desert Shield / Storm and still does so today in the aftermath of the 9-11 attacks.

ARNG Structure

The Army National Guard is composed of approximately of 350,000 members, in all 50 states, 3 territories, and the District of Columbia (DC). In 2002, the ARNG provides 34% of the Total Army military end strength while the Selected Army Reserve provides 20%, and the Active Army 46%. The Army National Guard's force structure constitutes 56% the Army's Combat Forces, 40% of Combat Support and 34% of the Combat Service Support with less than 10% of the total Army budget. The ARNG shares the same basic organizational structure, doctrine, and command and control (below division level).

The ARNG is structured with 8 combat divisions compared to the Active Army's 10 combat divisions. Currently, the equivalent of two of these eight combat divisions are converting to combat service support. This conversion, referred to as the Army National Guard

Division Redesign Study (ADRS), will require significant equipment conversions over the next seven to ten years. Additionally, the ARNG has fifteen separate combat brigades, referred to as enhanced separate brigades (eSB). Almost all recent increases in RC equipment funding have come in support of the ADRS.

Recent Modernization Issues

Interoperability, average ages, equipment shortages and future transformation are critical modernization issues for the ARNG. A recent report on interoperability found most of DoD's serious interoperability problems to be with ARNG (6 out of 9).[34] This is essentially due to a lack of modern and up-to-date equipment. Overall, the shrinking Army in the 1990s and a period of AC procurement growth in the late 1990s have allowed some cascading of equipment. Thus there has been moderate improvement in the Army regarding AC/RC equipment compatibility. [35]

Average age issues are a problem with the ARNG but not quite as severe when compared to other RCs. In Force Package 1 (FP-1), the ARNG has significant disparities in ages between the AC in both 2.5T Truck and 5.0T Truck fleets.[36] In areas where the average age is not significantly different, it appears that the ARNG shows significantly more equipment shortages versus the AC.[37] Two areas of grave concern to the ARNG are helicopters and artillery (Top 2 FY 02 ARNG Modernization Priorities) which are provided for illustrative purposes.

Helicopters

The Army National Guard provides approximately 50 percent of the Total Army utility aviation force. With an aging and expensive helicopter fleet, there is a restructuring of the ARNG aviation organizations as newer aircraft are fielded but at reduced numbers. Unfortunately, there is a disconnect in the Army Aviation modernization plan. This plan will retire 600 UH-1 helicopters by fiscal year 2004 while establishing a requirement of 741 UH-60s.

The current ARNG UH-60 inventory is 509. Based on the current modernization plans (September 2001), the ARNG will have a shortage of some 65 UH-60s. This problem has been significantly mitigated in the last year by planned transfers of AC helicopters to the RC and the reorganization of AC and RC aviation units.

The attack helicopter requirements may be more problematic because they are highly dependent on the RAH-66 (Comanche) on-time and on-budget. There are some 463 AH-1 aircraft to be retired in the next several years along with scores of OH-58As. If the RAH-66 Comanche program is delayed and/or production quantities are reduced, this will have a disparate impact on the ARNG attack and reconnaissance helicopter force structure, as the aircraft scheduled to be cascaded may be too old and there are not enough AH-64Ds or OH-58Ds to cascade. Additionally, the cost to operate and maintain these old helicopters (AH-64As, OH58As) will continue to mount with age and "vanishing vendors."[38] This means that units will either have significant force structure reductions, go without aircraft for several years, or both.

Artillery

The majority of artillery pieces and artillery units are found in the ARNG. There are three primary programs for modernization and recapitalization: Multiple Launch Rocket Systems (MLRS), the M109A6 Paladin and the Crusader. The ARNG was scheduled to convert nine M109A5 155mm self-propelled howitzer battalions to MLRS. Unfortunately, only three of those nine will be converted due to funding shortfalls and excessive start-up costs. The Paladin purchase is scheduled to conclude in FY 02 with the ARNG still requiring 14 battalion sets, some 3,500 howitzers short of recapitalization. Each of those howitzers also requires a M992 FAASV (Field Artillery Ammunition Support Vehicle).

Military Support to Civilian Authorities (MSCA)

ARNG units, when in state status, provide State Governors with a force for disaster relief, public peace and general assistance during local emergencies, and they are officially titled Military Support to Civilian Authorities (MSCA). When civilian capabilities are overwhelmed, the civilian community depends on the military and civil authorities. MSCA, in emergencies, is a bottom-up process starting locally and continuing through state and Federal levels as an event grows in scope and magnitude. The first tier of military response is the National Guard under gubernatorial control.

The National Guard, in state active duty, belongs first to the Governor and is employed as a state resource. Only when local and state agencies are exhausted or inadequate, is Federal assistance (AC, federal reserve forces & other federal agencies) committed to supplement local/state government and relief organizations. Typically, the National Guard is the only state agency able to respond quickly with wide-ranging expertise and specialized assets. Under state active duty, the National Guard provides the governor with a large trained force immediately capable of executing a variety of missions.[39]

ARMY RESERVE

Historical Background[40]

The Army Reserve evolved from the Medical Reserve Corps in 1908. The National Defense Act in 1916 established the Officer's Reserve Corps, Enlisted Reserve Corps and the Reserve Officers Training Corps, better known today as the ROTC. Starting in April 1917, 89,500 officers belonging to the Officer's Reserve Corps and more than 80,000 members of the Enlisted Reserve Corps were involved World War One (WWI). After the war, these two entities were combined to form the Organized Reserve Corps. During the Great Depression, more than

30,000 officers from the Organized Reserve Corps served as commanders or staff officers for the 2,700 Civilian Conservation Corps camps. During World War Two (WWII), over 57,000 officers from the Organized Reserve Corps were called to active duty, while over 200,000 members of the Organized Reserve served.

Not until the Korean War, did Congress realize the importance and necessity of the Army Reserve. The Korean conflict involved over 400 Reserve units and more than 240,000 soldiers belonging to the Organized Reserve Corps were called to active duty. This large number of personnel reflected the Army's need for organized and trained soldiers in a relatively short period of time. This need caused Congress to make significant changes in the structure and role of the Reserve, transforming the Organized Reserve Corps into today's United States Army Reserves (USAR). The USAR was divided into three subcategories 1) Ready Reserve, 2) Standby Reserve, and 3) Retired Reserve. Since Korea, the USAR has been actively involved in every major contingency ranging from the Berlin Crisis in 1961 through today's Operation Enduring Freedom in Afghanistan.[41]

Overview of the Army Reserve

SecDef Laird's "Total Force Policy" (released on September 8, 1970) stated succinctly, "the Selected Reserve will be prepared to be the initial and primary source of augmentation in any future emergency requiring a rapid and substantial expansion of the active forces."[42] Today's reality is that most Services would not even begin a major contingency without substantial Reserve Component (RC) forces. By focusing on the strengths of the RC, this would increase flexibility in planning the Total Force structure and provide the same capability as an all-active force structure at reduced cost.[43] From a political perspective, by integrating the RC in sharing the material and manpower responsibilities created limitations on the government's

ability to commit the nation to an all out war without the assistance from the RC. Hence, substantial justification would be required and high-level public support would have to be given before any large-scale deployment took place.[44]

Today, the Army Reserve is the active Army's federal reserve force.[45] It makes up over 23% of the Army's Combat Support (CS) and approximately 33% of the Army's Combat Service Support (CSS) forces. The FY02 end strength figures of 205,000 reflect a 35 percent reduction since 1989. However, the demand for Army Reserve participation for overseas deployments have increased 300 fold since 1989, averaging 20,000 Army Reservists deployed to over 50 countries around the world annually.[46] The Army Reserve has proven to be the Army's main source for medical, transportation, and logistical units, and the only source for trained individual soldiers to fill vacancies within units and augment headquarters staffs.[47]

Recent Army Reserve Equipment History

In 1982, SecDef Caspar W. Weinberger was responsible for the new Department of Defense (DoD) policy—"First to Fight, First to Equip." The units designated first to be deployed, whether Active Component (AC) or RC, would be the first equipped to do their mission. However, combat units (perhaps correctly so) received a higher equipping priority than CS or CSS units. This created considerable problems for the USAR since a vast majority of its force structure is CS and CSS.[48] Based on the FY 82 Annual Report of the Reserve Forces Policy Board, the USAR had the lowest percentage of required wartime equipment on hand (approximately 33-34 percent) compared with the other RCs. The RC overall had approximately 72 percent of the required wartime equipment on-hand, which unfortunately included incompatible and out-of-date equipment.[49]

During the 1983 to 1993 period, progress was made towards closing the required wartime equipment gap in the United States Army Reserve (USAR) with 83% of the required wartime equipment on-hand.[50] Since Desert Shield/Storm there has been not been a significant positive trend for the USAR (FY 00: 78%).

Training was another area that depended greatly on equipment. So in 1984, the Minimum Essential Equipment for Training (MEET) sets were created to allow for RC commanders the convenience to list the top ten items needed to accomplish their training requirements. MEET sets played a very small part in the equipment shortage until 1989.[51]

Equipment compatibility was another area that had an impact on the USAR in three ways. The first area involved USAR unit equipment that was incompatible with the AC, e.g. RC radio sets versus AC digital sets. Secondly, obsolete equipment prevented units from being deployed. Finally, RC maintenance personnel were required to support AC units with more advanced and complex equipment than their own equipment (e.g., M113 versus M-2 Bradley Fighting Vehicles).[52] Situations like these created and sustained hidden costs (and continue to do so) when soldiers had to be trained and proficient on outdated equipment, and also proficient in the new technology as it was introduced.[53]

In 1992, the General Accounting Office (GAO) findings reported that Congressional investigators determined the Army's "First to fight-First to be equipped" policy short-changed the USAR combat support (CS) and combat service support (CSS) units.[54] Additionally, the GAO reported in 1993 that the USAR had only 59 percent of its required equipment on-hand, compared to its AC counterpart with 89 percent.[55]

At the beginning of FY 94, a reporting methodology change occurred which masked the actual equipment and wartime requirements. This change gave the appearance that the USAR

equipping difficulties were improving, though "combat essential" equipment that was being reported now fell under the "major items" category.[56] By year's end, the USAR still reported shortages of C-12 aircraft, communication equipment and tactical wheeled vehicles.[57]

Investigating the last three fiscal years (1998–2000), the USAR still ranked last in major equipment on-hand as compared to the other RCs.[58] Based on fiscal year 2000, the USAR only had approximately 78 percent of their wartime equipment on hand. This represents a 22.6 percent equipment shortfall. This is the greatest equipment shortage found in all the Reserve Components. Although the USAR has improved since the early 1980s, the USAR still faces the toughest equipment requirements within CS and CSS units.[59]

Cascading[60]

As the Army digitization initiatives accelerate, incompatible and obsolete equipment is cascaded (transferred) down to the USAR.[61] The equipment is more often than not beyond its planned economic service life, requiring the USAR to repair and refurbish it to extend its service life. Currently, over 75% of USAR systems exceed Secretary of Defense Donald Rumsfeld's half-life goals.[62] History shows that the USAR often has been precluded from mobilization due to shortages in, and a lack of, modern equipment. Aircraft in particular have represented a serious modernization shortfall due to the requirement of high technological navigational and armament delivery capabilities. At present, the USAR is currently experiencing modernization shortfalls in CH-47, AH-64D Apache Longbow and UH-60 Helicopters. There are also significant shortages in Medium Tactical and Utility Vehicles (FMTV and HMMWV), which are the backbone of the USAR.[63]

Summary

Today, the Army exhausts less than 6 percent of its Total Obligation Authority

(TOA) to procure new CS and CSS equipment. The Army Reserve contributes over 20 percent of the CS and 33 percent of the CSS for the Total Army.

Since 1991, the USAR has averaged less than 6 percent of the annual Service Procurement of the President's Budget (P1-R).[64] For Army Transformation to truly succeed, the USAR needs to leverage new technological and equipment innovations to ensure it is capable of being a flexible and dynamic force structure.[65] If the old equipping paradigm is not broken soon, equipment capability shortfalls may make the USAR unable to respond to CINC requests. The changing face of defense relies now more than ever on the RC. This requires new urgency for modern and recapitalized equipment in the USAR.

With the implementation of the "Transformation Strategy" comes the fielding of General Shinseki's new medium brigades and the need for expensive digital-technology. This will place a tremendous burden on the budget for years to come by perpetuating a disparity for the Army Reserve, should it remain one of the last components to receive "state of the art" equipment.[66]

AIR RESERVE COMPONENT (AFRC & ANG) ISSUES

Preparations for the postwar (WWII) force structure and organization began months before the cessation of hostilities. In August 1944, General John Palmer "...advocated a dual reserve system which accommodated both a national reserve army under the "Army" clause of the Constitution, and the National Guard raised under the "Militia" clause."[67] Further political wrangling led Secretary Stimson to approve policies in October 1945 that would commit the War Department to establish dual-component reserves systems for the postwar Army and Army Air Forces.[68]

Air Force Reserve Command (AFRC)

The AF Reserve Command consists of approximately 74,000 reservists, 13% of the military endstrength for the USAF. The most significant difference between the AFR and the ANG is that the AFR has a large number of Associate Units and far fewer unit equipped assets. The AFR has 35 Flying Wings, 117 Groups, 425 Squadrons and 101 Flights that include 442 aircraft. The dominant missions for the AFRC consist of strategic and tactical airlift, and a variety of associated support missions.

Air National Guard

In the late 1940s, the ANG started with approximately 58,000 personnel. Its primary units would be 84 flying squadrons, primarily fighters. Air defense of the continental U.S. was its main mission as that was seen as an extension the militia and National Guard's historic defensive role. A separate National Guard aviation program began to emerge in 1946 as individual units obtained federal recognition. Today, the ANG consists of approximately 107,000 Guardsmen, 20% of the military end strength for the USAF with over 1300 aircraft. The ANG is primarily in fighters, tankers, tactical airlift and a variety of support missions.

Recent ARC Modernization Issues

The paramount challenge for the Air Reserve Component is modernization and recapitalization.[69] Historically, the ANG and AFR have been equipped with less up-to-date weapons and equipment (with some exceptions) than the Active Duty (AD) Air Force. That has become more critical as the USAF has entered what some would call the "modernization death spiral." The USAF cannot continue to modernize the whole force under the current modernization plan. That means that most RC forces age considerably worse than AC forces over the next 20 years based on current plans.

During the earlier phases of Total Force evolution, interoperability was not a significant barrier to the process as the Total Force was relatively large and RC units generally performed day-to-day operations independently. As the force became smaller—more integrated and expeditionary—and shifted somewhat from a "train for war" strategy to a "peacetime engagement" strategy, the force had less flexibility to help it deal with the impact of unfavorable factors.

Practical challenges such as recruiting, retention, declining experience levels, personnel tempo, aging, and dissimilar equipment create major problems within the Total Force. Interoperability, modernization, and recapitalization are more critical in mitigating the impact of aging and dissimilar equipment, and implementing the Expeditionary Air Force (EAF).

In the 1980s, when the ARC was flying F-4s, and the AC was flying F-15s and F-16s, interoperability was not a pressing concern. Even today, as the ARC operates F-16 block 25/30/32 and older aircraft and the AC operates primarily F-16 block 40/50 aircraft, interoperability problems are manageable. In the future, however, the possibility exists that the AC will operate F-22, Joint Strike Fighter (JSF), and Unmanned Aerospace Vehicles (UAV) and the ARC will still operate very old F-16s and A-10s. At this point, interoperability will become a major impediment to integration unless the ARC is modernized, recapitalized and transformed along side the AC, and allowed to operate and maintain similar systems. Historical analogies also apply in the airlift (C-5A versus C-5B) and tanker (KC-135E versus KC-135R) weapon systems.

These radically different aircraft systems have different logistical support systems (engines, spares, avionics, test equipment, etc.). They require different skills to operate and maintain; and, they have different operational capabilities and concepts. This makes integration

difficult and creates resource constraints. This requires the AF to sustain and deploy separate logistical, operational support systems and personnel.

Why is modernization and recapitalization of the ARC important to achieve Service goals of becoming an Expeditionary Aerospace Force (EAF) and an "Integrated Total Force?" Under the Cold War construct, the Total Force was large enough to absorb or mask much inefficiency. Wartime deployment and fielding concepts allowed for duplication of support equipment and personnel, and there were plenty of targets to support a wide range of aircraft and aircrew capability. Things have changed:

- The USAF is approximately 40 percent smaller, and any inefficiency can quickly have an impact on bottom-line combat capability.[70]
- Airlift is constrained, and duplication of support equipment, spares, and personnel creates demand at the expense of other required forces.
- Forward basing is limited, and employment of dissimilar equipment creates logistic and personnel footprint problems.
- In an era of two-level maintenance, dissimilar systems create added costs throughout the Service logistics system, particularly in legacy aircraft systems not designed with extensive line-replaceable elements.
- New operational concepts demand capabilities such as precision munitions, stealth, and UAVs.[71]

Integration of Active and Reserve Components becomes especially critical in this new environment. Integration requires interoperability of equipment and personnel, and interoperability requires investment in modernization of all components along the same lines. The old system of handing down AC equipment to the RC—as new equipment is fielded in the AC—will not sustain interoperability, warfighting capability, recapitalization, and integration.

Supporting different equipment and systems across the components creates significant inefficiencies that cost a great deal of money. Duplicating logistics systems (spares, support equipment, depot infrastructure, and personnel), personnel systems (unique systems specialists),

and personnel training and management drive up Total Force manpower and operating costs—all at the expense of modernization, and warfighting capability.

This integration into a single Total Force will be presented to the warfighting Commanders-in-Chief (CINCs) in Aerospace Expeditionary Force packages. It is this integration that makes a more consistent, reliable and predictable modernization and recapitalization process so important. With this in mind, the importance of reserve component modernization becomes clear.

As the USAF fully transitions to the AEF concept, the notion of "first to fight" for particular units disappears. Therefore, it appears imperative that the USAF modernizes together or face significant force structure cuts in the ANG and AFRC. This begs the question whether "First to fight, first to equip" is appropriate for the Air Force.

One of poignant implications of the *de facto* OSD policy on NGREA is the tragic loss of the capability to develop innovative and cost effective weapon subsystems. The Litening II targeting pod (used on F-16 aircraft) has been an unqualified success story in Afghanistan and has had rave reviews.[72] This is clearly an example of the Revolution in Business Affairs (RBA) and AQ transformation.[73] The ARC used NGREA money to purchase COTS equipment, made minor modifications, tested it thoroughly (Fly-Before-You-Buy), and then it was purchased in quantities. This project went from contract award to actual use in ONW in less than 24 months. "The breakthrough was largely the result of a philosophy…'to get 80% of the solution for 20 percent of the cost' by making an end-run around the Air Force's slow-moving acquisitions process and buying off-the-shelf technology."[74]

NAVAL RESERVE[75]

The Naval Reserve originated in 1887, when the Navy Department prepared a plan whereby the Secretary of the Navy gave participating states a naval militia utilizing one of the Navy's older ships, and equipment to provide drill and instruction. In 1915, Congress formally created a "Federal Naval Reserve"—the predecessor to today's Naval Surface Reserve Force.

Structure

The present-day Naval Reserve (NR) Force consists of the Naval Surface Reserve Force and the Naval Air Reserve Force. The Naval Reserve Force Commander also functions as the Director of Naval Reserve on the staff of the Chief of Naval Operations in Washington, DC, and as the Chief of Naval Reserve in matters before Congress. The NR has approximately 90,000 personnel consisting of hardware units and augmentation units. "The NR hardware units consist of 25 ships and 223 aircraft as well as 20 Naval construction force (NCF), 14 Naval Expeditionary Logistics Support Force (NAVELSF), 45 Naval Coastal Warfare (NCW) and 4 Explosive Ordnance Disposal (EOD) units."[76]

The Naval Air Reserve consists of four air wings and the NR possesses 100% of the Navy's organic medium and heavy airlift and adversary training capability, 37% of the Navy's maritime patrol capability and 12% of the Navy's rotary wing capability.[77]

Modernization Issues

Aging aircraft are a significant problem in the Naval Reserve, too. The Naval Reserve provides 100 percent of the world's in-theater medium and heavy airlift for the Fleet. The C-9 fleet (27) currently being used is the muscle and backbone aircraft for the Naval Reserve; however the C-9 aircraft range in age from 18 to 33 years old, exceeding the original service life

projections. Additionally, the C-9 does not meet GATM/FAA/ICAO communication/navigation and noise/emissions mandates to remain operational. Recently, the C-40 has been purchased in small quantities (6 total, 4 by NGREA), but not enough have been projected in future modernization plans to recapitalize the fleet.

Currently, the Naval Reserve maintains a total of 48 aircraft within its four F/A-18A squadrons. In order for these aircraft to be compatible with the Navy's carrier-based strike fighters, the software and hardware need to be updated to the current Boeing's ECP-560R1. This upgrade will allow the F/A-18As to utilize the most-modern weapons within the Navy's arsenal. The interoperability of these F/A-18s was deemed a "serious" issue in a recent independent study.

MARINE RESERVE[78]

The Reserve of the United States Marine Corps, since its establishment by law in 1916, has been responsible for providing trained units and qualified individuals to be mobilized for active duty in time of war, national emergency or contingency operations. Marine Forces Reserve (MARFORRES), located in New Orleans, Louisiana, is the headquarters for all the Marine Reservists and Reserve units located throughout the United States. Over the years, the structure of the Marine Corps Reserve has evolved from small replacement units to major combat commands. Two of these commands, 4th MARDIV and 4th MAW, have been collocated in New Orleans since 1977, but were not unified under a single commander until 1992. Built around the nucleus Reserve staffs of the Division and the Wing, and incorporating the FSSG and MCRSC, this new command was designed to be one cohesive structure reflecting the "Total Force" principles and guidelines set forth in 1990 by the Secretary of Defense. In 1994, the new parent command was named Marine Forces Reserve.

Marine Corps Reserve has an endstrength of approximately 40,000 marines and its force structure consists of one Marine Division (4th MARDIV), a Marine Aircraft Wing (4th MAW), a Force Service Support Group (4th FSSG), and the Marine Corps Reserve Support Command (MCRSC) in Kansas City.

COAST GUARD RESERVE

The Coast Guard Reserve is the smallest Reserve Component, but no less important than the others. In 1915, legislation was written creating the Coast Guard, describing it as "an armed service." It did not have a reserve component until The Coast Guard Reserve Act of 1939.[79] The unique aspect of the early Coast Guard Reserve was that members were civilians. That changed two years later in 1941, when Congress passed a law restructuring the Coast Guard Reserve. This called for a U.S. Coast Guard Reserve and a civilian reserve organization, the U.S. Coast Guard Auxiliary. The Coast Guard Reserve was to function like the reserves of the other armed services.

The Coast Guard Reserve gives synergistic capability with an endstrength of approximately 8,100 personnel, making up approximately 18% of the Total Coast Guard manpower (44,000). These reservists fill short-term Active personnel gaps and also are primarily responsible for Deployable Port Security Units, which is their primary defense role. The Coast Guard Reserve also has significant missions in marine Safety Offices, Operational Shore Facilities, and Command and Control. The Coast Guard Reserve is well integrated and the AC units assume responsibility for Reserve training and employment.

The Coast Guard Reserve reports to Congress each year on equipment issues via the National Guard and Reserve Equipment Report (NGRER), but since the inception of NGREA the Coast Guard Reserve has never received any money from this appropriation.[80]

The Coast Guard is critical to Homeland Defense, and its critical role has been highlighted since 9-11. Most analysts see the Coast Guard taking on an enhanced role and likely leaving the Department of Transportation. The first question is how much of an enhanced role the Coast Guard will play. The second follows directly—where they will play that role. The answers will directly affect the Coast Guard Reserve.

Before we can consider the future of RC modernization as part of the SecDef's policy, it is imperative that we look at the recent history in this area, and how this impacts the current discussion.

> *"We must reshape, reconfigure, and modernize our overall forces—not just make them smaller." Senator Sam Nunn*[81]

RECENT RC MODERNIZATION HISTORY

In 1980, the Reserve Forces Policy Board (RFPB)[82] prepared three reports that highlighted equipment as the most critical element of readiness for the RC.[83] The AC disputed these initial reports, so the RFPB launched several additional studies in 1981 to help clarify the issues. The first report was titled: *The Reserve Forces in the 1990s, Volume 3, Equipment Acquisition/Allocation Policies and the Guard/Reserve*, followed shortly by *Fiscal Year 1981 Readiness Assessment of the Reserve Components*. In the readiness report, the authors provided a detailed comparison of wartime equipment requirements to equipment levels on-hand.

The RFPB conducted follow-up studies on readiness of the Reserve Components in FY 82 and FY 83. Although the data and conclusions were initially disputed, both the SecDef and Services later acknowledged both reports' conclusions to be correct.[84] The essence of the first report was that the Services were **not** in compliance with the intent of the 1972 DoD Directive 1225.6, Laird's primary policy for equipping the Reserve Forces. Chairman Conti stated:

There have been substantial improvements in the overall readiness of the Reserve Components since we first started making our assessment. However, continued and persistent problems still exist which prevent the Total Force Policy from being fully implemented. Foremost in this regard is the continued imbalance in the mix and distribution of equipment between the Active and Reserve Components.[85]

These reports concluded that "equipment" was the most limiting factor affecting the readiness of the Reserve Components. The reports received high-level attention, causing the SecDef to ask: "What are we doing and what can we do about this?"[86] This laid the groundwork in June of 1982, for the SecDef to issue a new DoD Policy Memorandum addressing the distribution of equipment. It stated that "...units that fight first shall be equipped first regardless of component."[87] This is commonly called "first to fight, first to equip," later interpreted as "first to fight, first to resource" the DoD policy still in use today.[88]

Historically, Congress believed the Services had commonly neglected their respective Reserve Components. Consequently, Congress felt it should take action to specifically appropriate funds earmarked to support the Guard and Reserve. The 1980 and 81 RFPB studies further raised the interest of Congress, which developed several initiatives in response. The first, championed by Congressman Sonny Montgomery, was the *Dedicated Procurement Program* (DPP), later referred to as the *National Guard Reserve Equipment Appropriation* (NGREA). Some of this was arguably "pork barrel" spending, though the large majority would be funding for bona fide, long-standing requirements and needs.

The second initiative directly associated with NGREA, was the requirement for DoD to provide an annual report to Congress on the status of National Guard and Reserve equipment: the National Guard and Reserve Equipment Report (NGRER).

Congress initiated the NGREA in FY 82 in response to the belief that the Service Secretaries were not providing the needed level of support to the Reserve Components. NGREA was a special appropriation not included in the President's Budget.[89]

At first, little money went into the NGREA, as Congress wanted to see how well the Services would respond to the new equipping policy (FY 82 - $50M). This was the case for several years as Congress waited for the Services to react appropriately. With overall defense spending realizing the largest increases since the Vietnam War, but little going towards the RC, Congress took action by appropriating some $380 million dollars in FY 85 and then $1.5 billion dollars in FY 86 specifically for Reserve Component procurement.[90] In January 1985, Congressman Sonny Montgomery called a press conference and stated:

> *If our Guard and Reserve units are going to be required to respond as part of the nation's Total Force, they must be equipped to do the job. In the past, state-of-the art equipment has not always found its way to the reserve units. I therefore, plan to take action which will require the Services to submit their procurement requests to Congress in a manner that will clearly display their plan for fully equipping the Reserve Forces with specific equipment, or with acceptable combat deployable equipment in lieu thereof. I am in favor of fully equipping those units now in place on the basis of their wartime missions, i.e., the first to respond should be the first to be equipped.*[91]

The Office of the Secretary of Defense for Reserve Affairs (OSD-RA) accepted responsibility for Congress' mandated task to produce the National Guard and Reserve Equipment Report (NGRER).[92] Still upset with an apparent lack of support for the RC, and acknowledging the need for clearer oversight, Congress mandated this report to delineate exactly how appropriated monies were being executed to remedy the situation.

While each RC has its own Congressional appropriation for Personnel, Operations & Maintenance, and Construction (Milcon), there is no specific RC appropriation for procurement. The AC has the same appropriations outlined above, but also receives specific appropriations for

procurement of large equipment, procurement of other equipment, Research Development, Test and Evaluation, and ammunition.

By Congressional intent, NGREA was and is outside the normal DoD budgetary process, though since 1998 it has been included in the Total Obligation Authority (TOA)[93] for defense. Historically, NGREA has been used for procurement of modifications, upgrades, add-on equipment and some larger equipment. It was intended to help, but not be the primary methodology. As it is not budgeted, provided on a year-to-year basis, solely for RC equipment, and is of an ad-hoc nature, it is of limited value for large-scale or long-term modernization and recapitalization efforts. This tends to restrict RC equipment funding to limited-scope or incremental modernization efforts.

A DOD PERSPECTIVE ON AN RC MODERNIZATION TOOL

Starting in 1996, several significant events took place that initiated the framework for the policy problem researched in this project. Sensitive to the increasing pressure within DoD and on Capitol Hill, the Assistant Secretary of Defense for Reserve Affairs (ASD/RA)[94] attempted to stop what was deemed a pending "train wreck" concerning NGREA and RC equipping in general. As early as 1996, but continuing through 1998, she highlighted three reasons that this particular appropriation seemed marked for extinction:

1) Several members of Congress viewed NGREA as "pork barrel" spending.[95] This view was echoed by a number of Congressional staff members then involved with the NGREA process. A specific equipment item repetitively referred to as the proverbial straw breaking the camel's back was the purchase of C-130 aircraft for the ARC.[96]

2) Budget deficits, and the consequential deficit politics marked anything suspect as a likely target for reduction or removal.[97]

3) There was a growing dissent at the OSD level of numerous equipment lists and requirements going directly to Congress. Many of these, earmarked for NGREA funds, were not reflected on the respective service procurement or unfunded requirements lists, much less the consolidated DoD budget request.

In a clarifying memorandum, then incoming Secretary of Defense, William Cohen, made a pronouncement with both direct and peripheral impact on NGREA and other Congressional adds.[98] "There is no way I can prevent end runs around my office, [but I will] make it stop and get the officials responsible out of the service or at least out of their capacity."[99] Thus, that particular means of receiving equipment for the RC – and admittedly for the AC as well – was effectively stripped, though with varying degrees of success ... Congress does not respond well to efforts at limiting its perceived authority from other agencies within the Government. The various service components could no longer seek, at least overtly, Congressional Adds to prop up their backlog of equipment related problems, which were by this time monumental and ever growing. This did not stop, however, Congress from doing so on its own.

As the federal budget tightened in the late nineties, another significant event occurred which foretold difficulties for those who desired to continue NGREA. Since it's inception in the early eighties, NGREA had been added on top of DoD's Total Obligation Authority (i.e. – total funds allocated for national defense). In 1998, however, the House Armed Services Committee directed their budget officer to find elements within the TOA to offset NGREA expenditures, effectively moving expenditures for the DoD unsupervised NGREA into DoD's pocketbook.[100]

The effects of these combined events necessitated action at the most senior levels. At the prompting of Congressional leaders, and supported within OSD, the RC and AC struck an agreement with two parts:

1) The AC would begin to include, and thus fund the RC in their procurement requests and execution if ...

2) in acknowledgement of the above, the RC would no longer request and receive funding under the National Guard and Reserve Equipping Authorization (NGREA). As previously outlined, NGREA had for years been a direct pipeline from Congress to respective RC elements, for specific lines of equipment ... but on which the AC had little if any oversight.

Thus, all elements of the RC, which had most often previously fended for themselves in finding equipping funds, came under the umbrella and inclination of their AC counterparts.

Ironically, though perhaps predictably, in response to a loss of NGREA funds, several members of Congress found alternative ways to provide "Adds," primarily channeled to the Army and Air National Guard. This seemed in direct contradiction to the initial intents in eliminating NGREA – integrating DoD and AC procurement procedures/oversight into the RC equipping process, and to reduce perceived "pork barrel" purchases.

The reduction of NGREA to zero funding seemed nearly complete: $647M in FY98[101], $352M in FY 99, $149M in FY 00 and $99 in FY 01. The initial slating for FY 02 was $0.

Life changed considerably, however, post 11 September 2001. Congress quickly substantiated a sudden surge in '02 NGREA funds, a Budget Authority of $699.1M.[102] Unfortunately, the revival of NGREA appears to breach the agreement between OSD and Congress to fund RC equipping through Service procurement processes only.

CHAPTER 3

POLICY OPTIONS & ANALYSIS

This analysis uses both quantitative and qualitative methods in order to determine effectiveness and evaluation of the current policy and potential new policies. At its root, policy failures are almost invariably political, so we will also make a political evaluation of the policy.[103] This quantitative analysis focuses on current policy primarily because more data are available. The three main areas included:

- Historical and Future Funding Analysis of the Reserve Component
- Average Age of Equipment comparisons: current and projections in the future
- Percent of required wartime equipment available vs. required

Our qualitative analysis uses a Value Critical Analysis and employs a technique called "Theory of Constraints," or TOC[104]. TOC provides analytic tools for answering key questions about the problems that limit an organization. The primary tool that we use is the Conflict Resolution Diagram (CRD). The Conflict Resolution Diagram (CRD) helps determine fundamental cause(s) and what to change. Additional analysis will look at Service Transformation Plans and Service Recapitalization Plans.

Historical & Future Funding Analysis

Accurate records regarding RC procurement only go back to FY 84, and then only in the aggregate. During the late 1980s, the data was delineated by Reserve Component. Nevertheless, several trends have emerged looking at the 18 years of data from FY 84 through FY 01.

First, RC procurement as a percentage of Total DoD procurement is at its lowest percentage ever. In FY 02, RC procurement is approximately 3.12% of Total DoD procurement

before Congress *de facto* reinstated NGREA. This is the lowest percentage total since data has been available for RC procurement. With the Congressional reinstatement, it raises it close to historical levels (4.3% today vice 4.81%). For the last 18 years the Mean was 4.85% with a Standard Deviation (SD) of 1.02% and the Median was 4.51%. In actual dollars, RC Procurement had a mean of $3,833 Million (02 Dollars), with a SD of $1,660 Million (02 Dollars) with a median of $3,494 Million. Prior to the Congressional intervention in FY 02—the total RC procurement would have been $1,902 Million (P-1R only). Additionally, procurement as a percentage of the Total RC Budget (which the RC does not control) for FY 02 is less than 7.5%, a record low percentage, compared with the historical mean of 14.5%. With the reinstatement of NGREA it is approximately 10%, nearly 1 SD from the mean.

Table 3-1 Summary Statistics of Historical Funding Analysis

Based on $02	**FY 02**	**FY 02***	**Mean (FY 85-01)**	**SD (FY 85-01)**	**Median (FY 85-01)**
RC% Total DoD Procurement	4.3%	3.12%	4.81%	1.01%	4.5%
RC Procurement ($M)	$2,601M	$1,902M	$3,833.8M	$1,660M	$3,494.7M
RC Procurement of Total RC Budget	~10.0%	~7.46%	14.51%	5.05%	13.48%

* Data based on OSD submission prior to Congressional revival of NGREA in late December 2001.

Table 3-2 Historical Real Procurement Growth Percentage Comparisons[105]

FY 02 $	Real Growth From FY 93 to FY 98	Real Growth From FY 98 to FY 02	Real Growth From FY 93 to FY 02
ARNG	**-48.8%**	**68.8%**	**-13.5%**
USAR	**15.1%**	**-12.7%**	**0.4%**
USNR	**-19.0%**	**-90.3%**	**-92.2%**
USMCR	**-62.0%**	**-35.4%**	**-75.5%**
ANG	**-36.0%**	**-36.6%**	**-59.4%**
USAFR	**38.5%**	**-57.8%**	**-41.5%**
Total RC	**-40.3%**	**-11.4%**	**-47.1%**
Total AC	**-20.2%**	**29.2%**	**3.1%**

Note: Assumes no Congressional plus-up of NGREA in FY 02. See Appendix 8 for Raw Data.

A quantitative analysis shows that since the implementation of the new DoD policy, there has been an overall decrease in procurement funding for the RC combined, and for each individual RC with a couple of exceptions. One of those exceptions is the ARNG. A significant portion of the ARNG plus-up is due to the conversion of 2 combat divisions to CS and CSS. Since the Total Army is short CS and CSS forces, there was not enough equipment to cascade. That necessitated a significant purchase of new equipment for the division conversions (ADRS).

In Table 3-2, FY 98 is shown as that is when the policy eliminating NGREA went into effect. FY 93 is used as a comparison year after completing Desert Shield/Storm Congressional funding additions. When real procurement in FY 93-98 declined for everyone, it declined more significantly than the AC. As AC procurement funding has increased substantially (since FY 98), RC procurement is actually declining. One other way to analyze RC procurement funding is to look at the trends of RC procurement percentages compared to overall DoD procurement (See Appendix 7 & 8). That shows a steady decline to record low percentages by FY 07. The 1997 QDR goal was to bring DoD procurement to at least $60.0 B. While that goal has been largely realized, it is estimated that procurement TOA needs to be at least $90.0B to sustain the current force structure.[106]

Data from the FY 03 DoD budget show significant real increases in AC procurement from FY 98-07 (+91%), while the RC has virtually no growth from FY 98-07 (+3.5%). Just looking at future growth (FY 02-07), the data shows the AC growing 49.4% with the RC declining 14.5%.

Table 3-3 Projected Real Procurement Growth by Component[107]

FY 02 $	Real Growth From FY 98 to FY 07	Real Growth From FY 02 to FY 07
AC	**90.8%**	**49.4%**
RC	**3.5%**	**-14.5%**

Average Age of Equipment and Equipment Shortages[108]

Average age of equipment is one way to determine whether or not modernization, transformation, or recapitalization is working effectively. Appendix 2 clearly shows the divergence of average ages between the ANG, AFR and Active Air Force from 2000 until 2020. Based on current plans, there is significant force structure at-risk for both the ANG and AFR. Forecasts reflect what appears to be a modernization/recapitalization "train wreck" in the 2010-2020 timeframe. The only exception is the C-130 fleet, which is operated primarily by the ARC (~67%). This is the only major category of aircraft that comes reasonably close to meeting the CSAF average age goals in 2020, and the only category of aircraft where the ARC is in better shape than the Active. Ironically, it is NGREA that has made a significant difference in the average age for both the ANG and AFRC.[109]

For the other Reserve Components, the data are not as detailed, not broken down by component (e.g., AD, Guard, Reserve), sporadic, and outdated. Nevertheless, there is enough data and anecdotal evidence to see the trends in a rough order of magnitude. Although the Army data do not show a clear pattern (see Appendix 5), that is somewhat masked because in

categories where the average ages have little or no significant differences, the RC has shortages of equipment, some significant. It is not difficult to analyze conceptually, that if most of the "Legacy" equipment will be flowing to the RC without significant recapitalization and the AC transitions to the "Objective" force based on current plans, you can expect increasing age divergence between the AC and RC. "...Many of the Army's major systems are 10-20 years old today and will be our units for 30 more years—75% of the systems already exceed their system half-life of 10 years."[110]

Table 3-4 describes the current and project equipment shortages demonstrating this as a potential major issue for the Army and Navy. Appendix 5 shows some stark differences in the helicopter fleet where most of the oldest helicopters are in the RC. That is currently being mitigated with a significant helicopter force reduction, transfers of helicopters from the AC to the RC, and integrating more RC units into their AC counterparts.[111]

Appendix 6 depicts the Average Age of Marine Corps and Naval Reserve equipment compared to overall age. In almost every category, the Navy or Marine Corps Reserve have a higher average age than the combined average (total)[112] and there are a significant number of aircraft categories that are past the Economic Useful Life (EUL).

Table 3-4 Major Equipment Percent On-Hand versus Required[113]

	FY 99	FY 00	FY 01	FY 04 (Projected)
ARNG	91%	85%	81%	86%
USAR	87%	78%	77%	77%
USNR	96%	96%	97%	90%

USMCR, ANG, USAFR, USCGR not shown as they are currently 99%+ and/or projected to be in FY 04.

Transformation

Since the end of the Cold War, transformation has been the mantra for several major defense studies. Transformation is defined as "innovation on a scale sufficient to affect a

military revolution."[114] DoD defines it as "a set of activities by which DoD (Department of Defense) attempts to harness the revolution in military affairs to make fundamental changes in technology, operational concepts and doctrine, and organizational structure."[115] The concept is linked with the idea of a revolution in military affairs (RMA).[116]

Each of the Services has a unique perspective on transformation. Nevertheless, the Army has most comprehensive program under the rubric of Transformation.[117] Army Chief of Staff Gen. Eric Shinseki has been pushing a plan to transform the Army's conventional forces into one more easily deployed and capable of a greater range of missions. In a November 2001 speech, Shinseki said, "The Army must change because the nation cannot afford to have an Army that is irrelevant."[118]

The goal of Army Transformation is to produce a more responsive, deployable, agile, versatile, lethal, survivable, and sustainable force. The Army has championed a balanced approach utilizing a combination of both evolutionary and revolutionary change, and capitalizing on leap-ahead technologies while maintaining current warfighting capabilities.[119]

The Air Force takes the position that it has been an innovative Service. The AF believes there are three key elements in this process: stealth and precision technologies, "effects-based" planning, and new joint organizational structures. The USAF is a leader regarding technology and its importance in transformation. Additionally, the USAF appears to have a clear vision of how it will fight: Global Reconnaissance Strike, the use of "Coercive Campaigns" and "Rapid Halt Operations."[120] Critical to moving away from Cold War garrison force to an Aerospace Force, the Air Force has established the Aerospace Expeditionary Forces (AEFs) that will serve as the basis of deployable combat power and forward presence.[121]

The Navy's ideas regarding transformation remain expeditionary, forward deployed, self-sustaining and mobile. Nevertheless, the Navy sees the need to shift away from single missions and sea control to multi-mission and networked units that can project power more effectively and conduct better littoral joint operations.[122]

The Marines have not bought into the same concepts for the RMA. They see their own reform as an evolutionary process building on their current strengths, much more directed in scope. Nevertheless, the Marine Corps appears to lead the rest of the Services in preparation for 4GW, and have been the most dynamic Service in the doctrine arena.[123]

The biggest questions remain: "how" the RC will be integrated in the respective service plans; the "ways and means" that these plans will be implemented; and to "what magnitude" funding and funding processes will change. In a review of Service Transformation plans to OSD in January and February 2002, there was nothing regarding the RC in the equipping arena other than platitudes regarding interoperability.[124] This lack of attention has direct implication progressively on RC equipment, RC readiness, capability for the AC to make use of their RC services, and thus for the RC and Total Force to meet the requirements of the NMS.

Transformation Analysis

Based on the current transformation plans, there appears to be a potential for decreased integration and uneven transformation that may disparately affect the Army RCs. Unfortunately, the procurement "bathtub" of the 90's (which affected all services) and a coming period of transition, with an uncertain funding stream, threatens to widen the compatibility and interoperability gap even more.[125] By 2020 the AC is predominantly a transformed combat force, while the RC's combat force remains largely legacy (See Appendix 3).

With the RC predominantly a legacy force, the average ages of equipment will diverge significantly, especially in the 2010-2020 timeframe. If funding remains limited, it will be difficult to justify sustaining an aging legacy force over accelerated transformation.[126] Less clear is how CS and CSS forces will be transformed and at what rate. With a majority of these forces already residing in the RC, there will be no avenue for cascading equipment from the AC, as has sometimes been the case for combat units. For the Army, the idea to hedge the legacy force in the RC while the AC transforms seems sound from a macro perspective. Unfortunately, not having the tools to sustain and selectively recapitalize that legacy force portends the progression of problems previously outlined – with risks for executing the NMS.

For the other RCs in the other Services, it is difficult to determine the role of RC equipment in transformation. There has been an absolute dearth of research in the equipping area and RC modernization has been aptly coined as the "third rail" of Total Force issues.

Based on the current transformation plans, there appears to be a potential for decreased integration and uneven transformation that may disparately affect the RCs. The data is most clear with the Army because they have the most detailed general plans regarding equipment for the their three components. For the other RCs in the other Services, it is difficult to determine the role of RC equipment in transformation. Unfortunately, the procurement "bathtub" of the 90's (which affected all services) and a coming period of transition, with an uncertain funding stream, threatens to widen the compatibility and interoperability gap even more.

Qualitative Analysis

Qualitative analysis examines phenomena primarily through words and tends to focus on dynamic, meaning, and context. Qualitative research uses observation, interviewing, and document reviews to collect data.[127] Social sciences have, in this century, reinforced the

language of utilitarian individualism, and its assumption that social problems are primarily technical rather than moral or political.[128] In reality, modernization decisions are rarely based on rational principles, but extra-rational that includes political, systemic factors, and values.

Commentators have argued for the inclusion of ethical evaluations in the analytic process, but practitioners have for all practical purposes ignored or avoided such issues. Policy analysis, at its core, is normative and is delineated primarily by the choices of values and their ordering. Those that claim otherwise do so by the assumptions they make, framing the problem, the models used in analysis, and the choices of alternatives.[129] That is not to say that there is no mention of ethics at all. When ethics are used, they are primarily utilitarian by way of cost-benefit analysis. "The only form of ethical analysis routinely used by analysts is utilitarianism ... rarely are other ethical perspectives or the work of leading ethical thinkers invoked."[130] A value-critical analysis used together with a cost-benefit analysis is synergistic and more comprehensive from a methodological point of view.

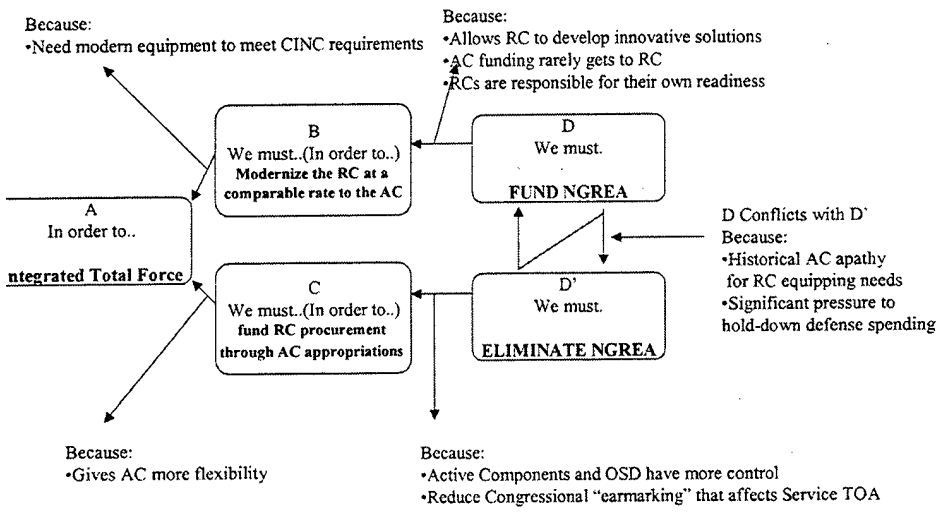
A value critical analysis has two major premises: interpretation of facts cannot be separated from values when developing or evaluating policy; and second, an explicit role for values must be developed for policy analysis. Value critical analysis is a complimentary framework to pure cost-benefit analysis. A value critical analysis describes the importance of values, theory and research and their linkage.[131] Policy analysis, at its core, is normative and many times determined by the choices of values and their ordering.

Our analysis employed a relatively new technique called "Theory of Constraints," or TOC. TOC began as an analytic technique, based on the scientific method that could be applied to improving factory production. It has evolved into an approach for analyzing organizations of all kinds in order to solve problems that hinder the attainment of organizational goals. Ironically,

it has a strong value component to it and utilizes logical reasoning. In the simplest terms, TOC provides analytic tools for answering three key questions about the problems that limit an organization: "What to change? What to change to?; How to make the change?"[132]

Figure 3-1 Theory of Constraints Diagram

PROBLEM: NGREA IS "PORK BARREL" SPENDING



The symptoms analyzed were: perceived "pork barrel" spending; a lack of OSD control; and overall pressure to reduce spending. The underlying problems we investigated include: disconnected Service Modernization Programs, lack of overall procurement funding; Congressional prerogatives; an apparent AC apathy towards the RC in the equipping arena.

For our value critical analysis, we selected several values and goals: effectiveness, efficiency, total force, flexibility, accountability, and politics. Effectiveness measures the ability to succeed…is the program successful based on criteria set forth in the policy? Efficiency is the ability to reach the goal at minimal cost. This tends to focus on the process while effectiveness focuses on results. Total Force means whether the spirit and intent of the Total Force Policy is

being adhered to. Flexibility has to do with the ability of the policy to adapt to changing conditions in a timely manner. Accountability is the ability to track and audit procurement funds, the central premise being that in our republic, the government is accountable to its citizens. Finally, we also did a political analysis that looked at internal politics (Services, RCs and OSD) and the external politics (Pentagon, Congress, and military coalition organizations).

New Policy Options

Through independent research and interviews with key AC, RC and DoD leaders, Congressional members and staffers, military coalition organizations, and a 2001 USAF QDR Study on ARC Modernization, our team developed a number of potential new policies in several areas and rated them using a Value Critical Analysis. The options and their description are shown below, followed by an analysis table (Table 3-5), then an explanation of the analysis.

1. Current Policy (Rely on AC Appropriations)

The current policy relies almost completely on Service P1-R accounts with no separate money for RC procurement. Additionally, current DoD equipping policy relies on the "first to fight, first to equip" concept with more detailed Service equipping policies to implement the DoD guidance. This policy assumes the continued success of Total Force integration to the extent that it is a Service responsibility to ensure adequate procurement monies are spent for their respective RC(s).

2. Fencing a portion of Active Component appropriations for RC modernization.

Fencing means setting aside funds. This is similar to "earmarking" but it resides inside the DoD and Service processes. This could be done either through up front Defense Guidance to the services, or it could result from Congressional restrictions in appropriations language.

3. Separate RC modernization appropriation(s)

This option establishes new DoD appropriation(s) or new Service appropriation(s) (e.g., USAR Procurement) similar to the separate personnel and O & M appropriates for each RC. This would replace the special Congressional appropriation.

Separate fiscal guidance could be given up-front by OSD, which would allow RCs to compete for resources within the overall DoD top line rather than competing in the Service program. This option could provide better visibility, control, and accountability for RC Chiefs who are now held accountable for their component readiness and capability without the means to adequately influence results.

4. Earmarking Active Component Appropriations

Earmarking is defined as "revenues dedicated by law to a specific purpose or program...Earmarked expenditures are dedicated by an appropriations act or the accompanying committee report to a particular project or activity."[133] This process is has already become more common as NGREA has declined. This appears to be a Congressional alternative to NGREA in the last few years. Previously, Congress would add money to NGREA, which would then go to a particular RC. With earmarking, Congress adds money to the AC procurement account with specific guidance on how/where to spend the money. Sometimes, however, this guidance is not followed, causing friction between the components.

5. Reformed NGREA

A "Reformed NGREA" would keep most of the critical policy elements while adding and deleting policy to mitigate problems and concerns with the former NGREA policies. First, the name should be changed (e.g., Reserve Component Transformation Account-RCTA). Because of the unpredictability of NGREA, it is virtually impossible to do any long-range or strategic

planning. It should be budgeted across the FYDP as a separate appropriation (either as an OSD appropriation or individual RC appropriation).

Require the RC to vet RCTA equipment requests with their respective AC counterparts before submitting to Congress, thus ensuring the matching of RC mission and equipment priorities with those of the AC. The key stakeholders (AC, RC, OSD, Congress) would negotiate other details of the Reformed NGREA. Just as the elimination of NGREA was negotiated, so should the reform.

Analysis of Results Summary

Table 3-5 Qualitative Analysis Of Policy Options

	Effectiveness	**Efficiency**	**Total Force**	**Flexibility**	**Accountability**	**Political**
1. Current Policy	RED	YELLOW	YELLOW	RED	RED	RED
2. Fencing AC Appropriations	RED	YELLOW	YELLOW	RED	RED	RED
3. Separate RC Appropriations	GREEN	RED	GREEN	YELLOW	RED	RED
4. Congressional Earmarking	RED	RED	YELLOW	YELLOW	RED	YELLOW
5. Reformed NGREA	GREEN	YELLOW	GREEN	YELLOW	GREEN	GREEN

Green: Satisfactory; Yellow: Marginal; Red: Unsatisfactory

1. Current Policy (Rely on AC Appropriations)

The policy to eliminate NGREA may have been a case of implementing a solution to deal with the symptoms rather than the underlying core problems. Although there have been significant increases in P-1R accounts for most RC (a success); that has **not** offset the loss of NGREA. Additionally, there have been significant disparities between various Reserve Components, which may not be conducive to Total Force Policy (Yellow). Some of this may be due to different needs and requirements, but some of it is related to the differences in political

clout between the Reserve Components vice requirements. In almost every measurable category, the overall effectiveness of the policy is unsatisfactory (Red). It appears that Congress apparently agrees—making the combined OSD/Congressional policy "null and void" after the *de facto* revival of $699.1M in the NGREA account. This policy has little flexibility (Red) for those most responsible for RC readiness. It requires Herculean efforts to "make things happen" and fix RC problems when there are few vehicles or tools to do so.[134] Accountability for the current policy is unsatisfactory (Red). Our research revealed significant problems in the P1R data and using AC procurement as a "vehicle" (See other issues discussion).

2. Fencing a portion of Active Component appropriations for RC modernization.

On the positive side, this option could mitigate a NGREA process deficiency by requiring the RC to work their funding requirements through the Service acquisition, planning, programming and budgeting processes.[135] Although this option would provide a possible floor for RC procurement, it only addresses P-1R monies, which have significant problems in accountability. This option is rated as "Red" in Effectiveness category because it does not eliminate or mitigate any of the fundamental problems associated with the current policy. At the very best, it may be a marginal improvement in efficiency, but as there are no fundamental reforms to significant processes that affect this area, it is rated no better than the current policy (Yellow). In the Total Force area (Yellow), this policy has the potential to mitigate significant RC procurement downturns and requires the RC to work their funding requirements through Service processes; but it may cause friction among Service commands below the Pentagon, while possibly causing friction between the components for TOA within the existing service top line.[136] If there is a "floor" or minimum funding for the RC this would impinge on AC flexibility and would be rated "Red." It would also do little to enhance the flexibility of the RC. This option

does nothing to enhance accountability, so this rating would remain "red." From a political perspective (both internal OSD, Service and Congressional), this policy appears to be a lose/lose requiring a "red" rating.

3. Separate RC modernization appropriation(s)

The ability to have separate appropriation would be a "green" from an effectiveness standpoint. From an efficiency standpoint, this increases the complexity of the budget process by adding additional appropriations and will require additional staff in the RC to facilitate this option—necessitating a "red" rating. This option could provide better visibility for RC procurement and RC leadership. RC leaders are held responsible for their component readiness but with limited means to influence results. A potential drawback is that it appears to take responsibility away from the ACs. Most of the RCs do not have the staff or experience to do acquisition, so implementation may be problematic in short-term. From a Total Force perspective, it would be hard to rate this other than a "green." From a flexibility standpoint, this would rank "yellow"—better than the current policy, but without the ability for the AC to shift those funds to urgent priorities. This would be a "red" in the political category from an AC perspective and may rank in the category as "non-starter."

4. Earmarking Active Component Appropriations

Congressional earmarking appears to be "red" in the effectiveness category since it can be predominated by political "whim" and can be subject to "pork barrel" politics, although to refer to all congressional earmarks as "pork barrel" would be erroneous and an overreaction. From an efficiency standpoint, anything that would rely more on Congress would have to be rated "red." From a Total Force standpoint, this has been a positive when Congress truly adds

additional TOA. When it does not, this creates major problems between the AC and RC because the AC has to reduce other programs when this happens. That necessitates a "yellow" rating even in the Total Force category because of potential backlash effects. From a flexibility standpoint this does improve on the current policy because RC needs that are dropped at the last minute can have a final hearing. In the area of "Accountability", this option still ranks "Red" from a number of perspectives; from the AC there is the issue of "earmarking" equipment that is not required and from the RC sometimes the "earmarked" equipment never makes it to the designated component. From a political standpoint this category is a "yellow." Congress still has the Constitutional prerogative to "earmark" if it so desires but it can create tensions between the AC and RC. Ironically, virtually no one in the process claims to like "earmarking," but it continues to "...flourish because members of Congress would rather decide where appropriations are to be spent than let executive officials make the decisions."[137]

5. Reformed NGREA

A number of people believe that NGREA is an inefficient and undesirable policy. That is based on a number of perceptions of, and experiences with the NGREA practices of the past. A reformed NGREA would enhance the effectiveness by addressing AC concerns, but giving the RC a stopgap policy to address their needs. Efficiency in a Reformed NGREA option would likely not improve, but would not change substantially from the current status resulting in a "yellow" rating. There is no doubt that a "Reformed NGREA" would be a welcome policy change for all the RC. For the AC, as long as it does not affect Service TOA and the RCs use service processes to vet their requirements, it could be a "win/win" from a Total Force perspective. Flexibility would rate a "yellow"—an improvement over the current policy, but still

problematic unless additional change occurs beyond "Reformed NGREA." Accountability would be enhanced depending on the proportion between P-1R and NGREA money for procurement. Politically, this could be made a win/win. That for the most part has been effective, but has some problems. Unfortunately, "Reformed NGREA" is not comprehensive enough to solve the myriad of problems in this area. That is why additional options or a combination of options may be the best overall solution.

Other Issues

Equipment requirements are identified and validated by the Services, and approved requirements are programmed through Service POM processes, then reported in what is called the "P-1R" Report. The P-1R is a subset of the Procurement Programs (P-1) and is provided to Congress. Money programmed and reported in the P-1R may not be executed in the same way. Even if it is programmed and executed properly, the equipment could still get diverted and not go to the RC. In some instances, the AC has complete control over these monies and it appears to be a Financial Management (FM) exercise spreading procurement dollars in RC Program Elements (PEs).

Based on interviews with RC action officers (AOs) and other officials, this process appears to be effective for the Marine Corp Reserve and not an issue with the Coast Guard Reserve. The rest of Reserve Components have problems with P-1R, some significant.

CHAPTER 4
CONCLUSIONS AND RECOMMENDATIONS

Making New Policy a Win-Win for all Stakeholders

The policy requirements analyzed and proposed throughout this paper are driven by the following logic:

1) The Department of Defense is charged with keeping the nation safe for our chosen way of life – defending domestic tranquility.

2) Each portion of DoD is assigned respective, critical roles in that charge – including the performance of requirements and missions assigned to the reserve components.

3) In order to perform the respectively assigned roles, DoD and the various components must have adequate resources allocated corresponding to their assigned missions.

4) The resources described in part three must originate from Congress, the body that has the mandate.

The Reserve Forces Policy Board (RFPB) summarizes this progression in two sentences: "*The principal mission of each of the seven Reserve components is to maintain properly trained and equipped units available for prompt mobilization for war, national emergency, or other contingency operations. The Reserve Components are integral to the National Military Strategy.*"[138]

It follows that failure to adequately perform any portion of this logical progression necessarily jeopardizes each preceding element. And failure at the top level – national safety – is simply neither acceptable nor negotiable. For any proposed solution to truly succeed, it must address a number of critical issues.

It must consider the political realities and needs of our Legislative System, including the sometimes apparently conflicting needs of individual members and of the nation at large. Whenever a doubt exists, however, national defense should never abdicate to individual, or constituency desires, or convenience.

It must be fully transparent, insofar as not jeopardizing national security permits. That is to say, justified requirements should lead to proper budget requests, leading to adequate fund appropriation, matched by fund execution as appropriated ... in a fully visible, easily traceable, accounted-for manner.

It must provide autonomy and flexibility for those within the services and components (Chiefs, Directors, etc.) to fulfill the needs of their respective responsibilities as they see fit during their tenure ... yet tempered with appropriate oversight and matching of priorities,[139] allowing for responsiveness to short-term, shifting service and component needs. Finally, Service and component Chiefs/Directors must be accountable as they exercise the authority and responsibility described above.

CONCLUSIONS

The RC equipping process is convoluted and many times irrational, with political input from several sources and outcomes that defy comprehension. The lack of detailed RC procurement data and a dearth of research in this arena were limitations. Also, the ability to get aging data from all the Services that depicts and compares the components clearly was very problematic and in most cases we were unable to acquire it.[140]

The central premise of any republic is that the government is accountable to its citizens. The authors of our Constitution understood this well and designed a system to enforce that premise. According to a recent Inspector General Report, the U.S. military's financial records

are not in good enough shape to face an audit, let alone pass one.[141] Our research revealed problems in the P-1R data. A recent DoD Inspector General study confirmed that the "Services had difficulty in providing execution data for the Reserve Component procurements in the Active Component accounts."[142] The lack of knowledge where money is spent is not just an issue of efficiency, but it is an issue of effectiveness and accountability. Without reliable costing or execution data, it is nearly impossible for senior leaders to make prudent decisions.

Lisa Jacobson, of the GAO states: "When you spend money, you account for it—that is required in the federal government." That statement is not only based on legislation, regulation and law, but it is very specifically listed in the Constitutional. Article 1, Section 9, Clause 7, requires Congress to publish a "regular Statement and Account of the Receipts and Expenditures of all public Money..." The whole system of using AC procurement accounts and P-1R data needs either significant reform or new systems and processes designed from the foundation. The use of P-1R or utilizing AC appropriations appears "broken" from an accountability perspective.

The policy to eliminate NGREA (circa CY 1997) appears to have been a case of implementing a solution to deal with the symptoms rather than the underlying problems. The symptoms were perceived "pork barrel" spending; a lack of OSD control; and overall pressure to reduce spending. The actual underlying problems we have investigated include: disconnected Service Modernization Programs, disconnected Transformation Plans; lack of overall procurement funding; Congressional prerogatives; an apparent AC apathy towards the RC in the equipping arena—even by organizations that are supposed to represent RC interests.

In almost every measurable category, the overall effectiveness of the current policy (Rely totally on AC procurement) is unsatisfactory (Red) with only a few exceptions. It appears that Congress apparently agrees—making the combined OSD/Congressional policy "null and void"

after the *de facto* revival of $699.1M in the NGREA account. While providing a sorely needed short-term benefit for sagging equipment accounts, it further highlights the need for a coherent, comprehensive policy solution that affects the Reserve Components. The "status quo" is unacceptable from both an internal DoD analysis and from a Congressional/DoD perspective.

Unfortunately, the RC will NOT be able to make innovative acquisitions (e.g., Litening II targeting pods, et al.) under the current OSD policy. When the RC comes to the table with their own money (issue of control and flexibility not quantity of dollars), it has the ability to promote a "culture of creativity and intelligent risk-taking..."[143] The transformation of the RC must include the ability to do these kinds of things in the future.

Cascading of equipment to the RC will be limited in the future due to the procurement holiday of the 1990s. The implications of this are dramatic in the mid-to-long term. This requires a transformation of RC funding, AC/RC modernization processes, DoD equipping policies, not just an infusion of money through outdated processes.

If Homeland Defense becomes a primary mission for the National Guard and for the nation, it appears that the current equipping strategy "first to fight—first to equip" is out-of-date. That is why it is imperative that the Roles and Missions requirement for the 2001 QDR, which was not completed for the September 30, 2001 report deadline, be completed as soon as possible. That portion of the QDR will directly affect the equipment (and funding) requirements of all services and components, though perhaps more particularly for the RC.

National Military Strategy (NMS) Implications

The RC role(s) has changed significantly since the Gulf War. While readily acknowledged by DoD and the respective Services that the RC is more vital (and more utilized)

than any time since the Korean War, this increased use has come without a commensurate change in national policy for the RC. There is consensus about this dichotomy between RC and AC leadership and the citizen-soldiers (airmen, sailors and marines) who serve. Much of this has happened out of necessity, with evolutionary policy changes to make it such—forgetting, however, many of the larger or macro policies. This has resulted in a significant increase in day-to-day operations over the last 10 years. As this problem has received little attention, one could argue that it is almost a matter of neglect. Currently, there is an on-going DoD process to look at RC roles and missions.[144] According to Colonel Dallas Owens, the events on September 11, 2001, "...changed aspects of [the] domestic security environment that will ultimately redefine roles and affect Army [other Services, too] missions for domestic security."[145]

A key question at the start of the Bush Administration was whether the NSS would more resemble a Powell Doctrine or a Clinton Doctrine.[146] That choice has significant impact on our NMS and therewith, how we will utilize the RC. As the Bush Doctrine and NSS emerge in more detail, it is imperative that funding plans and processes adjust appropriately.

At the very least, the increased RC utilization and AC-RC integration require constant review of and likely changes to the Total Force Policy, and to associated policies that implement this vision. Failing to do so will have two direct consequences: the services' capabilities to accomplish the NMS will be diminished; and Congress will continue to fund programs such as NGREA without DoD oversight – a continuance of an undesirable status quo.

Equipping Policy Needs Changes

Prior to the catastrophic events of 11 September 2001, one could say that the

RC units were already "forward deployed" and had been practicing "homeland defense" throughout the United States.[147] Homeland Defense and the transformation of the RC take on an even greater importance as we address asymmetrical and 4th Generation Warfare (4GW) threats.

The concept of "First to Fight, First to Equip" appears to have been a viable policy for Cold War constructs. Now a new paradigm may have come into existence, following "9-11" that may be the *raison d'être* for a "First to Use, First to Resource," that would include homeland security contingencies. Some of those contingencies may be of vital importance to the nation, and should have the highest priorities for resources.[148]

One example of the current policy ineffectiveness is the lack of High Mobility Multi-purpose Wheeled Vehicles (HMMWV) for the USAR. The HMMWV is considered the best tactical wheeled vehicle in its class with the most versatile mission profile of any transportation in the U.S. Army inventory. However, the USAR is short of having their complete authorization of 16,204 HMMWVs by 5,657, a 35 percent deficiency.[149]

The RC is likely the best-suited for most of the roles and missions associated with "Homeland Security." While for years, the RC has assisted the AC in support of national defense, and most particularly, Operations Other than War (OOTW) and Stability and Support Operations (SASO), it has typically done so while being the "caretakers" of outdated and aged equipment. In current transformation vernacular, it has become better know as the "Legacy Force," based on current analysis and the latest Service Transformation Plans.

Legacy equipment consumes enormous amounts of funding to maintain, operate, but most importantly, it *de facto* decreases RC capabilities. This serious drain on precious funds, the increased RC role, and its anticipated growth due to inexorable homeland security demands, creates a compelling argument for contemplating a different approach to transformation,

modernization, and recapitalization. Most RCs prefer to be closely aligned with the ACs, because when they are not aligned with wartime contingency plans, there is less support from the ACs for resources and funding necessary to maintain readiness and modernization.

It is unrealistic to believe that the Services' continued goal of "full integration" of the components would completely solve these problematic issues, particularly in equipping. While there are many worthy goals in this integration policy, it must be more comprehensive. Currently, OSD is considering a New Total Force Policy and Vision. While this is very important and commendable work, the missing elements have been the dearth of follow-on policies that implement the policy and vision. Additionally, our recommendations do not focus on integration efforts because there are a number of Service initiatives to enhance "integration."

Since 9-11, there are some who have argued that the potential changes in roles and missions for the RC necessitates the bypassing of RC in any significant procurement or recapitalization for the next several years. We categorically reject this as a viable notion. Ironically, there has been no call for a moratorium on AC procurement as we continue to fund Cold-War weapon systems that have little justification with the emergence of asymmetric and 4GW threats.

RECOMMENDATIONS

Short-Term Recommendations

Accepting the status quo and simply relying on Congressional adds of NGREA funds (as for FY 02) reflects an abdication of leadership in a critical area. The authors recommend a "Reformed NGREA" be developed at the strategic level of OSD considering the following:

1) Change the name to reflect DoD transformation efforts (e.g., Reserve Component Transformation Account-RCTA). Tie this to the on-going transformation efforts.

2) Make this "RCTA" a separate appropriation for procurement similar to other funding (while each RC has its own, separate Congressional appropriation for Personnel, Operations & Maintenance, and Construction [Milcon], there is no specific RC appropriation for procurement), with the following qualifications:

-- It should be budgeted across the FYDP. This would provide for the RC Chiefs the sorely needed capability to do long term equipment planning that is almost non-existent in the current process.

-- Require the RC to vet RCTA equipment requests with their respective AC counterparts before submitting to Congress, thus ensuring the matching of RC mission and equipment priorities with those of the AC.

When Congress desires to provide additional funding (which will happen as evidenced by the current NGREA, etc.), they will already have a fully vetted list of requirements for the next five years, from which they could pull future items forward for present year funding – exactly the same as currently done with Milcon and other funding. This would greatly eliminate the current haphazard fashion of NGREA funding, which, while providing short-term help in many areas, confounds AC-RC combined efforts and permits no long-term planning for the RC or AC. Such a process would become a critical tool to help the RCs for both modernization and future transformation. Choosing not to develop a tool like this is a *de facto* vote to maintain the status quo, with continued, serious implications for readiness and national security.

There are a number of other considerations for reaching the desired "Win – Win":

1) Fix the Accounting problems—aggressively pursue the implementation of P-1R reform. One possible way to motivate a solution: provide positive and negative incentives for services that comply in a timely fashion. For example, DoD could provide greater Total Obligation Authority (funding) for services that comply with P-1R reform and those that can pass procurement audits all the way to delivery.

2) In the area of equipment acquisition, the very successful Air Guard and Air Reserve Test Center (AATC) should be expanded to a full battlelab (Air Reserve Component Transformation Center) in the Air Force and replicated in the Army (joint ARNG and USAR) and Navy (joint Naval Reserve and Marine Corps Reserve). These centers, following AATC's successes, should explore in-depth ways to leverage unique equipment capabilities from allies and the commercial sector (e.g. Commercial-Off-The-Shelf and Commercial Derivative). Our team recommends the set-up of an additional Army Transformation Center that focuses on CS/CSS, as this appears to be the weak link in the Army Transformation Plans.

3) A steady-state stream of procurement funding should be available to these Transformation Centers (Air Force, Army, and Navy/Marine Corps) so they can develop innovative and cost effective equipment for their respective Services. These centers should also have access to RDT &E funding. The approval for proceeding with the expenditure of RDT & E funds would reside in OSD/RA.

4) An additional consideration is to explore RC participation in unique acquisition programs such as WRAP–Warfighters Rapid Acquisition Program – to leverage greater participation in high-payoff developmental projects. Additionally, anecdotal evidence from interviews suggests there are substantive problems regarding the RC's ability to procure equipment for Operation Enduring Freedom.

5) DoD and Service Recapitalization Plans must include better aging data that differentiate between the components; Service modernization plans should address the RCs in a comprehensive manner, not as an afterthought.

6) Update and overhaul DoD Directive 1225.6 "Equipping the Reserve Forces." This should take place shortly after the Roles and Missions Report. This should account for the increased role of Homeland Defense and other changes in the National Military Strategy. For instance, one of the areas DoD should address is sole ownership of "legacy systems" by the RC.

Medium-Term and Long-Term Recommendations

We recommend a new vehicle (other than P-1R and AC procurement accounts) to fund RC procurement. We believe that the current system is not completely reformable. Additionally, we recommend a totally new process for purchasing National Guard and Reserve equipment that would eventually replace the Reformed NGREA—RCTA. One option (others should be developed and studied) might be to implement a procurement process similar to that used by the services and DoD for Military Construction (MILCON), but keeping it in the regular Defense Appropriation Act. We would not recommend a separate appropriation act in Congress. This process has positive and negative aspects that should be thoroughly analyzed.

For "Other Equipment," and "pop-up" issues we recommend a new process that runs through OSD/RA, but one that is more predictable than the current Congressional ad-hoc nature of funding "other equipment." We believe that OSD/RA should be given an amount money each year that can be distributed to the RC that have critical needs that cannot wait for the next budget cycle. The Reserve Components would bring their requests through OSD/RA to prioritize the most critical readiness requirements. OSD/RA would allocate funds on a case-by-case basis as the need arises.

We recommend legislative changes to Title 10, United States Code, Section 10541 that would overhaul the Annual Report to Congress, making this process and report simpler and more relevant. Although most experts would agree that this report contains valuable information, it is not concise and succinct enough for civilian and military leaders to digest and take corrective action if required.

Roles and missions used to be a unique reporting requirement that originated from the 1986 Goldwater-Nichols Bill. The last time this was done as a separate report was the Commission on Roles and Missions in 1995, headed by Deputy SecDef John White. Now, these issues are incorporated in the Quadrennial Defense Review (QDR). We recommend that issue be separate from the overall QDR.

We recommend that the Coast Guard Reserve increase commensurately with the AC Coast Guard in end strength and explore the actual percentage mix between the Coast Guard Reserve and AC Coast Guard. Since the Coast Guard Reserve is the smallest percentage of its Total Force of all the components, we believe this warrants an increase from the approximate 18% of total end strength. With this recommendation for increased end strength, the Coast Guard should look at creating more RC unit-equipped organizations.

Additional research on RC Modernization and Recapitalization should be accomplished by respected "Think Tanks" and other policy organizations. We recommend that the Rand Corporation make this a major subject of study for both the Army and USAF. For the USAF, we recommend that Rand include RC officers in their Military Fellowship Program, similar to that recently enacted at the Arroyo Center.

The RC needs to develop increased expertise in the areas of requirements and acquisition. We recommend a small but larger cadre to include RC General Officers in command slots within

these organizations. This is critical to the improved AC/RC integration process. A growing example of this is already found in the Army Materiel Command (AMC).

Many of the problems associated with funding and process issues dealing with equipment are driven by the PPBS and that is ultimately driven by the Congressional Budget Act of 1974. Nevertheless, real PPBS reform, to include acquisition reform that incorporates the RC, must be adopted.

- Redesign the Planning Programming Budgeting System (PPBS) to a Planning Budgeting Performance Accountability System (PBPAS) with a desired goal of simplifying the overall process and a real reduction in personnel working (contractors included) the processes at the Pentagon and reduced workloads for Major Commands, Reserve Components and other agencies outside the Pentagon.[150]

Until we combine both the information-age technology and reengineering of processes, we cannot truly revolutionize our processes. In short, the technology, when organized and applied in this counterproductive way, permits us to know more and more while understanding less and less.[151]

Throughout the last few pages, we have listed a number of recommendations regarding RC and equipment. The most fundamental issue is that the problems associated with RC procurement cannot be ignored. We cannot continue to delay addressing these dilemmas in the hope that eventually they will vanish, as this will only exacerbate the situation. Since 1991, there have been six major military reviews, though there still has not been a fundamental change in NMS and structure. That must change. The events of 9-11 and our focus on those threats require substantive change—not business as usual.

Because the Active Component (AC) has downsized significantly and homeland defense becomes our highest priority—the Reserve Component (RC) is *de facto* critical to our NMS. The RC roles have changed significantly since the Gulf War without a commensurate change in national policy regarding the RC. We must address those changes with new policies regarding the RC that include equipping, modernization, and recapitalization.

LEGISLATIVE / IMPLEMENTATION STRATEGY

The focal consideration in all elements of funding equipment for the RC is the Congress, and flowing there from, all entities that interact with and attempt to influence, (with greater or lesser effect) the Legislative Branch. Funding the Armed Services is clearly their responsibility.

> *The Congress shall have the power: "To provide for the common defense ... to raise and support Armies ... To provide and maintain a Navy ... to make rules for the Government and Regulation of the land and naval forces ... to declare war ... and to make laws which shall be necessary and proper for carrying out the foregoing powers".*[152]

The events of 11 September have caused the Congress to review their level of commitment to funding all service components, and the fiscal implications of that reassessment remain to be seen. Possibilities for significant improvement in this area are quite real.

As outlined above, while the Executive Branch both commands the military and makes recommendations concerning its funding, it is the Congress which controls the purse strings. This chapter addresses an approach to influencing that process to implement the recommendations suggested in the previous chapter.

Political Considerations

When working with the Congress, there are several maxims, which must be remembered in order to be successful:[153]

- All politics are local.
- Treat the Members like Royalty – Treat the Staff like Members.
- Staffers must get to know you as a source of knowledge – build trust.
- Half a loaf on time beats a whole loaf late … but it better be good.
- Only inform & educate – never lobby.

As indicated in the section on making the new policy a "Win/Win" for all stakeholders, in order for a new equipping policy to be accepted by Congress, it must also somehow help the Congressmen meet their needs. Remembering that "all politics are local" means that you must be able to relate your project to something the member can sell back home. If it does not translate to something concrete for his or her constituents, they are reticent to use it.

As legislators must carefully manage their time, they have tremendously empowered their staff to wade through the myriad of issues, and make recommendations as to which their Congressman should devote time and energy to. At the center of this system are their staff, and particularly their Professional Staff Members – "PSMs". The PSMs are extremely experienced, and due to the deference they receive over a long period, are often better informed over the lifetime of military systems than many military members who come to brief them. They are implicitly trusted by the members to be a filter for most information that gets to the member. And, in order to be effective with the PSMs, they must come to trust you as a "*source of knowledge*", and you can never deviate from the truth. If they believe you have done anything to breach that trust, you will never again be called upon for information, and you are done on The Hill.

This leads to the fourth point:"Half a loaf on time beats a whole loaf late … but it better be good." As the staff grows to trust you, they will call with last minute requests for information. Often, the member may even be on the floor of the Congress, contemplating a vote. If complete information is not available in the timeframe in which they need it (for example, a pending vote),

you provide them with what is available on time, indicate that it is a "best guess" (but it must be good), and allow them to make an educated vote. If the information is incorrect, or comes even seconds after the vote is cast, it is worse than useless – you have damaged that level of trust and thus become less useful for future projects. Again, you are essentially no longer a source for them.

Last, in a military role, you can never lobby. In that position, you must only "Inform and Educate." This implies a fine line between the two, but again, when that line is crossed, trust is broken. You become useless both to the Congress (staff and members) and to your respective service, which has asked you to carry their message to Congress.

Strategy for RC Equipping Policy

Despite there being four large committees that deal directly with military issues (House/Senate Appropriations – Defense, and House/Senate Armed Services), each with their respective chairmen and ranking (minority members) members as well as PSMs who serve each committee, there are other entities which should be approached to effect this desired change.

The driving force behind the DPP and NGREA has always been the House leader (or leaders) of the "informal" Guard/Reserve Caucus[154], a loosely configured group of members dedicated to forwarding the concerns of the Guard and Reserve … and of their constituents back home. As the PSMs for the head of the caucus prepared that year's NGREA information, they would keep their Senate counterparts apprised, prepare the NGREA portion as an "Item of Special Interest"[155] for inclusion in the DoD appropriations bill, and then carry the requisite information to the conference mark-up sessions as the bill was completed.[156]

Thus, the center of gravity for changing the RC equipping policy is the Guard/Reserve Caucus, the caucus leadership, and even more particularly, the PSMs for the caucus leadership.

They are in the position to make or break the policy. Hence, they become the final target audience for this desired policy change, and must be the focal point for this paper's desired outcome.

Of course there are other extremely important entities whose roles in the final workings are both vital and unavoidable. As OSD-RA will be required to implement the policy, it must also be vetted through them … though remembered that both the policy and the monies to make it work are subject to Congress and the aforementioned Caucus.[157] OSD-RA must be completely informed on any policy recommendation the authors propose, though they can neither dictate nor have veto authority over those proposals … that final authority rests on The Hill.

Equally important on the military side is the role of the Reserve Forces Policy Board. Due to their unique charter from the Congress, they are required to be an honest broker, and are empowered to present to Congress positions which might not be shared by the current civilian defense leadership. This permits them to validate information (such as that proposed in this paper) when there may be dissenting views that would otherwise impede that information's flow.

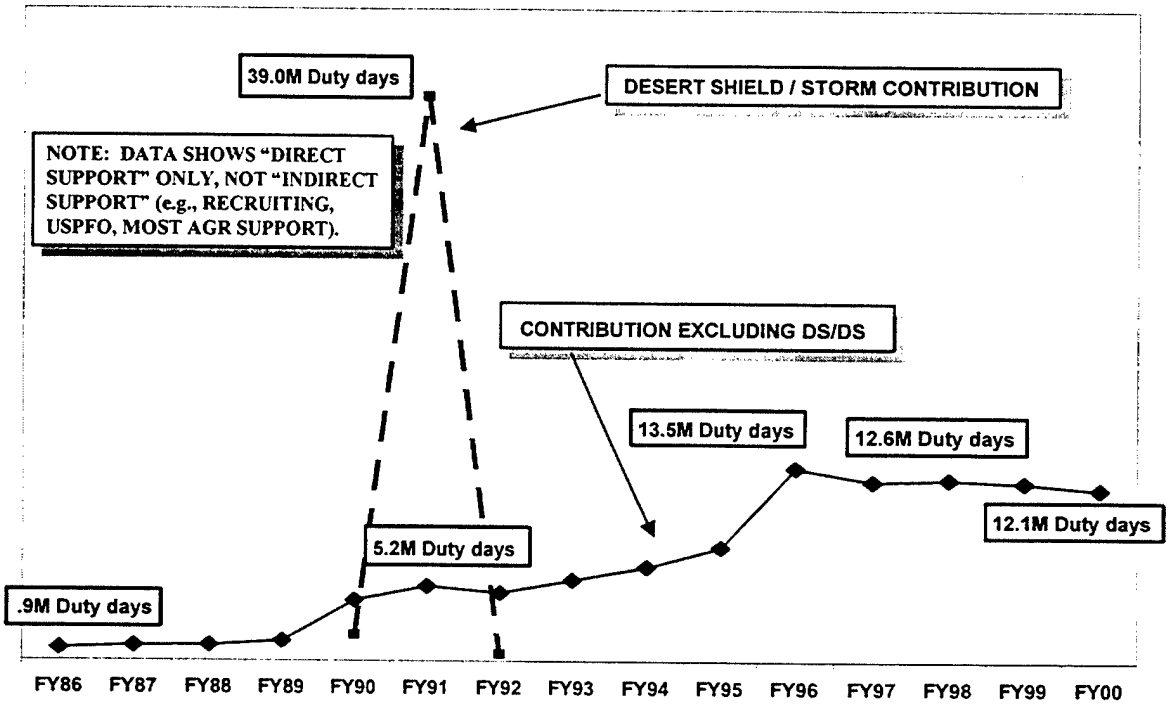
There are a number of professional organizations who interface daily with Congress, and have developed a long-term relationship with both the House Caucus and the Senate Guard Caucus. The Reserve Officers Association, strategically headquartered immediately northeast of the Capital Building and across the street from the Hart and Dirksen Senate Office Buildings, hosts the annual Guard/Reserve Caucus Breakfast. They are perhaps the most broadly accepted spokes people for the entire RC, as their membership crosses all seven reserve components, and also includes a number of active duty personnel. Their Executive Director stands ready to assist in whatever form possible to improve the equipping policy processes.[158]

This unique status is perhaps best reflected in the events leading to the 1998 agreement to cut back NGREA funding. When Dr. Hamre (then the Deputy Secretary of Defense) chose to make public the Secretary's intent, he called ROA, made known his desire to be that year's speaker at the Guard/Reserve Caucus breakfast, and used that forum to announce the cessation of "excess equipment list" passing.[159]

Other organizations have also offered their assistance in getting the word out. The Association of the United States Army (AUSA) graciously offered to assist in sponsoring forums, putting out papers, magazine/newsletter articles, etc., to make certain the issues are properly vetted.[160] The National Guard Association of the United States (NGAUS) has perhaps the strongest military lobbying position due to their unique state relationship with the respective Senators, Governors and state Adjutant Generals. All of these organizations should be kept informed, and their abilities leveraged to bring about positive policy change.

Lastly, each service (RC and AC) has a body of officers/civilians assigned to work with the Congress to provide information on any number of defense related issues. At a minimum, it is incumbent upon the authors to: keep these offices informed as the work progresses; seek continued input from them; and involve them in any effort when approaching the Members and Staffers.

APPENDIX 1[1]



[1]Source OSD/RA.

APPENDIX 2

USAF CURRENT & PROJECTED AIRCRAFT AGES BASED ON MODERNIZATION PLANS AS OF SEPTEMBER 2001 BY COMPONENT[2]

U.S. AIR FORCE

Aircraft Aging Summary
In Years of Aircraft Age

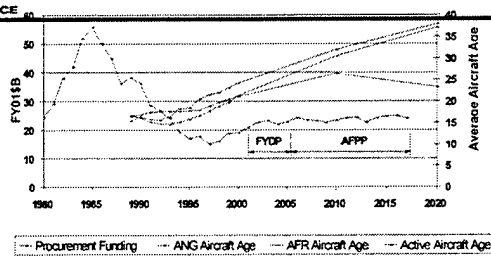
	FY 00	FY10	FY 20		FY 00	FY10	FY 20
Fighters				**Inter-Theater Airlift**			
Total	**14.1**	22.5	20.5	***Total***	**25.1**	**19.1**	↑31.6
Active	**13.7**	20.7	16.2	***Active***	**20.3**	**15.7**	**25.7**
ANG	15.9	25.7	↑**31.7**	***ANG***	32.1	29.3	23.8
AFRC	16.3	26.3	↑**35.1**	***AFRC***	32.1	39.9	↑**49.9**
Tankers				**Intra-Theater Airlift**			
Total	37.6	47.5	↑33.3	***Total***	**22.3**	**26.4**	↑31.6
Active	38.7	46.2	37.2	***Active***	**30.2**	**28.4**	↑**30.1**
ANG	41.1	51.1	↑**60.5**	***ANG***	**19.3**	**25.8**	↑32.5
AFRC	41.1	51.1	↑**59.9**	***AFRC***	**14.6**	**24.2**	↑**24.3**

Red Denotes Above Maximum Age

Orange Denotes Above Average Age

U.S. AIR FORCE

Aircraft Inventory Age Trends



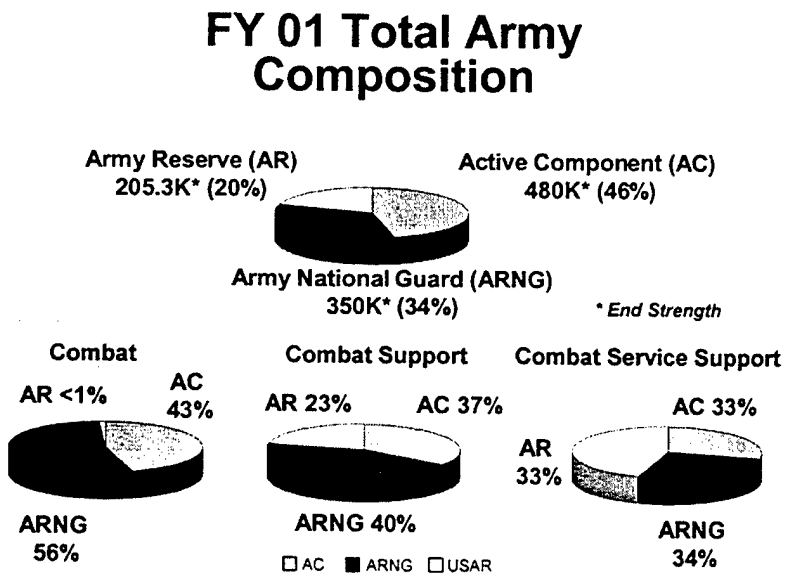
- **As Reagan Administration build-up ended average age of aircraft inventories all components began steady increase**
- **AC trend continues until procurements of C-17, F-22, and JSF reverse trend in 2010; RC continues indefinitely**

Source: AF Modernization Roadmap

Integrity - Service - Excellence

[2]Source AF/XP and AF/QR on aircraft aging, September 2001. Aircraft Inventory Age Trends from Science Applications International Corporation (SAIC). Air Reserve Component Modernization Study. May 2001, p. 19.

APPENDIX 3[3]



US Army Transformation Transition Time-Line[4]

FY	AC LEGACY	AC IBCT or Objective	RC LEGACY	RC IBCT or Objective
2010	81%	19%	92%	8%*
2015	53%	47%	79%	21%
2020	25%	75%	61%	39%
2025	0%	100%	39%	61%
2029	0%	100%	0%	100%

*Assumes that 2 RC IBCT Brigades are funded

[3]HQ US Army Force Structure Brief, 2002
[4]Dallas D. Owens Jr., AC/RC Integration: Today's Success and Transformation's Challenge, (US Army War College, October 200), 36.

APPENDIX 4
US ARMY AGING DATA

FLEET AGE BY COMPONENT FOR FORCE PACKAGE 1 (FP 1)[5]

Fleet	Economic Useful Life (EUL)	AC	ARNG	USAR
CUCV	11	11.7	11.7	11.7
HMMWV	14	7.2	7.0	6.3
2.5T	20	18.8	**25.6**	**27.4**
5 T	22	9.8	16.3	10.4
M915	20	13.6	12.4	7.6
HEMTT	20	10.0	9.7	9.7
PLS	20	2.1	2.1	2.1
HET	20	3.1	3.3	4.4
LET/MET	20	11.4	7.2	9.8
ALL	N/A	10.1	13.3	11.3

Red denotes above EUL

Army Helicopter Ages, MC Rates and Inventory[6]

	Average Age in FY 01	MC Rate in FY 01	Inventory
UH-60A	16.44	62%	925
UH-60L	6.42	80%	480
CH-47D	12.2	64%	439
UH-1	28.27	29%	1000
AH-1	27.62	18%	463
OH-58A & C	29.32	63%	480
OH-58D	5.97	85%	385
AH-64A	11.05	68%	536
AH-64D	1.6	67%	155
Total		N/A	4863

Aircraft highlighted in yellow are predominately in the ARNG and USAR, representing 39% of the helicopter fleet.

[5] HQ US Army, DAPR-FDL, "Fleet Age By Force Package and Component," Washington, DC: November 1998.
[6] Ibid.

APPENDIX 5[7]
NAVY/MARINE CORPS AGING DATA

Equipment Average Age

Ships	DIST	NRF	EUL
FFG	8/35	20	30
LST (FREDERICK)	1/1	31	30
MCS (INCHON)	1/1	31	30
MCM	5/14	12	30
MHC	10/12	5	30

Aircraft Age/Economic Useful Life					
T/M/S	Res	EUL	T/M/S	Res	EUL
UH-3H	40	30	F/A-18	17	20
CH-46E	34	30	C-20D	15	30
DC-9	32	38	CH-53E	13	20
UH-1N	30	30	KC-130T	13	38
F5	27	20	SH-60F	12	22
C-9B	27	38	HH-60H	11	22
EA-6B	26	20	AH-1W	8	30
UC-12B	22	16	MH-53E	8	20
P-3C	20	30	C-130T	8	38
SH-60B	18	22	C-20G	8	30
E-2C	18	17	UC-35C	2	30

NAVAL RESERVE
MARINE CORPS RESERVE
BOTH RESERVE COMPONENTS

Equipment Average Age

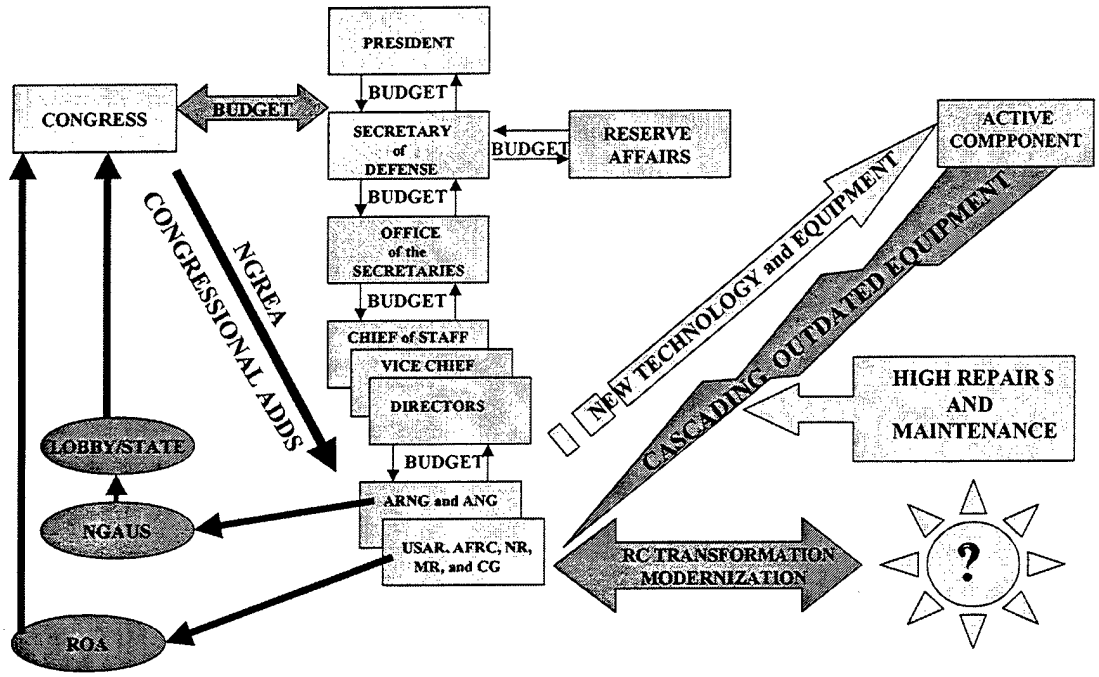
Ships	DIST	NRF	All
FFG	8/35	20	17
LST (FREDERICK)	1/1	31	N/A
MCS (INCHON)	1/1	31	N/A
MCM	5/14	12	10
MHC	10/12	5	5

Active and Reserve Aircraft Average Age					
T/M/S	Res	All	T/M/S	Res	All
UH-3H	40	37	F/A-18	17	14
CH-46E	34	33	C-20D	15	N/A
DC-9	32	N/A	CH-53E	13	12
UH-1N	30	27	KC-130T	13	N/A
F5	27	N/A	SH-60F	12	11
C-9B	27	27	HH-60H	11	8
EA-6B	26	19	AH-1W	8	10
UC-12B	22	20	MH-53E	8	10
P-3C	20	23	C-130T	8	N/A
SH-60B	18	13	C-20G	8	N/A
E-2C	18	11	UC-35C	2	N/A

NAVAL RESERVE
MARINE CORPS RESERVE
BOTH RESERVE COMPONENTS

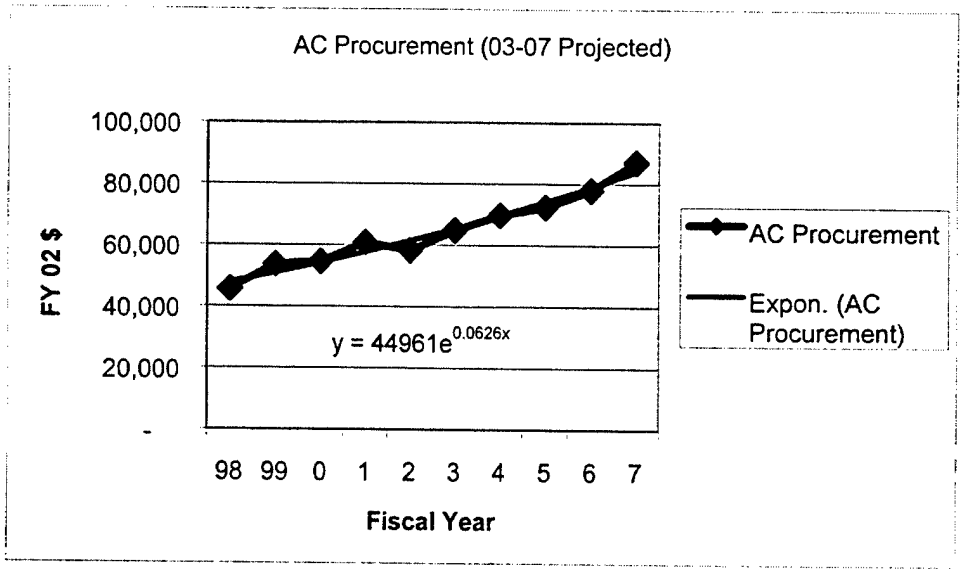
[7] HQ US Naval Reserve, NGRER Report to OSD/RA, PowerPoint Slides, January 2002. Instead of average age comparisons between Naval/Marine Reserve and Active Navy/Marine, the comparison data consisted of comparing the Naval/Marine Reserve with overall average of the components. This methodology masks the differences between the components.

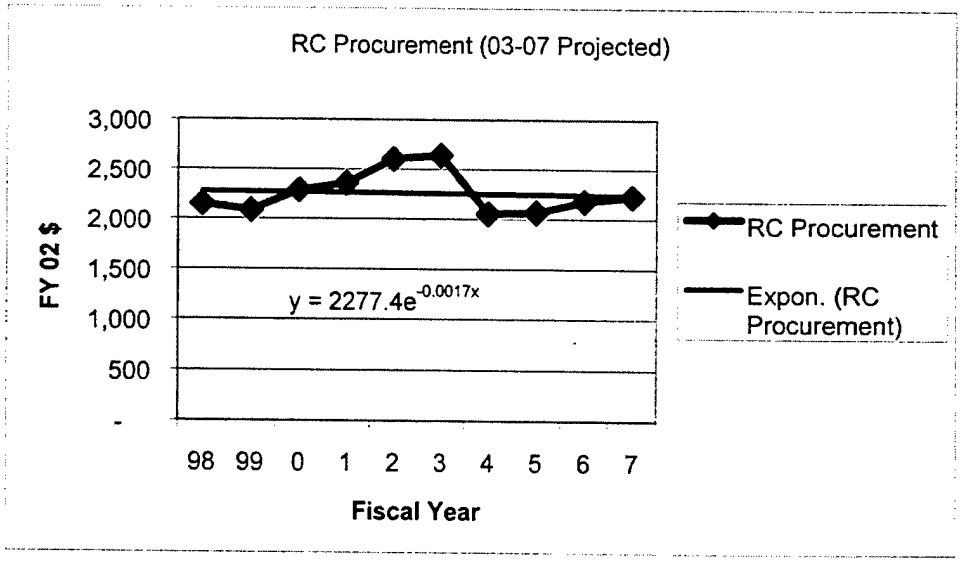
APPENDIX 6



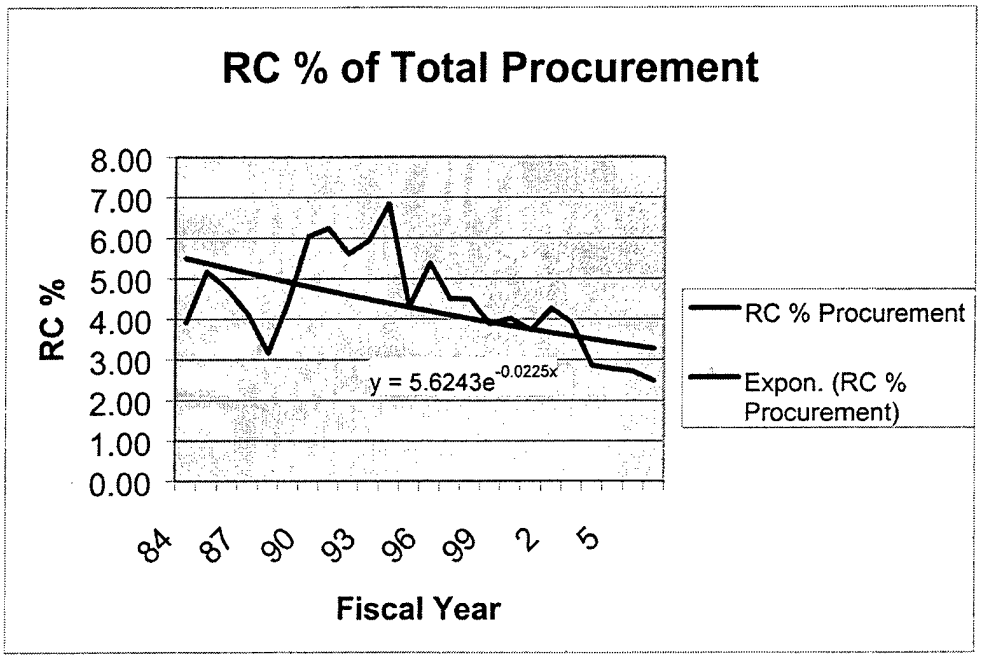
RC FUNDING AND EQUIPMENT LIFE CYCLE

APPENDIX 7[8]





[8] Office of the Under Secretary of Defense (Comptroller), Department of Defense Budget. Procurement Programs (P-1R). FY 98-03. Historical data crosschecked with OSD/RA and RFPB data.


RC % of Total Procurement
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
RC %
y = 5.6243e^-0.0225x
84
87
90
93
96
99
2
5
Fiscal Year
RC % Procurement
Expon. (RC % Procurement)

APPENDIX 8[9]
RAW DATA

FY	AC Procurement	RC Procurement	RC% of Total Procurement	RC % of Total Force
1984	$124,797.0	$5,081.5	3.91%	32.85%
1985	$134,325.0	$7,326.0	5.17%	33.59%
1986	$125,084.0	$6,221.7	4.74%	34.25%
1987	$105,687.0	$4,555.6	4.13%	34.60%
1988	$102,453.0	$3,348.3	3.16%	35.10%
1989	$96,704.0	$4,486.2	4.43%	35.46%
1990	$94,148.0	$6,049.0	6.04%	35.34%
1991	$80,443.0	$5,357.7	6.24%	36.23%
1992	$69,453.0	$4,130.1	5.61%	38.14%
1993	$57,246.0	$3,593.9	5.94%	38.28%
1994	$46,270.0	$3,395.4	6.84%	37.62%
1995	$46,226.0	$2,076.3	4.30%	38.38%
1996	$43,921.0	$2,499.9	5.39%	38.48%
1997	$44,209.0	$2,086.3	4.51%	38.54%
1998	$45,654.0	$2,147.0	4.49%	38.52%
1999	$53,762.0	$2,084.9	3.88%	38.50%
2000	$54,626.0	$2,287.8	4.02%	37.32%
2001	$60,881.0	$2,358.0	3.73%	37.25%
2002*	$58,998.0	$1,902.0	3.12%	38.30%
2002	$58,299.0	$2,601.1	4.27%	38.30%
2003	$64,859.0	$2,640.8	3.91%	??
2004	$69,720.0	$2,055.0	2.86%	??
2005	$72,429.0	$2,067.0	2.78%	??
2006	$77,908.0	$2,178.0	2.72%	??
2007	$87,092.9	$2,223.0	2.49%	??

Note: AC Procurement is RC Procurement subtracted from Total DoD Procurement; All dollars based on Budget Authority (BA); All Dollars are Then Year Dollars converted to FY 02$ using Table 5-6, Department of Defense Deflators – BA, 2002; RC % of Total Force is based on RC end strength compared to overall end strength.

[9] Office of the Under Secretary of Defense (Comptroller), Department of Defense Budget. Procurement Programs (P-1R). FY 93-03 (except 1994). Historical data crosschecked with OSD/RA and RFPB data.

[1] Chris Vaughn, "New Gear Gives Reservists An Edge," Fort Worth Star-Telegram 13 January 2002, 1.

[2] P-1R is a subset of the Defense Procurement Program budget, "P-1" request. Equipment requirements are identified and validated by the services for each of their reserve components. Approved requirements are programmed through Service Program Objective Memorandum (POM) processes, reported in "P-1R", and incorporated in the overall "P-1". These reports, consolidated by the Office of the Secretary of Defense, are then sent to Congress, where actual funding is appropriated.

[3] The focus of this paper is the Select Reserve.

[4] Stratfor, "Emerging Bush Doctrine Reshaping US Strategy," 25 January 2002; available From <http://www.stratfor.com/region.php?ID=8; Internet>; accessed February 25, 2002.

[5] Max G. Manwaring, "Studies in Asymmetry," (Carlisle, PA: Strategic Studies Institute, September 2001) and Martin Van Creveld, "The Transformation of War," New York: Free Press 1991 and Colin S. Gray, "Thinking Asymmetrically in Times of Terror," Parameters 32 (Spring 2002) 5-14.

[6] Chester W. Richards, A Swift, Elusive Sword,"(Washington D.C.: Center for Defense Information, May 2001) 22.

[7] Richards 22.

[8] Charles J. Gross, The Air National Guard and the American Military Tradition, (Washington D.C.: U.S. Government Printing Office, 1995).

[9] Note: the process of incrementally upgrading and adding new capabilities to an existing system is modernization. Recapitalization refers to the replacement of systems with similar or different systems to meet ongoing or emerging mission requirements. However, many times modernization is used as a catch-all term that also includes recapitalization. Note: there are Service differences with these definitions. For example, the US Army considers the rebuild and selective upgrade to zero time/zero miles as recapitalization.

[10] Michael I. Handel, Masters of War: Classical Strategic Thought (London: Franklin Cass Publishers, 2001).

[11] Tempo refers to the rate of activity or use of military personnel and forces. There are three kinds of tempo: Deployment Tempo (DEPTEMPO) which is caused by the deployment of individuals and units to meet the National Security Strategy (NSS); Operating tempo (OPTEMPO) which is caused by the demands of normal operations that Service members face day-to-day; Personnel tempo (PERSTEMPO) cause by the Service personnel system. From John C. F. Tillson, Reducing the Impact of Tempo (Alexandria, VA: Institute for Defense Analyses, 1999) S-1-S-2.

[12] Note: prior to circa 1998 it was Presidential Select Reserve Call-up (PSRC); after 1998 it was PRC, allowing the President to tap into not just the Select Reserve (e.g. IRR). See Dallas D. Owens, Jr., "AC/RC Integration: Today's Success and Transformation's Challenge," (Carlisle, PA: Strategic Studies Institute, October 2001) 25, 57 (Note 48). Title 10, Chapter 10, Section 12304 modified by Public Law 105-261, October 17, 1998 as part of the FY 1999 Appropriations Bill. See also: http://www4.law.cornell.edu/uscode/10/12304.notes.html.

[13] Buster Hash, telephone interview, 5 March 2002.

[14] End strength is a manpower term refers to the number of manpower "spaces" authorizes (personnel numbers authorized).

[15] There are also differences between the Reserve Components (Air National Guard & Air Force Reserve, etc.).

[16] Office of the Secretary of Defense, Reserve Component Employment 2005 Study, http://www.defenselink.mil/pubs/reces2005_072299.html, 1999. See also the USAF Future Total Force Study by ACS, 2000 and Department of the Air Force, HQ USAF/XPXQ, The Future Total Force, published 2000.

[17] RC units can also provide equivalent capability if they are modernized with equivalent equipment or integrated utilizing AC equipment (e.g., Associate Units in the USAF).

[18] Charles Moskos, The Military More Than Just a Job, (Washington D.C.: Brassey's, 1988) 15-26.

[19] John Hamre, "Integration of the Reserve and Active Components," Memorandum dated 4 September 1998; See also Cohen, William S., "Integration of the Reserve and Active Components," Memorandum dated 4 September 1997.

[20] RC experience (years of service) is higher, retention rates are higher, attrition rates are lower and unit cohesion is higher than the AC in most instances. The vast majority of RC members have prior AC experience. See Robbert, Albert A., William A Williams, and Cynthia R Cook. Principles For Determining Air Force Active/Reserve Mix. Santa Monica, California: Rand, 1999. Additional support for this contention comes from Duncan, Stephen M., Citizen Warriors. Novato, California: Presidio, 1997.

[21] Vandergriff, Donald, (ed.), Spirit, Blood and Treasure, (Novato, California: Presidio Press, 2001) 26.

[22] U.S. Department of Defense. Fiscal Year 1999 Report of the Reserve Forces Policy Board, "Reserve Component Programs," (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs March 2000) 1-7.

[23] Cascading Equipment is the process whereby the Active Component replaces obsolete equipment with "State of the Art Equipment" in order to meet mission requirements. The obsolete equipment is either cascaded (transferred) to the Reserve Component and/or sent to the "Bone Yard" to be cannibalized or resold. Historically, this has been the primary means of modernization and recapitalization for all the RCs.

[24] Lane Pierrot, "Aging Equipment," 24 Feb 1999 available from <http://www.cbo.gov/html: Internet>; accessed September 2001.

[25] U.S. Department of Defense, Quadrennial Defense Review Report (Washington D.C.: Office of the Secretary of Defense 2001) p. 47.

[26] Charles J. Gross, The Air National Guard and the American Military Tradition, (Washington D.C.: U.S. Government Printing Office, 1995) xiii. See also Parameters, 31 (Summer 2001) 4-61.

[27] Rebecca Grant, Airpower and the Total Force: The Gift of Time (Alexandria, Virginia: IRIS Independent Research, 1998) 5. Note: Alexander Hamilton of the regular Army and James Madison of the Virginia Militia became the principal authors of the *Federalist Papers*.

[28] The Individual Ready Reserve (IRR) consists of 374,033 and Inactive National Guard (ING) 4,212 as of September 30, 2000: Source OSD/RA. See Table 3-2 in U.S. Department of Defense. Fiscal Year 2000 Report of the Reserve Forces Policy Board (RFPB), "Reserve Component Programs," (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs, 2001) 34.

[29] Data Based on the DoD Appropriations Act FY 02, Conference Report.

[30] U.S. Constitution Article 1, Section 8 also call for "To raise and support Armies...To provide and maintain a Navy;"

[31] Gross 4.

[32] Ronald S. Hunter, ed., Brief History of the National Guard (Falls Church VA: Uniformed Services Almanac, Inc. 2001).

[33] Renee Hylton, Robert K. Wright, A Brief History of the Militia and National Guard, (NGB: Washington D.C., 1993).

[34] John Cattland, Gilbert Brauch, Jr., Mike Konvalinka, Jeffrey McCurdy, and Paul Wilke, "Reserve Component Equipment Compatibility: RA904R1," (McLean, VA: Logistics Management Institute, 2000).

[35] Dallas D. Owens, Jr., "AC/RC Integration: Today's Success and Transformation's Challenge," (Carlisle, PA: Strategic Studies Institute, October 2001) 32.

[36] HQ US Army, DAPR-FDL, "Fleet Age By Force Package and Component," U.S. Army PowerPoint Slide, Washington, DC: November 1998.

[37] U.S. Department of Defense. Fiscal Year 1999 Report of the Reserve Forces Policy Board, "Reserve Component Programs," (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs, March 2000),

[38] Vanishing Vendors—when equipment is so old, much of the industrial base that make the spare parts goes out of business or moves on to new production lines.

[39] Statement of Major General Paul D. Monroe, Jr., Adjutant General, State of California, Testimony to Senate Judiciary Subcommittee on Technology, Terrorism, and Government Information Subcommittee, December 13, 2001. AGAUS Point Paper on Homeland Security, 15 October 2001. See also MG Phillip Oates, Adjutant General Alaska, "Homeland Security and the National Guard," Unpublished Paper, February 15, 2002.

[40] "History of the Army Reserve," Revised 7 December 2001, available from <http://www.army.mil/usar.html>; Internet; accessed 16 November 2001.

[41] "History of the Army Reserve," Revised 7 December 2001, available from <http://www.army.mil/usar.html>; Internet; accessed 16 November 2001.

[42] Secretary of Defense Melvin B. Laird, Memorandum to the Secretaries of the Military Departments, 21 August, 1970, as referenced in Citizen Warriors, Stephen M. Duncan, pp. 140-141. According to Abrams biographer, "Abrams deliberately built into the sixteen-division structure a reliance on reserves that ensured that no president would be able to send the army into war in the future without activating reserve forces." (Duncan, 144), from Lee Sorely, Thunderbolt, (New York: Simon and Schuster, 1992) pp. 360-368.

[43] James T. Currie, Richard B. Crossland, "Twice the Citizen," (Washington D.C.: Office of the Chief Army Reserve, 1997) 212-215.

[44] Burk, James "The Military Obligation of Citizens Since Vietnam," Parameters 31 (Summer 2001) 54 and Ashton Carter and John P. White, "Keeping the Edge Managing Defense for the Future," ed., (Cambridge, MA and Stanford, CA.: Preventive Defense Project, 2000).

[45] United States Army Reserve-History, Revised 4 December 2001, <http://www.army.mil/usar/organization.html>;Internet>; accessed 16 November 2001.

[46] United States Army Reserve-History, Revised 7 December 2001, <http://www.army.mil/usar.htlm>; Internet; accessed 16 November 2001.

[47] United States Army Reserve-History, Revised 4 December 2001, <http://www.army.mil/usar/organization.html>; Internet; accessed 16 November 2001.

[48] Currie and Crossland, p. 303.

[49] U.S. Department of Defense. Reserve Component Programs, Fiscal Year 1982 Report of the Reserve Forces Policy (Washington, DC: Office of the Secretary of Defense, 1983) p.12.

[50] Currie and Crossland, p. 306.

[51] Currie and Crossland, p. 306.

[52] Currie and Crossland, p. 308.

[53] U.S. Department of Defense, National Guard and Reserve Equipment Report for Fiscal Year 2002(Washington DC.: Office of the Secretary of Defense Reserve Affairs, 2001), p. 2-26.

[54] Currie and Crossland, p. 577.

[55] Currie and Crossland, p. 577.

[56] Currie and Crossland, p. 577.

[57] Currie and Crossland, p. 577.

[58] U.S. Department of Defense. Fiscal Year 2000 Report of the Reserve Forces Policy Board (RFPB), "Reserve Component Programs," (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs, 2001) p. 83. Henceforth referred to as RFPB 2000.

[59] RFPB 2000, pp. 82-83.

[60] Cascading Equipment is the process whereby the Active Component replaces obsolete equipment with "State of the Art Equipment" in order to meet mission requirements. The obsolete equipment is either cascaded (transferred) to the Reserve Component and/or sent to the "Bone Yard" to be cannibalized or resold. Historically, this has been the primary means of modernization and recapitalization for all the RCs.

[61] U.S. Department of Defense, National Guard and Reserve Equipment Report [NGRER] for Fiscal Year 2002, (Washington D.C.: Office of the Secretary of Defense Reserve Affairs, 2001), p. 2-26. Henceforth referred to as NGRER 2002.

[62] NGRER 2002, p. 2-25.

[63] NGRER 2002, p. 1-6.

[64] NGRER 2002, p. 2-24.

[65] NGRER 2002, p. 2-24.

[66] NGRER 2002, pp. 257-258.

[67] Gerald T. Cantwell, Citizen Airmen, (Washington, D.C.: US Government Printing Office, 1997), p. 26.

[68] Gross, p. 60-61.

[69] In a survey of key 78 AFR and ANG leaders (0-5 and above) prior to the 2001 QDR, "Modernization and Interoperability" by far was the biggest concern for the ARC. This survey was completed by ACS Inc., Fall 2000.

[70] Carol DiBaptist, AF Under Secretary, Presentation to Gabriel Chapter, AFA," 25 May 00 in Science Applications International Corporation (SAIC). Air Reserve Component Modernization Study. (May 2001), p. 5.

[71] U.S. Department of Defense, Quadrennial Defense Review Report (Washington D.C.: Office of the Secretary of Defense 2001).

[72] Chris Vaughn, "New Gear Reservists An Edge," Fort Worth Star-Telegram 13 January 2002, p. 1.

[73] The Litening II Pod was the winner of the David Packard Excellence In Acquisition Award.

[74] Chris Vaughn 1, quote internal was by BG Thomas Dyches, commander 301st Fighter Wing.

[75] Naval Reserve Force Public Affairs Office, "One Navy Force: A Guide to the US Naval Reserve," Harrisburg, Pennsylvania: Navy and Marine Corps Reserve Center, No date.

[76] U.S. Department of Defense, National Guard and Reserve Equipment Report [NGRER] for Fiscal Year 2002, (Washington D.C.: Office of the Secretary of Defense Reserve Affairs, 2002) 2-26. Henceforth referred to as NGRER 2003, pp. 4-5.

[77] NGRER 2003, p.4.

[78] US Marine Corps Reserve, "A Brief History of the Marine Corps Reserve," available from https://www.mfr.usmc.mil/cmd/aboutmfr.htm; Internet; accessed January 2002.

[79]John A. Tilley, "History of the U.S. Coast Guard Auxiliary," January 2001; available from <http://www.uscg.mil/hq/g-cp/history/Auxiliary%20History.html>; Internet; accessed January 2002.

[80] No Author Listed – Article Credited to the Office of the Coast Guard Reserve, "Update on Coast Guard Reserve Equipment," The Officer, October 2001, pp. 34-36.

[81] Andrew Krepenivich,"Why No Transformation?," 4 February 1989; available from <http://www.csbaonline.org.>; Internet; accessed 1 March 2002.

[82] The Reserve Forces Policy Board (RFPB) was created by act of Congress in 1952. The predecessor of the Board was the Committee on the Civilian Components, created by the Secretary of Defense in 1947 as a result of an Executive Order of President Truman. The statute provides that, "The Board, acting through the Assistant Secretary of Defense for Reserve Affairs, is the principal policy adviser to the Secretary of Defense on matters relating to the reserve components." (10 USC 10301(c)). See < http://www.defenselink.mil/ra/rfpb/factsht.htm> accessed March 2002.

[83] U.S. Department of Defense, National Guard and Reserve Equipment Report for Fiscal Year 1982, (Washington D.C.: Office of the Secretary of Defense Reserve Affairs 1982), p. 11.

[84] National Guard and Reserve Equipment Report for Fiscal Year 1983, p. 10

[85] National Guard and Reserve Equipment Report for Fiscal Year 1982, p. 11.

[86] National Guard and Reserve Equipment Report for Fiscal Year 1982, p. 11.

[87] Department of Defense Directive, Number 1225.6, "Equipping the Reserve Forces,"

[88] Stephen M. Duncan, Citizen Warriors (Novato, California: Presidio, 1997), p. 155.

[89] Sonny Montgomery. Personal Interview. 3 January 2002.

[90] Note the progression of NGREA totals: FY 82 $50M, FY 83 $125M, FY 84 $176M, FY 85 $380 M, FY 86 $1.5 billion. See Table 3-1, RFPB 1988, p. 121.

[91] Congressman Sonny Montgomery (D-Mississippi), Washington DC, 28 January 1985: Announcement of seven initiatives to improve the readiness capabilities of the Reserve Components.

[92] NGRER 2003 1-2. Title 10, USC, Section 10541 "(a) The Secretary of Defense shall submit to the Congress each year, not later than February 15, a written report concerning the equipment of the National Guard and the reserve components of the armed forces..."

[93] Professional Staff Member, House Armed Services Committee. Personal Interview, 26 October 2001.

[94] Debbie Lee James, Telephone Interview. 24 October 2001.

[95] SecDef Cheney and Comptroller O'Keefe actually budgeted 0350D (NGREA) in the Presidents Budget in FY 91. They thought it would reduce the pork—it did not. This added to the perception that all of NGREA was pork while infuriating OSD officials. (John Conoway, telephone interview, November 2001 and Wayne Gracie, telephone interview, January 2002.)

[96] James Lariviere. Personal interview, 26 October 2001.

[97] When Republicans took control of Congress in 1995, they purged appropriation bills of earmarks which they felt was part of the out-of-control spending propensity of Congress. See Allen Schick, (2000). The Federal Budget: Politics, Policy, Process, Washington, D.C.: Brookings Institution Press, p. 213.

[98] Congressional adds are "earmarks" with increased money to pay for them, but not always. Sometimes they take money out another program or they will leave it no clear description on how to do it.

[99] Rick Maze, "Cohen tells brass: Don't go around me", *AirForce Times*, 2 Feb 97, p. 3.

[100] James Lariviere, Personal Interview, 26 October 2001 Military Legislative Assistant for Congressman Buyer, then the key member working NGREA funding. Mr. Lariviere is now a Professional Staff Member on the House Armed Services Committee.

[101] RFPB 1988, p. 121.

[102] Office of the Under Secretary of Defense (Comptroller), Department of Defense Budget. Procurement Programs (P-1R). FY 2003, February 2002. Initially per phone conversation with Army SAFM-BUL, January 2002.

[103] Charles O. Jones, An Introduction to the Study of Public Policy, ed.(Monterey, CA: Books/Cole Publishing Company, 1984).

[104] Tillson, pp. 1-2.

[105] Office of the Under Secretary of Defense (Comptroller), Department of Defense Budget. Procurement Programs (P-1R). FY 1993-2003 (except 1994). Data crosschecked with OSD/RA and RFPB.

[106] Lane Pierrot, "Aging Equipment," 24 Feb 1999 available from <http://www.cbo.gov/html; Internet>; accessed September 2001.

[107] Office of Under Secretary of Defense (Comptroller), Department of Defense Budget Fiscal Year 2003, Procurement Programs (P-1R), February 2002.

[108] Awaiting Service Recapitalization Plans due to SecDef in March 2002. Also titled 2003 DPG Recapitalization Study.

[109] Science Applications International Corporation (SAIC). Air Reserve Component Modernization Study. May 2001.

[110] Department of the Army, Army Transformation Brief, April 2001. From Association of the United States Army, Army Recapitalization—A Focused Investment In Today's Army, (Arlington, Virginia: Institute of Land Warfare, March 2002) pp. 4-5.

[111] Army Aviation Modernization Plan announced 7 September 2001. See also NGRER 2003, pp. 2-11-2-14.

[112] Instead of average age comparisons between Naval/Marine Reserve and Active Navy/Marine, the comparison data consisted of comparing the Naval/Marine Reserve with overall average of the components. This methodology masks the differences between the components.

[113] U.S. Department of Defense. Fiscal Year 2000 Report of the Reserve Forces Policy Board, Reserve Component Programs, (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs May 2001) p. 83, Table 5-1. FY 01 Data from the Draft Fiscal Year 2001 Reserve Forces Policy Board (Table 5-1). FY 04 Projected comes from NGRER 2002.

[114] Andrew Krepenivich,"Why No Transformation?," 4 February 1989; available from <http://www.csbaonline.org.>; Internet; accessed 1 March 2001.

[115] Michele Flournoy, "Report of the National Defense University Quadrennial Defense Review 2001 Working Group," (Washington D.C: National Defense University Institute for National Strategic Studies, November 2000), p. 14.

[116] David Jablonsky, "Army Transformation: A Tale of Two Doctrines" in Conrad C. Crane, ed., Transforming Defense, (Strategic Studies Institute: Carlisle, PA.: December, 2001)

[117] Crane, p. 90.

[118] Captain Bob Krumm, US Army, "Why are the Marines in Afghanistan?" (Proceedings, Volume 128/1/1,187, January 2002) 112.

[119] Jablonsky, p. 49.

[120] Crane pp. 92-93.

[121] Crane p. 94.

[122] Crane pp. 94-95.

[123] William S. Lind, Maj John F. Schmitt, USMCR, Col Gary I. Wilson, USMCR, "4th Generation Warfare: Another Look," Marine Corps Gazette, November 2001, 69-71. Original 4GW article appeared in December 1994. William S. Lind, COL Keith Nightengale, USA, Capt John F. Schmitt, USMC, Col Joseph W. Sutton, and Lt Col Gary I. Wilson, USMC, "The Change Face of War: Into the Fourth Generation," Marine Corps Gazette, October 1989.

[124] "Comprehensive Review of Reserve Forces," briefing slides with scripted commentary, QDR Steering Group – subject, Comprehensive Review of Reserve Forces. U.S. Marine Corps brief. Navy Total Force Reserve Review, 2002. USAR Reserve Components Comprehensive Review. All briefings took place in January, 2002.

[125] Dallas D. Owens Jr., AC/RC Integration: Today's Success and Transformation's Challenge, (US Army War College, October 200), p. 32.

[126] Owens pp. 36-38.

[127] Carol H. Weiss, Evaluation, (New York: Prentice-Hall, 1998).

[128] Robert Bellah et al., The Good Society, (New York: Vintage Books, 1992).

[129] Douglas J. Amy, "Why Policy Analysis and Ethics Are Incompatible, Journal Of Policy Analysis and Management, 1984, pp. 573-591.

[130] Amy, p. 574.

[131] Martin Rein, Social Science and Social Policy, (New York: Penguin, 1976).

[132] John C. F. Tillson, "Reducing the Impact of Tempo," (Alexandria, VA: Institute for Defense Analyses October, 1999).

[133] Allen Schick, The Federal Budget: Politics, Policy, Process, (Washington, D.C.: Brookings Institution Press, 2000), p. 291.

[134] This sentiment was expressed during numerous interviews with RC officials. Note: "Modification installation funding was authorized as an O&M expenditure until the late 1980s when installation funding authority was moved to procurement accounts to allow greater visibility of total modernization costs." See Science Applications International Corporation (SAIC). Air Reserve Component Modernization Study, May 2001, p 27.

[135] Science Applications International Corporation (SAIC). Air Reserve Component Modernization Study. May 2001.

[136] SAIC, p. 27.

[137] Allen Schick, The Federal Budget: Politics, Policy, Process, (Washington, D.C.: Brookings Institution Press, 2000), p. 215.

[138] U.S. Department of Defense. Fiscal Year 2000 Report of the Reserve Forces Policy Board, "Reserve Component Programs," (Washington D.C.: Office of the Assistant Secretary of Defense for Reserve Affairs, May 2001) xxxi.

[139] At the 12 October 2001 Association of the Army Resolutions Committee meeting, LTG Thomas Plewes, Chief of the Army Reserve stated, "Our first priority is the Army's first priority – modernization. We are in line with them."

[140] The USAF data was exception, while the other Services had enough data for us to see ominous trends and that they are severe but without delineation for long-term specifics like the USAF aging data.

[141] See Elaine Grossman, "Financial Statements Called Unreliable: DoD Inspector General Blames Comptroller For Poor Accounting," Inside the Pentagon, August 6, 1996. See also< http://www.defese-and-society.org/fcs/comments/c169htm>

[142] Office of the Inspector General, Department of Defense, "Equipment Procurement For The National Guard and Reserve Forces," February 2001.

[143] SecDef Donald Rumsfeld, Speech at the National War College, 31 Jan 2002.

[144] Legislative required question for 2001 QDR: "The anticipated roles and missions of the reserve components in the national defense strategy and the strength, capabilities, and equipment necessary to assure that the reserve components can capably discharge those roles and missions."

[145] Dallas D. Owens, Jr., "The Military's Role in the New Domestic Security Environment: Will Army Missions Change?", Defeating Terrorism, ed. John R. Martin (Carlisle, PA.: Strategic Studies Institute, January 2002) pp. 37-42.

[146] Jablonsky, pp. 55-63.

[147] "The Roles and Missions of the Reserve Forces, A White Paper," (Washington D.C.: Reserve Officers Association of the United States, 4 July 2001), p. 8.

[148] Dallas D. Owens, Jr., teleconference call, 8 November 2001.

[149] OCAR, DAAR-FDS, Information Paper, Subject: Status of the High Mobility Multipurpose Wheeled Vehicle (HMMWV) in the U.S. Army Reserves (No Date Available).

[150] Rehberg, Carl D., "PPBS" The Need For A Paradigm Shift To a New Process," Unpublished Paper, May 2001. Numerous studies and commissions have called for PPBS Reform. Most recently the Hart-Rudmann Commission. The Summer 1996 Defense Science Board report listed some key comments that reflect some of the ethical concerns with the PPBS: "If I save anything they (DoD) will take it away." "No matter what they say this year, they won't give me my savings next year." "They play sleight-of-hand games with the money." "Lie, cheat and steal is what you have to do to protect yourself." In a stunning critique of PPBS, the 1997 National Defense Panel (NDP) stated: "The Planning, Programming and Budgeting System (PPBS) has evolved into a rigid and bureaucratic process that has transformed Pentagon operations into an endless series of budget drills—to the detriment of strategic planning and sound management. A large portion of the Secretary and service headquarter staff positions exist primarily to support the cumbersome process. Moreover, the system "locks in" the services to programmatic and funding decisions several years in advance—regardless of changing circumstances. The Panel recommends that the Department fundamentally reorganize its planning, programming, and budgeting processes to enhance its agility, efficiency, and effectiveness." NDP Report, p 79.

[151] John Rothrock , unpublished e-mail May 2001.

[152] Constitution of the United States, Article 1, Section 8.

[153] COL John Hawkins, "U.S. Army Reserve Legislative Update – Report on FY 2000", Washington D.C., Briefing at Mid-Winter Meeting of the Reserve Officers Association, 26 January 2000.

[154] Sonny Montgomery, 3 January 2002 interview with retired Congressman Sonny Montgomery, the father of DPP/NGREA, and former leader of the House Guard/Reserve Caucus. He handed responsibility for NGREA over to Congressman Steve Buyer for several years, who then turned it over to Congressman Gene Taylor ... both of whom were then at the forefront of the caucus. Additionally, each year's NGREA calculations and recommendations were primarily completed by the members' respective PSMs.

[155] Items of Special Interest indicate that a Congressman or Senator has an intense, personal interest in this item being included or amended to the bill in question. It indicates to his/her fellow legislators that this is of significant importance and is an implicit request to defer to that position in the interest of political pragmatism.

[156] Kimo Hollingsworth, Personal Interview, 2 January 2002 interview with Kimo Hollingsworth, Military Legislative Assistant (MLA) for Congressman Steve Buyer.

[157] Patricia Walker, telephone interview, 24 October 2001.

[158] Jayson Spiegel, personal interview, 15 October 2001. Executive Director of the Reserve Officers Association. His comments were echoed by COL Chip Hollsworth, this year's ROA President.

[159] This information came during an interview with a Congressional Staffer who requested anonymity.

[160] Gordon Sullivan, personal interview, 16 January 2002. Interview with GEN (Ret) Gordon Sullivan, former Army Chief of Staff and now the President of AUSA. His sentiments were echoed during interviews with LTGs Stroup and Thompson, now both Vice Presidents at AUSA, as well as numerous AUSA staff members. Their purpose seemed quite clear – a united Army, working as one body to meet the assigned Army mission.